

**Mobile Game Based Learning for Males having Sex
with Males Peer Educators in India**

by
Anupama Roy

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Abstract

This thesis aims to examine the effectiveness of a mobile phone based SMS game as a learning intervention for the Peer Educators of the Males having Sex with Males (MSM) groups in Kolkata, India. MSM groups are marginalised and are at higher risk of HIV/AIDS, falling under the core groups for the National AIDS Control and Prevention programmes in India. Peer to peer education for behaviour change in HIV/AIDS prevention projects is a bottom up approach to reach out to this marginalised population for HIV prevention. Training is in place for MSM peer educators but research shows gaps in their support and learning needs.

This project developed a mobile game based learning tool to address the peer educators' learning and support needs. Using a participatory research approach a multiplayer SMS based simulation game was developed, deployed and evaluated, using an existing game engine called 'Day of the Figurines'. In an effort to enhance experience sharing and peer learning the real life experiences of the peer educators were captured and incorporated through a participatory and iterative process as scenarios of the game. A SMS game on mobile phones was chosen to be in keeping with the marginalised, secretive nature of the MSM identity of the peer educators as well as be in keeping with the mobile nature of their work. The SMS game was piloted in Nottingham and Kolkata and the final intervention was deployed and evaluated in Kolkata with a group of sixteen peer educators from MANAS Bangla, a network of community based MSM organisations in Kolkata, India.

Evaluation of the game showed it to be useable, relevant to peer education, interesting and entertaining but in some cases slow, uninteresting and confusing. The game play was affected by technical faults but players still exchanged SMS messages with the game and communicated between players using the 'chat' feature of the game. Playing the game enabled players to acquire better communication skills and increased confidence, it gave them a feeling of self-efficacy and influenced their work practices. The intervention was instrumental in increasing the peer educators' critical consciousness, it created a space to address the practical barriers faced by the peer educators by providing dialogic methods for developing knowledge, encouraging and facilitating collaboration, developing communication skills and increasing access to learning opportunities. This research contributes an exploration of peer educators' problems, evaluation of mobile game based learning and account of participants' experiences in a mobile-health development context in resource constrained settings.

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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ASHA	Accredited Social Health Activists
CBO	Community Based Organisation
CHW	Community Health Worker
DIC	Drop-In Centre
DoF / DotF	Day of the Figurines
FSW	Female Sex Workers
HIV	Human Immunodeficiency Virus
HCI4D	Human Computer Interaction for Development
ICT	Information and Communications Technology
ICT4D	Information and Communications Technology for Development
IDU	Intravenous Drug Users
ITIC	Integrated Counselling and Testing Centres
IVR	Interactive Voice Response
M4D	Mobile Communication for Development
mGBL	Mobile Game Based Learning
MSM	Males having Sex with Males
MSW	Male Sex Workers
NACO	National Aids Control Organisation
NGO	Non-Governmental Organisation
ORW	Outreach Worker
SMS	Short Messaging Service
STI	Sexually Transmitted Infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
UoN	University of Nottingham
USA	United States of America
WHO	World Health Organisation

CHAPTER 1. Introduction

1.1 Peer Education to Prevent HIV/AIDS

Peer education is one of the most widely used global strategies to address the Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) pandemic. India has the world's third largest population living with HIV/AIDS (UNAIDS, 2008b, Cornish and Campbell, 2009, World Health Organisation, 2010). Peer education typically involves using members of a given group to effect behavioural change among members of the same group (UNAIDS, 1999). In India, the National AIDS Control Programme strategies rely heavily on peer education as a bottom up approach to reach the 'hard to reach' marginalised communities at higher risk of HIV/AIDS through Targeted Interventions. 'Hard to reach' communities include MSM, Female Sex Workers (FSW) and Intravenous Drug Users (IDU) (National AIDS Control Organisation, 2007c, CIA, 2008, National AIDS Control Organisation, 2008). Collectively, they are characterised by unsafe or at risk sexual practices, multiple partner change and in case of IDU, needle use. They are also prone to socioeconomic vulnerabilities such as the complexity of the legal situation about same sex behaviours in India (Ramasubban, 2007, BBC, 2009) and economic deprivation.

Although peer education is a widely used global strategy, surprisingly little is known about the process of peer education and the support needs, problems, and difficulties faced by the of the peer educators (Population Council, 2000, SOMA, 2008). Very little peer education literature addresses the issue of 'peer development', that is, how the peer educators can become more effective peer educators. Much of the work remains in the grey literature of unpublished reports of agencies and organisations working on HIV/AIDS prevention.

Guidelines are in place within the Targeted Intervention projects to train the peer educators, however, there seems to be a great inconsistency in the training provided to the peer educators and in the roles they are expected to perform. Experiences of peer educators show that when peer educators go to the community for outreach work, they face scenarios which they are unable to cope with. Often they are also unable to fully put their training into practice (Population Council, 2000, United Nations Development Program, 2003). Reports reveal that some peer educators feel that the nature of training given to them is abstract and there is a need for psychological and

emotional support, as the peer educators are often exposed to stressful situations (Population Council, 2000). In the Targeted Intervention projects the problems of peer education can range from maintaining the capacities of the peer educators to building partnership within the community. In addition, Targeted Intervention projects often have limited budgets and this makes it increasingly difficult to recruit as many peer educators as might be required to reach out to the vulnerable population (National AIDS Control Organisation, 2007b, SOMA, 2008). Moreover, peer education projects often have high rates of attrition amongst the peer educators and it is difficult to constantly keep recruiting new peer educators and train them. An analysis of project reports show that experiences of peer educators are not documented. Usually they are just shared in meetings, giving little scope for lessons learnt to be passed on to other or future programmes. There is also the need for creating partnerships among the different peer educators' groups to share experiences. In conclusion although peer education can reinforce the learning within the vulnerable groups through ongoing support, there is a lack of ongoing learning and support for the peer educators themselves (Population Council, 2000, SOMA, 2008).

This research looks specifically into bridging the gap between the training needs of the peer educators and their real life experiences. Thus the objective of the study was to design, implement and evaluate a learning support appropriate for the marginalised and discriminated against MSM peer educators' groups in India. This was done using a blended approach of mobile technology, game based learning with elements of experiential and dialogic learning appropriate for adult learners (Freire, 1996).

Aiming to incorporate these factors, this participatory research used an innovative approach to learning for the MSM peer educators by developing a SMS based game on mobile phones. The game provided simulated scenarios based on relevant and practical experiences of the peer educators developed in an iterative and participatory game design approach. To ground these approaches this research investigated peer education at selected sites in West Bengal in India, gaining new insights into the peer educators' support and learning needs with the peer educators. This information was then used to design and develop the SMS based game with the peer educators. It was implemented and evaluated amongst a group of peer educators and supporting staff.

1.2 Mobile Game Based Learning

This study selected a mobile learning approach as it has the potential benefit of being ubiquitous, timely and available in an unthreatening environment suitable for the

MSM peer educators. Mobile phones are also personal and familiar devices and can enable access to individualised, context specific, 'anytime and anywhere' learning. It is suggested that mobile learning can also be more cost effective than conventional approaches as it reduces the cost incurred through computer and internet access or cost for organising training workshops. Data from 2011 show that India has over 868,639,000 mobile phone subscribers, out of which around 24,116,000 are in Kolkata¹. This shows that mobile phones have a great potential to be exploited in this field. Mobile learning is also closely linked to the concept of mobility in terms of space, time and different aspects of the learners' life. Experiences of working with the MSM have shown that the peer educators often travel distances and work at different locations to guard their MSM identities from families and local communities. Therefore mobile learning potentially fits the profile of this group.

The game based approach follows the tradition of using games (Salen and Zimmerman, 2003) and computers (Griffiths, 2002, Burgos et al., 2007) in learning. Within mobile learning, mobile game based learning is a growing field. Areas that have already used games include areas where learning is often experiential in nature such as for professional development, where virtual experience can save on real life costs. Games and simulations from a range of different ICT sources such as, internet, email databases, SMS offer greater opportunities for scenario-based and exploratory learning (de Freitas, 2006).

Nonetheless, mobile game based learning in resource poor setting has its challenges. Kaplan (2006) identifies the lack of literature for mobile phone based intervention in developing countries and that in practice there is a need for understanding the local context, for example, mobile phones often have shared use. Kaplan also identified a need for reform in telecommunication services in the developing countries.

1.2.1 Mobile for Development

This work, taking place with marginalised people in a resource constrained setting falls within the bounds of the 'nascent' field of Mobile for Development (M4D) (Duncombe and Boateng, 2009). Donner (2008) describes this as the use of mobile communications development as "improvements to social, human and economic conditions", and M4D projects are explained to those which intentionally set about to

¹ india-Cellular.com, 2011, Cellular Phone Subscribers in India as on 30th September 2011, [online] available at <URL: <http://www.india-cellular.com/CSR-30-9-11.html>

create an improvement, rather than as an unintended side effect. The uptake of mobile communication in resource constrained settings and in poorer nations has been rapid, but research in the field has been lagging behind practice, leaving theory based approaches, evaluation of best practices and evidence based approaches yet to be formally established (Duncombe and Boateng, 2009, Weber, 2009). There is not only lack of theory based intervention in peer education practices especially for MSM but this is also evident in mobile technology for development and both these fields are in their infancy as a discipline. It was found that there is a lack of training and support that reflects the practical realities of being a peer educator including detailed accounts of the problems/challenges faced in practice and thereby the support needs. In M4D there is lack of detailed account of the participants experience in using mobile for development.

Given this background, this thesis builds on an already existing SMS based game to simulate the learning needs of the MSM peer educators. The already existing game is called the Day of Figurines developed by the Mixed Reality Lab at the University of Nottingham. Details of the game are captured in the subsequent chapters in this thesis.

1.3 Aims and Objectives

The research objective is thus to develop and evaluate the SMS based simulation game on mobile phone for the MSM peer educators in Kolkata, India. The specific aims of the study are:

CHAPTER 1. Explore peer education and identify their learning and support needs.

CHAPTER 2. Design and evaluate the innovative approach to support the MSM peer educators, which is done by re-appropriating on an already existing technology.

Thus the research question is ‘Can a mobile game based learning intervention based on an existing pervasive game platform meet the training needs of the marginalised MSM peer educators’ groups in a resource constrained setting?’

In Chapter 3 Section 3.2 the literature review establishes the specific training needs of the MSM peer educators, identifying several key elements upon which the learning intervention was developed. This led to further deconstruction of the research question into: Can a mobile game based intervention...

- a. ...build a wider knowledge base than just imparting HIV/AIDS information, that is, more collaborative and dialogic approach in the way the peer educators impart knowledge.
- b. ... help peer educators focus on risk behaviour change than HIV/AIDS facts and critical thinking power.
- c. ...develop confidence and technical competence as mentioned in (b).
- d. ...develop communication and group work skills.
- e. ... allow peer educators to share experiences and pass on lessons learnt.
- f. ...provide peer educators with context in which they can collectively renegotiate their peer identities and feel empowered.
- g. ...enhance self respect and self autonomy of the peer educators

In the following chapters, Chapter 2 presents a detailed background of the two major topics covered in the thesis; peer education and mobile game based learning. Following this, Chapter 3 critically reviews literature relating to peer education challenges and gaps in the MSM situation in India, and explores mobile game based learning to support peer education and mobile for development respectively.

Chapter 4 details the participatory methodology and methods for the data collection and the game development including the process of ethical approval for intervening in a marginalised group.

Chapter 5 elucidates the baseline data collection which explores, identifies and describes the roles, challenges and practices of the MSM peer educators in Kolkata with a specific intention to identify the key learning and support needs of peer educators so that it can be used to ground the research aim. In this chapter a brief exploration into MSM peer education has also been undertaken within the constraints of this PhD thesis.

Chapter 6 looks into the participatory design process of the game using data from the baseline study which identified the learning needs. The prioritised issues for learning needs are further developed in an iterative and participatory process to author the game used as the learning intervention. The chapter describes the final version of the game. The game is a multiplayer game where players move around destinations, chat to each other and be engaged in accomplishing dilemmas and missions using objects. These were done via SMS using keywords such as SAY (to chat), FIND (players and objects), GO (to destination).

The final version of the game was used for the final intervention with sixteen peer educators and supporting staff as participants in Kolkata. Chapter 7 presents a description of the events of the day during the final trial with these sixteen participants as there were technical problems which affected the game play and thus influenced the evaluation. Following the events during the final implementation, the chapter describes the data from the game logs for understanding participants' interactions with the game. The evaluation of the final intervention is further presented in Chapter 8, describing the evaluation activities that were conducted using focus group discussions the day after the final trial and follow up interviews that were conducted three months after the final intervention to evaluate the lasting effect, if any, of the intervention.

The final discussion is contained within Chapter 9. This looks at the key findings of the project and relates them to the overall objectives of the work. This includes discussing the whether the SMS intervention had been effective and relates the findings and experiences of the project to related literature.

1.4 Key Findings

The baseline study detailed in Chapter 4 explored peer education in the context of a marginalised MSM peer educators as MANAS Bangla in Kolkata, India. This provided insight into the experiences and problems faced on the ground by peer educators in a resource constrained setting. It was seen that the literature relating to peer education was accurate in detailing the 'messy reality' of peer education; peer educators' views of peer education their role as providing information and services in the community, supporting others but not prominently thinking critically about their situations, nor collaborating and sharing issues with others. The training was also not well timed to meet their needs and did not provide a supportive environment. Further to this however, the baseline also indicated a range of other issues relating to the reality of the peer educators lives, issues with harassment and abuse in their lives and places of work, issues of rivalry and discrimination between different peer educators and problems in working within the organisation, such as expense allowances, targets and lack of support. These all added to the learning and support needs of the peer educators and were taken forward into the game design process.

Whilst predominantly a design exercise, the game design process in Chapter 5 provided an opportunity to consider participatory design when applied with a marginalised group in a resource constrained setting, where as observed by Puri et al. (2004) and Hussain et al. (2012). Participation of the peer educators was often difficult

as concepts and ideas of the game were difficult for the participants to understand. Feedback allowed the game to be tailored toward their interest and understanding however, though then when trying to re-translate this back to a western context for evaluation and piloting in the UK the language and ideas in the narrative were then difficult to understand by the evaluators. It was observed that participation in focus group discussions was affected by the presence of stakeholders with users – that is the inclusion of the peer educators' outreach worker supervisors in the discussion restricted what they would say, though the attitude of the outreach worker helped if they set a relaxed environment.

The final trial of the game allowed evaluation for the SMS game against the objective set out for the intervention. In spite of some technical problems the players did play the game and as a learning intervention the SMS game has proved to be useable and feedback from participants indicated that the game was relevant to and about peer education. The game logs showed that the players interacted with the game, chatted with each other and completed some of the missions by using the keywords mentioned earlier. The feedback also showed that the participants understood what the missions and dilemmas were and the different choices provided through dilemma responses. Entertainment and enjoyment was found in playing the game and in their use of anonymity.

The game was also effective in various ways. The main contributions among others are bridging the gap between training and practice. Other outcomes include the value of the game to peer education in terms of skills acquisition such as effective communication, rapport building, learning different uses of SMS and the value of using mobile phones in networking for and coordinating their outreach work. This increased their confidence and gave them a feeling of self efficacy and influenced their work practices. At times they even appropriated game ideas such as the quick reference card in their outreach practices.

The value of playing the game and involvement in the game design process included building a sense of community, collaboration, networking between each other, valuing each others' opinion which was not otherwise as much well practiced before the intervention. Their involvement also encouraged them to talk about MSM issues to others and gave them recognition of who they are as MSM in an otherwise marginalised existence in India.

Reflecting on this work, it can be said that there are different MSM groups which affects the way the game content is perceived, the way players' engage with the game and the kind of support they require.

Thus in answering whether a mobile game based learning intervention meets the training needs of the marginalised MSM peer educators group in a resource constrained setting, the answer is that yes it can, and that there is a huge potential to tap such kind of mobile, anytime, anywhere learning in a secure and personalised environment. But needs related to raising awareness, engagement in dialogic learning and critical thinking cannot be generalised across the population of a complex and diverse group of MSM.

CHAPTER 2. Background

2.1 Introduction

This chapter describes the background to the research in this thesis. This includes overview of the HIV epidemic in India with regard to MSM. MSM is a marginalised and discriminated against population at higher risk of HIV. Male to male sexuality is socially unacceptable in India making the population hidden and hard to reach for HIV prevention despite their risk to HIV. The strategy to prevent and control HIV in higher at risk population in India is called Targeted Intervention. The National AIDS Control Programme implements targeted interventions through a primarily community based approach. Peer education is a component of this community based approach to HIV prevention where members of the same group approach other at risk members with behaviour change communication, counselling and other services that provide support to this marginalised group. This chapter in addition details peer education as a bottom up approach to HIV prevention, the theories of peer education and summarises what an effective peer educator should be based on the theories stated.

The second element of this thesis is mobile game based learning. The literature review will highlight the problems of becoming an effective peer educator and proposes an innovative approach to support the peer educators. This is based on the relatively new field of mobile game based learning. This chapter will give the background to mobile game based learning as well. This is important to understand when the rationale for the choice of the innovative approach (SMS based game) to support the peer educators is described. Nonetheless, this approach has its own limitations and drawbacks which the researcher is aware of from the beginning and weighs against the benefit. This benefit comes from innovating a new method of support, and evaluating the merits and challenges in doing so. This is critiqued in the literature review. This chapter only details the background of mobile game based learning.

2.2 HIV/AIDS and Males Having Sex With Males in India

Males having Sex with Males or MSM is a higher at risk of HIV/AIDS group in India. Cáceres et al. (2008) define MSM as a biological male having sex with another biological male. There is a debate on defining MSM as the sex 'male' or the gender 'men' but this is not the focus of the study. Recent data show an increase in HIV infection among MSM particularly in Asia (Thomas et al., 2011). India, following the

same trend, has a HIV prevalence among MSM ranging between 6.5 to 7.4 per cent although this is seen as a lower limit estimate (National AIDS Control Organisation, 2010, Kumar et al., 2011). The estimates for prevalence of HIV among MSM vary according to region. That is, the overall HIV trend in this population is stable in India but there are states such as West Bengal, Gujarat, Karnataka with high prevalence of HIV among MSM (National AIDS Control Organisation, 2009). This is alarming as prevention measures have been expanded across the nation (Thomas et al., 2011) and otherwise evidence shows that the National AIDS Control and Prevention programme has been successful in slowing down the epidemic in other groups (UNGASS, 2010). Thomas et al. (2011) explain that prevention efforts for MSM in India involve uni-dimensional practices such as condom distribution, HIV education, voluntary HIV counselling and testing and treatment of Sexually Transmitted Infections (or STIs) and does not always include addressing the wider factors such as addressing psycho-social stigma, stigma among healthcare providers, policy makers and public that affect MSM, or addressing factors that influence high risk behaviours and perception of MSM about high risk behaviours. This leaves us to enquire what are these factors and why are MSM still more at risk to HIV.

2.2.1 Who is MSM?

MSM is a marginalised and discriminated group in India since homosexuality was formally made illegal by a legal code Section 377 of the Indian Penal Code in the year 1860 (Gupta, 2006, Thomas et al., 2011). Thus the MSM experience multiple forms of social and legal discrimination (Chakrapani et al., 2002) although the Delhi High Court overturned the law on July 2, 2009 ruling that gay sex between consenting adults would no longer be unlawful (BBC, 2009). Reports show that most countries lack legal protection for populations at risk such as MSM, or even if these behaviours are not illegal, there is lack of non discriminatory laws which affect the coverage for prevention and control of the marginalised groups making them invisible and inaccessible for prevention and control efforts (UNAIDS, 2008a). Thus there has been a re-emergence of international interest in the role of MSM in the global HIV pandemic with the recognition that social exclusion and discrimination play a major role in determining lower access to care and prevention and also increases the vulnerability of the MSM (American Foundation for AIDS Research, 2008, Cáceres et al., 2008, American Foundation for AIDS Research, 2011).

Research in addition show that most MSM behaviours start at an early age, in addition, pervasive social intolerance along with cultural pressure for men to marry and have children makes them a highly stigmatised and hidden population more so in the Indian context (Chakrapani et al., 2002, Chakrapani et al., 2007, Thomas et al., 2011). Moreover, reviews of literatures argue that MSM is a critical term as categories such as 'gay', 'transsexual' or 'bi-sexual' are not fully applicable to the kind of situational cultural conditions of India where some males may choose to have sex with other males because they have no other sexual outlets in a society where pre-marital sex is a taboo (Praajak, 1997, Seabrook, 1999, UNAIDS, 2006a, Boyce, 2007) or as casual sexual encounters, low access to females (due to strong cultural norms), overcrowding and poverty forcing males to share spaces and opening up opportunities for casual sex, lack of individual private space resulting in many clandestine 'rushed' male sexual behaviours (taking place in public toilets, parks etc.). Other factors such as low incomes makes males ineligible for marriage causing them to opt for male sexual practices (Praajak, 1997, Seabrook, 1999).

In India few males talk about being 'homosexuals' rather they claim to simply taking part in 'homosex' (The Naz Foundation, 1999). These include males across all sections of social strata and age (Parivartan, 2006, Naz Foundation International, 2007). The terms 'gay', 'homosexual', 'transsexual', 'eunuch' used as means to identify oneself are also often alien in the Indian context as MSM include a range of gendered, sexual, same sex sexual desire, preference and activity. Also, many men engaging in sex with effeminate males would consider themselves as 'real men' and not homosexuals. Many of these sexual encounters occur sporadically, over relatively brief periods of time, infrequently over longer periods of time, at times even after being married to a woman, as an exclusive sexual behaviour. Thus homosex takes place situationally at one time or more in varying significance and degrees of involvement, experience and choice (Praajak, 1997). MSM, therefore, is a heterogeneous group which includes several sub groups as 'Hijra', 'Danga', 'Double Decker', 'Panthi' and 'Koti' as explained below. These terms are used only to define activities one participates in (Parivartan, 2006, Naz Foundation International, 2007). MSM thus refers to a biological male having sex with another biological male (Cáceres et al., 2008) and it is described as a behavioural phenomenon rather than a 'group' of people, especially in the context of HIV where the important issue is the risk behaviour than the sexual identity (UNAIDS, 2006a). This thesis looks into MSM behaviour in relation to the HIV/AIDS epidemic primarily and not in relation to the discourse of sexual identities.

For the purpose of this study, MSM will be defined as ‘Males having Sex with Males’ in order to be inclusive of all divergent groups of males engaged in sex with another biological male or both male and female. The national intervention programme that targets MSM for HIV prevention describes the subsets of MSM as follows. These categories are the only included categories for this study as this research is done in collaboration with the Community Based Organisations under the national AIDS prevention programme in India. The subsets of MSM are:

- a. Koti is a self identified label describing males showing varying degrees of ‘femininity’ even though their performative behaviour may not be feminised (these may be situational), who take the feminine role in sexual relationships with their males, and are mainly involved in receptive anal/oral sex by ‘manly’ sexual partners.
- b. ‘Panthi’ or ‘Giriya’ refers to the ‘manly males’ by the Kotis and who practice penetrative sexual roles with male as well as female partners.
- c. ‘Hijras’ are a distinct socio-religious and cultural group viewed as a third gender who dress in feminine attire and are part of organised clans. Ritual castration may be part of Hijra tradition.
- d. Double Deckers are those involved in both receptive and penetrative sex (Naz Foundation International, 2001, Naz Foundation International, 2004, Development Advocacy and Research Trust, 2005, UNAIDS, 2006a, National AIDS Control Organisation, 2007b).

The national programme that targets MSM for HIV prevention is called Targeted Intervention (National AIDS Control Organisation, 2007b). As per the global trend peer education is a core element in targeted interventions to reach out to hard to reach group such as MSM for HIV prevention. The next section elucidates upon Targeted Intervention in relation to how HIV prevention is done among MSM.

2.3 HIV Prevention among MSM

MSM is characterised by high rates of unsafe sex, sexual partner change, low rates of condom use as well as factors related to their economic and socio-cultural vulnerabilities (National AIDS Control Organisation, 2008) such as social marginalisation and discrimination (Chakrapani et al., 2002, Chakrapani et al., 2007, Thomas et al., 2011). Poverty, underdevelopment and illiteracy are also viewed as the principal contributing factors to the spread of HIV/AIDS (Lenton, 2001, Mooney and Sarangi, 2005). Prevention in the vulnerable groups such as MSM gives highest

priority on preventive efforts and saturation of coverage with Targeted Interventions (National AIDS Control Organisation, 2008). The National AIDS Control Organization (NACO) is the central authority within the federal Ministry of Health that deals with HIV/AIDS strategy and Targeted Interventions among vulnerable groups is its primary policy. Targeted Intervention is described as one of the ways of controlling the disease by carrying out direct intervention programmes among 'risk group' or vulnerable groups through a comprehensive and integrated approach such as behaviour change communication, counselling, providing health care support, treatment for STIs and creating an enabling environment to facilitate behaviour change. Since most of the risk groups (Female Sex Workers, Intravenous Drug users among others) are extremely marginalized both socially and economically, it is not possible to access them through conventional government services. Non Governmental Organisations (NGO), Community Based Organizations (CBO) and other appropriate agencies are able to reach out to these populations more effectively by bringing with them their experience of community level work in enhancing people's participation which leads to enhanced prevention, care and support (National AIDS Control Organisation, 2007a).

Research has also argued the importance of community-level interventions in reducing the prevalence of high-risk sexual behaviours in vulnerable populations to prevent HIV transmission (Kelly, 1999). Vulnerable or higher at risk groups need information and services in a focused and non-judgmental manner. A peer-based approach which enables and sustains behaviour change is thus of prime importance. The interventions also needs to be supported by an environment that is conducive to empowering them for behaviour change (Mooney and Sarangi, 2005). In addition, community participation is pivotal also to Targeted Intervention as it recognizes that individual sexual behaviour is determined by a wider range of factors than individual level sexual decision making. Especially in marginalised communities, the basis for healthy behaviour change is not just providing individuals with good information but providing a broader context to support such individuals to put their knowledge into practice (Campbell, 2003, National AIDS Control Organisation, 2007b, National AIDS Control Organisation, 2007a), that is providing an enabling environment. To re-emphasise the importance of a peer based approach, it should be noted that Targeted Interventions also emphasise the need to promote community contexts (such as networks and alliances with members of same groups) that support individual behaviour change. Therefore there is much emphasis on approaches such as community led peer education whereby Targeted Interventions selects members of the

same community as channels for reaching the community (National AIDS Control Organisation, 2007b). In this way community mobilisation becomes easier as peers have the same life experience as the higher at risk community members and thus are more likely to have a better understanding of the community's intellectual, emotional and socio-cultural viewpoints and needs. Peers thus have high acceptance in the community and can function as Agents of Change and accepted role models (National AIDS Control Organisation, 2007a, National AIDS Control Organisation, 2007b, SOMA, 2008).

2.4 Peer Education as a Key Strategy to Reaching Marginalised Populations for HIV Prevention

Peer education is a worldwide strategy used to respond to a wide range of problems (Parkin and McKeganey, 2000, Population Council, 2000). Literally, the term 'peer' refers to 'one that is of equal standing with another; one belonging to the same societal group especially based on age, grade or status'. The term 'education' refers to the 'development' or 'training'. Peer education refers to an approach, a communication channel, a methodology or a strategy. A peer educator is therefore a person who has been specially trained to conduct an education programme for his/her peers (Maritz, 2001). But in practice there can be multiple definitions or interpretations to who is a peer and what is meant by peer education (Rogers and Shoemaker, 1971, Flanagan and Mahler, 1996).

In relation to HIV/AIDS, peer education is similarly characterised as 'a popular concept that implies an approach, a communication channel, a methodology, a philosophy, and a strategy' which typically involves using members of a given group to effect change among other members of the same group (UNAIDS, 1999, Population Council, 2000). Change refers to knowledge, attitude and behaviour with regard to sexual health practices (United Nations Development Program, 2003, National AIDS Control Organisation, 2007b). HIV prevention among the MSM uses peer education as a bottom up approach to reach out members of their own group (National AIDS Control Organisation, 2007b).

The national HIV prevention programme's focus of MSM targeted intervention is on Hijra, MSW (Male Sex Workers), Koti, Double Decker, and Panthis (masculine males who can also be regular partners of the Kotis). But not on clients or partners of these mentioned groups, that is, mainly although not exclusively on males with multiple

partners but not the partners themselves. The locus of targeted interventions are on the 'cruising sites' or hotspots (places where MSM go to meet potential partners), given that the socio-legal milieu of India condemns same sex behaviours making it difficult for the MSM to access information and services (National AIDS Control Organisation, 2007b). MSM targeted interventions are also sometimes integrated with composite intervention as termed by the national programme (e.g. Female Sex Workers and Truckers project) with other targeted intervention to reach out to the maximum number of males vulnerable to HIV (National AIDS Control Organisation, 2006). However, from the previous discussion we have seen that MSM is an extremely heterogeneous group. Additionally, there is an overlap between heterosexual and homosexual activity (UNAIDS, 2006b). This makes intervention efforts difficult to implement as the group is hard to approach through a singular strategy as in other groups like the female sex workers and the intravenous drug users.

The essential components of targeted interventions are (1) clinical services for Sexually Transmitted Infections, (2) promotion and distribution of condoms, (3) provision of an Enabling Environment, and (4) Behaviour Change Communication, although targeted intervention may differ from place to place. Behaviour Change Communication is a communication strategy aimed to change unsafe behaviour practices. Enabling Environment is ensuring marginalised communities such as MSM are not discriminated and have equal opportunities to access information and services (National AIDS Control Organisation, 2007a, National AIDS Control Organisation, 2008, SOMA, 2008). Community participation is pivotal to targeted intervention as it recognizes that individual sexual behaviour is determined by a wider range of factors than individual level sexual decision making. Especially in marginalised communities, the basis for healthy behaviour change is not just providing individuals with good information but providing a broader context to support such individuals to put their knowledge into practice (Campbell, 2003, National AIDS Control Organisation, 2007b, National AIDS Control Organisation, 2007a). Targeted interventions emphasises the need to promote community contexts (such as networks and alliances with members of same groups) that support individual behaviour change. Therefore there is much emphasis on approaches such as community led peer education whereby targeted interventions selects members of the MSM community as channels for reaching the larger community (National AIDS Control Organisation, 2007b). In this way community mobilisation becomes easier as peers have the same life experience as the higher at risk community and thus are more likely to have a better understanding of the community's intellectual, emotional and socio-cultural viewpoints and support

needs. Peers thus have high acceptance in the community and can function as Agents of Change and be accepted role models (National AIDS Control Organisation, 2007a, National AIDS Control Organisation, 2007b, SOMA, 2008).

HIV/AIDS behaviour change refers to knowledge, attitude and behaviour with regard to sexual health practices. Behaviours are often determined by the socio-economic and political injustices in which people live. Thus, risk is influenced by interpersonal aspects of sexual behaviours and social structures, as well as factors such as lack of information, skills and power, gender inequalities, poverty and unemployment, negative peer influences, substance abuse and lack of services. Raising awareness through information provision itself is thus not effective, especially in the marginalised communities. So the focus of prevention strategies looked more and more into collective action approaches to promote individual health enhancing behaviours by developing community contexts which support them. This was based on the assumption that people are most likely to change their behaviours through collective action, thus shifting the locus of behaviour change from individual to the peer group, acknowledging that sexuality is shaped and constrained by collectively negotiated peer identities rather than just individual level information, motivation and behavioural skills. Thus, individuals' risk taking behaviours can be motivated towards health seeking behaviours by community or peer support. There are also evidences that tapping social networks increases adoption of behaviour change (Campbell, 2003).

In India, with nearly twenty years of programme experience, the National AIDS Control Programme III emphasises putting prevention responsibility on those who themselves are at risk and prioritise focus on community led or community owned programming i.e. Community Based Organisation rather than services provided by Non Governmental Organisations. Previous programme experience in India has proved that community based interventions are more effective in scaling up HIV prevention. Peer education has thus been developed as an approach to reach communities at risk with members of the same group to support individuals at risk of HIV/AIDS (UNAIDS, 1999, Population Council, 2000, National AIDS Control Organisation, 2007b, SOMA, 2008). Therefore in Targeted Interventions, peer education is an approach to ensure community participation especially in community led HIV prevention programmes to reach out to the marginalised vulnerable populations higher at risk (National AIDS Control Organisation, 2007b).

Targeted Interventions describes peer education as an approach to inform the ‘hard to reach’ community with members of the same community about safer sex behaviours, and to facilitate learning from sharing experiences with ‘others like us’, however, the precise definition of peer education varies with the aim and methods of respective intervention (National AIDS Control Organisation, 2007b, National AIDS Control Organisation, 2007a, SOMA, 2008).

Other areas where peer education is used are young people and sexual health, drug and alcohol use, and smoking cessation. These areas also classify peer education as an approach, a communication channel to train and support members of the same group as well as change individuals’ knowledge, attitude, beliefs and behaviours, referring to a horizontal approach as an alternative to the ‘expert’ status of professionals (Backett-Milburn, 1995, Shiner, 1999, Backett-Milburn and Wilson, 2000, Goren and Wright, 2006). Nevertheless, a clear definition of peer education has remained elusive which has often led to an unclear understanding of what it involves and the role of peer educators. It is also unclear what the term ‘peer’ describes, and learning from sharing, in practice, is not a simple process (Shiner, 1999, National Centre for Education and Training on Addiction, 2003).

In summary, peer education is more of an umbrella term based on a number of approaches, which are either effective or ineffective. There is little knowledge about what does work and what does not. This gap has led to little knowledge about what works and what, therefore, are the successful criteria for peer education. The following section will explore the theoretical approaches to peer education with an endeavour to relate its core elements to the existing body of knowledge in the area.

2.5 Theoretical Framework of Peer Education

Peer education engages members of a target community such as sex workers, injecting drug users or young people and trains them in health-related information and communication skills, to promote healthy behaviour such as safer sex to their peers (Cornish and Campbell, 2009). The key advantage of peer education is the credibility of those involved in the process. Peer Educators usually are ‘liked and trusted peers’ of the community who have greater potential to motivate behaviour change (National Centre for Education and Training on Addiction, 2003, Campbell, 2004, Family Health International, 2008b). Peer Educators are effective communicators as they have inside knowledge of the target group and can use the correct language/terminology or gesture while talking about issues of sexuality and HIV/AIDS (UNAIDS, 1999).

Instances from drug users' programmes in Cairo's streets showed that ex drug addicts as Peer Educators gain the community's trust. They can empathise behaviour change as they know the tricks, the language and at the same time can share the stigma as well as the shared hopes which help communicate self worth (Kharrat, 2008). Evidence of influencing beliefs and behaviours through peer education has also been seen among prison inmates (Bryan et al., 2006). This is why peer education programmes endeavour to recruit as Peer Educators those who are representatives of the group, as they usually serve to gain respect in playing their leadership roles (Campbell, 2003). Other advantages of peer education are that it is a cost effective strategy as well as being classified as a strategy which is empowering and beneficial for those involved (National Centre for Education and Training on Addiction, 2003, Family Health International, 2008b). Peer Educators tend to be self motivated in instructing their peers which in turn empowers these educators as they are actively educating and informing others, thus developing conflict resolution skills, acceptance and respect for diversity, increased self esteem, increased knowledge and awareness of health related issues, tolerance, and presentation and leadership skills (National Centre for Education and Training on Addiction, 2003, Goren and Wright, 2006).

Peer education as an education related project is flexible and thus can be easily set in different environments especially reaching 'hard to reach' populations who are not otherwise accessible, identifiable and do not easily disclose sensitive information (AIDSCAP, 1996, National Centre for Education and Training on Addiction, 2003). This can be evidenced in the Indian socio-cultural milieu where the MSM are often prone to violence, suffer from low self esteem and confidence or even suppress their homosexual identities (SAATHII, 2008).

There is no accepted best practice to peer education and the techniques vary from project to project depending on the intended outcomes (e.g. passing information or behaviour change or skill building) and the target groups (e.g. groups such as MSM or youth or drug users who are targeted for their particular health risk behaviours). The rationale for peer education initiatives is also always not clear. There is little evidence on a specific theoretical framework for peer education and the methods applied to peer education vary considerably (Turner and Shepherd, 1999). Turner and Shepherd (1999) identified ten frequently used justifications for adopting peer education. This is the starting point for identifying applicable theories to peer education and why they are relevant. Given that there are multiple reasons why peer education is adopted, there

are multiple theories that apply to these claims. The claims as compiled by Turner and Shepherd (1999) are:

- (1) It is more *cost-effective* than other methods (Jones, 1992; HEA, 1993; Peers et al., 1993).
- (2) Peers are a *credible* source of information (Perry, 1989; Woodcock et al., 1992; Clements and Buczkiewicz, 1993; Jarvis 1993).
- (3) Peer education is *empowering* for those involved (HEA, 1993).
- (4) It utilizes an *already established* means of sharing information and advice (Finn, 1991; Clements and Buczkiewicz, 1993; Jarvis, 1993).
- (5) Peers are more *successful* than professionals in passing on information because people identify with their peers (Clements and Buczkiewicz, 1993; Peers et al., 1993).
- (6) Peer educators act as *positive role models* (Perry and Sieving, 1993; Clements and Buczkiewicz, 1993).
- (7) Peer education is *beneficial* to those involved in providing it (Klepp et al., 1986; Ford and Inman, 1992; Hamilton, 1992; HEA, 1993; Phelps et al., 1994).
- (8) Education presented by peers may be *acceptable* when other education is not (HEA, 1993).
- (9) Peer education can be used to educate those who are *hard to reach* through conventional methods (King, 1993; Rhodes, 1994).
- (10) Peers can *reinforce* learning through ongoing contact (Jay et al., 1984; Kelly et al., 1991).

FIGURE 2.1 RATIONALE FOR PEER EDUCATION INITIATIVES (TURNER AND SHEPHERD, 1999)

Lacking evidence on a direct theoretical framework, as stated earlier, peer education has been described as a ‘method in search of a theory’ (Turner and Shepherd, 1999), that is, there is no theory of peer education but a number of theories which support claims about what peer education is good at. For example, one such claim as stated in Figure 2.1 states that peers are credible source of information. Bandura’s **Social Learning Theory** (Bandura, 1977b) indicates that people learn better when there is a role model and people can imitate the desirable behaviours. Thus peers being positive role models, one is more likely to change behaviour through imitating their peers. This is how the theories support the claims made about peer education. A number of theories contribute towards substantiating these claims stated in Figure 2.1 and in the following section these theories will be described with reference to their contribution towards peer education. Most of the theories are based on social psychology in an urge to understand why and how do people adapt new behaviours (Y-Peer, 2003). Since the

emergence of HIV/AIDS, theories based on the social psychology and models of behaviour were believed to be effective for guiding communication approaches to HIV prevention and care. Some scholars later questioned the global relevance of these models and took into account regional contexts in introducing theories (Airhihenbuwa and Obregon, 2000). Figure 2.2 shows the different theories that influences peer education particularly in relation to HIV/AIDS prevention projects.



FIGURE 2.2 THEORIES INFLUENCING PEER EDUCATION

The first theory used to explain and support peer education and as mentioned earlier was Bandura's **Social Learning Theory** (Bandura, 1977b). This theory describes that modelling is an important component of the learning process. This means learners observe behaviour and adopt it, that is, learning happens in a social context influencing individual behaviour through observation, imitation and modelling. Bandura further explains that individuals need an opportunity to practice modelled

behaviour and need positive reinforcement for a behaviour to be adopted. It also assumes that factors influencing the likelihood of behaviour change include characteristics of the model and perceived nature and severity of the consequences of behaviour. The important elements of this theory are the credibility of the role model and reinforcement of the learned behaviour (Bandura, 1977b). This supports the claims mentioned above which states that peers are credible and positive role models and can reinforce learning by ongoing support. The process of successfully applying socially learned behaviour can be considered to be empowering. The concept of role modelling is central to the Social Learning Theory. Research states that peers need to be positive role models and provide socially supporting information and not just facts (Klepp et al., 1986). Nonetheless, the practicality of observing a modelled behaviour especially in sexual health scenarios is not addressed by this theory neither can they confirm if the role models themselves practice the behaviours they are supposed to be modelling (Turner and Shepherd, 1999). McKeganey and Barnard (1992b) found that ex-drug users who were being selected as Peer Educators went back to their old behaviours (McKeganey and Barnard, 1992a). There is no evidence that peer educators will always maintain their modelled behaviour or that they will always be positive role models. Thus the modelling effects of peer education are not well demonstrated (Peers et al., 1993).

Other claims that Social Learning Theory can be applied to is that peers are credible and can reinforce socially learned behaviour. While the concept of reinforcement is borrowed from Behaviourism (Skinner, 1985), Bandura states that one needs to have a high status in the peer group in order to be considered as credible. Most projects fail to specifically consider the status of the Peer Educators. Researches showed that those who were successful Peer Educators were popular opinion leaders within their communities (Wiist and Snider, 1991, Kelly et al., 1992, Grossberg et al., 1993). In as much as reinforcement of behaviour is applicable, it can work in multiple ways such as by influencing others and research has shown that an ongoing contact has a greater effect on influencing behaviours than a one off contact (Turner and Shepherd, 1999). Backett-Milburn (1995), (Turner and Shepherd, 1999) and Turner and Shepherd (1999) show that ongoing contact with target groups is essential but might not be possible in practice (Backett-Milburn, 1995, Turner and Shepherd, 1999, UNAIDS, 1999, Population Council, 2000, National Centre for Education and Training on Addiction, 2003, Goren and Wright, 2006). Most HIV prevention projects find it difficult to provide ongoing contact (Tudiver et al., 1992, Phelps et al., 1994) (for example, due to

high attrition rates of peer educators) making it a challenge to provide opportunities to model desired behaviour, enable behaviour change and reinforce learning.

Self efficacy or an individual's confidence in performing a behaviour is also a product of Social Learning Theory (Bandura, 1977a). Social Learning Theory states that perceived self efficacy is a predictor for behaviour change, that is, a person is more likely to practice a behaviour if they are confident they can do it. Therefore, a need for a high level of self efficacy among Peer Educators is important for them to be effective or perform their role as a Peer Educators (Valdiserri et al., 1989, Turner and Shepherd, 1999). Peers et al. (1993) describe that being in the process of peer education helps Peer Educators develop skills and become confident Peer Educators as shown in Figure 2.1 which describes peer education as empowering for those involved. Nonetheless, empowerment is difficult to evaluate (Jay et al., 1984). It can be argued that while peer education programmes can provide people with skills it is not concurrent to them being empowered. However despite this ambiguity, Campbell and MacPhail (2002) on the other hand shows how social identity, empowerment, critical consciousness and social capital provide a starting point for theorising the processes of peer education for promoting safer sex behaviours. Social capital in this context refers to an environment whereby trust, reciprocal help and support, positive community identity as well as the community's involvement in local organisations and networks contribute to an improvement in health behaviour (Tawil et al., 1995, Baum, 1999, Blaxter and Hughes, 2000, Campbell, 2000).

There is an established argument that disempowered or marginalised people lack the control over their lives due to the difficult and often compromising situation of their lives and are therefore less likely to engage in health enhancing behaviours (Wallerstein, 1992, Freire, 1993, Bandura, 2002). Empowerment plays an important role in shaping health enhancing behaviours. There is a huge body of research on the concepts of empowerment where some emphasize it as mainly psychological, that is, gaining assertiveness and confidence and therefore becoming empowered (Campbell and MacPhail, 2002) but others argue that an individualistic approach to psychological empowerment cannot work without political and economic empowerment (Tawil et al., 1995) that is assertiveness can only work if the political, social and economic environment makes it feasible. For example, a Peer Educator can be confident enough to do condom promotion but if he does not have a political milieu (e.g. criminalisation of certain sexual activities) which enables talking about it or if there is no access to condom or they are too expensive, it is not going to work. Freire conceptualises

empowerment in a broader perspective as mentioned later in this section. Most health promotion models use self-empowerment approaches to peer education and in practice, empowerment is one of the most used strategy for peer education to support peer educators themselves and others (Campbell, 2003). While they may work in some cases to motivate individuals to counter adversities such as peer pressure in relation to young people and smoking (Shiner, 1999), in relation to sexual health trainings, assertiveness and social skills alone are not always the key to successful behaviour change. In addition, it can be argued that society is not a simplistic division of the powerful and the powerless; also people may not perceive themselves as powerless. Additionally, evaluation of peer led approaches to drug prevention in the UK showed that project participants from one of the project revealed that they were not comfortable with the empowerment focus of the project. These Peer Educators preferred 'knowledge' training to 'skill-building' training (Shiner, 1999).

In his **Theory of Participation** (Freire, 1970, UNAIDS, 1999, Population Council, 2000). Freire argues that empowerment results from the full participation of the people affected, by a given problem or condition, by dialogue whereby the affected can collectively plan and implement a response, that is, develop critical consciousness. By critical consciousness he refers to the development of the understanding of the situation of disadvantage or disempowerment by the have-nots. This understanding then helps the disadvantaged to develop a sense of personal and collective confidence and actively work towards challenging the processes of oppression. For example, from a Freirian perspective, successful peer education programme might provide opportunities to the MSM to discuss (that is enter into a dialogue) how the discrimination against the MSM increases their risk of poor sexual health. This understanding would thus be the starting point from which the MSM can collectively work together to plan and implement a response to reduce discrimination and improve their sexual health. According to Freire, the development of critical consciousness involves moving through multiple stages from intransitive thought or being naive about the social conditions to developing an insight or being critical about it. This transition (happening through a series of stages) from being naive to developing critical consciousness involves an "active dialogical educational programme" (Freire, 1993) where learners develop critical analysis and generate scenarios of alternative ways of being. Freire though warns of the difficulties in developing critical consciousness, especially when participants are subject to exploitation or oppression-where this may lead to adapted consciousness. When individuals adapt to their

conditions develop an authoritarian/a-critical mindset and lack the ability to think of alternatives to existing social situations, nor challenge them.

In this context Campbell and MacPhail (2002) highlight how Peer Educators should stimulate the development of belief that norms can be changed, think of alternative scenarios and develop a context within which confidence can collectively be developed. This goes hand in hand with the argument that appropriate social and community contexts enable renegotiation of social identities and development of empowerment and critical consciousness, thus creating a health enabling context. Social capital approach explains how such contexts comprise of trust, reciprocal help and support, positive community identity as well as the community's involvement in local organisations and networks (Tawil et al., 1995, Baum, 1999, Blaxter and Hughes, 2000, Campbell, 2000). Portes (2000) has traced social capital to Durkheim's emphasis on group life and Marx's distinction between class-in-itself (for example, the MSM group) and a mobilised and effective class-for-itself (for example, Gay Pride movement or in the instance of this thesis MANAS Bangla); but in relation to HIV/AIDS prevention programmes Campbell (2003) conceptualises social capital as people's participation in mutually beneficial social networks and working collectively towards achieving a mutually beneficial goal. Putnam et al. (1994) says social capital can be used to facilitate cooperation and mutually supportive relationships in communities. Putnam defined social capital as a factor of both networks and norms. Networks refer to participation in local community groups and norms refer to trust and reciprocity among community members. Campbell and Williams (1999) agree social capital to be useful but locates social inequalities as constraining elements in building social capital.

The **Diffusion of Innovation Theory** as propagated by Rogers (Rogers, 1995, UNAIDS, 1999, Population Council, 2000, Rogers, 2003) was adopted from **Communication of Innovations Theory** by Rogers and Shoemaker (1971). This model is well suited to community level HIV prevention campaigns that typically require the initiation, diffusion, and long term maintenance of behaviour change (Elford et al., 2002). This theory states how people are influenced by innovations or new ideas. Factors influencing adoption of innovations are the nature of social system, the characteristics of the innovation and the characteristics of the Agents of Change. Rogers and Shoemaker argue that there are different stages of adoption, that is, adoption by innovators, then early adopters, early majority, late majority and laggards or those who lag behind. In relation to peer education this theory states that the change

agents or innovators influence opinion leaders or prospective peer educators. Through the stages stated above the change intended by these change agents are adopted by their peers. (It is argued that certain individuals, mainly opinion leaders of a community disseminate information influencing group norms in the community. Thus, they act as Agents of Change (UNAIDS, 1999, Population Council, 2000)). This theory has the potential to also reach out to people not directly touched by an intervention, by having people from within the intervention advising others (Williamson et al., 2001). Nonetheless, this theory does not encompass the time taken for new ideas to be passed on and adopted and it assumes that Peer Educators are opinion leaders within the peers and ignores the fact that if Peer Educators are not opinion leaders, a lot of planning and cost can be required to set the programme up. Success of this model has been evidenced in peer education programmes in the small towns of the United States. Behaviour change initially adopted and endorsed by the opinion leaders to promote HIV risk reduction gradually diffused throughout the population of homosexual men. In contrast, evidences from the big cities of Britain showed that peer educators found it difficult to talk about sex to strangers and feared the outreach approach would be misinterpreted as a 'sexual advance' (Elford et al., 2002).

Whilst the above theories have the most significant influences on peer education, other theories that influence peer education are **Role Theory** (Sarbin and Allen, 1968), **Differential Association Theory** Sutherland and Cressey (1984), **Subculture Theory** Cohen (1956) and Miller (1969), **Theory of Reasoned Action** (Ajzen and Fishbein, 1980) and **Health Belief Model** (Strecher and Rosenstock, 1997). The following section will briefly describe the relevant aspects from these theories and critically consider them.

Role Theory is based on the concepts of roles and expectations (Sarbin and Allen, 1968). The idea is that Peer Educators will adapt to the role expectations of 'tutors' or 'teachers' and in adopting this role develop a deeper understanding and commitment to the peer groups. This theory has little influence to informal education. Most MSM peer education in India takes place in an informal setting and when seen as peers, the Peer Educators are more credible as sources of information. Placing them in the role of a teacher can undermine this principle as they are peers and not teachers.

The **Differential Association Theory** based on the works of (Sutherland and Cressey, 1984) show that behaviours are learned through association with others. Health enhancing behaviours are learned behaviours learnt through association with peers.

This theory can be criticised on the grounds that there is no clear demonstration on how association leads to learning as association does not imply causality. People may associate with those of similar behaviour, that is, if one is using condoms then they may choose to associate with those who use condoms as well and this does not imply that one has learnt the behaviour through association.

Subculture Theory Cohen (1955) and Miller (1958) implies that subcultures can be exploited to change behaviours of people within the subculture as peers from the subculture would be more credible as they will use an already established means of communication and education and will be more acceptable; it would be more difficult to reach people within the subculture through conventional methods. This theory can be criticised on the grounds that whose agenda are best served by such interventions (Backett-Milburn, 1995) and a great deal depend on the strength of association of individuals with such subcultures, that is, how much are the Peer Educators seen as one of them or are they serving the agendas of the intervention/projects.

Other theories include the **Theory of Reasoned Action** based on the works of Ajzen and Fishbein (Ajzen, 1991, Albarracin et al., 2001), **Health Belief Model** based on the works of Strecher and Rosenstock (Strecher and Rosenstock, 1997, UNAIDS, 1999, National Centre for Education and Training on Addiction, 2003, United Nations Development Program, 2003). These theories relate to how individuals change their behaviour based on attitude, context and beliefs. These are areas that peer education influences.

The **Theory of Reasoned Action** states that the intention of a person to adopt a recommended behaviour is determined by the person's attitude toward this behaviour, his or her belief about the consequences of the behaviour, and their subjective and normative (that which is the norm or the standard in one's society or group beliefs) based on what others think he/she should do, and whether important individuals approve or disapprove the behaviour. In the context of peer education a person's attitude is highly influenced by their perception of what their peers do and think and may be highly motivated by the expectations of respected peer educators (Y-Peer, 2003, Y-Peer, 2011).

The **Health Belief Model** was developed in response to promoting health services. It proposes that behaviour change is based on four main beliefs of perceived threat, negative health outcome and perceptions of recommended health action. In the context

of peer education the process of peers talking among themselves and determining a course of action is the key to the success of peer education projects (Y-Peer, 2011).

Drawing from the theoretical influences on peer education given the Indian MSM context, an effective peer educator should:

- Be knowledgeable: The majority of the theories stated above such as Social Learning theory, Diffusion of Innovations theory, Role theory and Differential Association theory require the peer educators to be knowledgeable about the factors influencing health affecting behaviours in order to pass this knowledge and support their peers. For example, with the MSM the peer educators should be knowledgeable about the context in which MSM sexual encounters take place and the importance of using condoms.
- Be a role model: Social Learning theory, Diffusion of Innovation Theory, Differential Association Theory require the peer educators to practice the desired behaviour and practice the opportunity for peers to observe and imitate the desired behaviour.
- Be empowered: Theory of participation, Theory of Reasoned Action and Health Belief model describe how individuals are more likely to practice or change their behaviour if they have confidence or self efficacy in their ability to do so. Peer educators are required to adopt the desired behaviour but also perform their role as peer educators through talking and interacting with clients. Given the sensitivity of the MSM, this can often pose a challenge. Thus the peer educators not only should practice health-enhancing behaviours but should also have the confidence to influence their clients.
- Be empowering: Theory of participation, Theory of Reasoned Action and Health Belief model also apply to peer educators' clients, that is, the peer educators need to inspire or empower their clients to practice or change their behaviours.
- Able to mobilise their community: Theory of Participation highlights the importance of collective understanding and action by the affected. Within this, the Social Capital approach mentions the development of belief that norms can be changed.
- Have the ability to justify and promote their behaviour in discussion with other peers. So have a degree of combined knowledge, confidence and

self efficacy to participate in dialogues with their peers. Social Learning theory, Health belief model and Theory of Reasoned Action support this view.

- An important element of Theory of Participation is that the peer educators are able to promote discussion and understanding among peers in relation to their risk situation and thereby allow empowerment and collective action.
- Similarly Peer Educators have to maintain their status as peers especially in a respected and leadership role. This mainly draws from Social Learning Theory, Role theory and Subculture theory.

In conclusion, the theories have identified the significant influences on peer education and defined what an effective peer educator should be. But it should be noted that although peer education has proliferated to respond to a range of problems especially among sexual health promoters, and is a crucial strategy to reach to otherwise difficult to reach populations, and is relatively inexpensive, in reality, there is little knowledge in relation to understanding the processes and mechanisms of why peer education fails or succeeds (Parkin and McKeganey, 2000, Campbell and Mzaidume, 2001, Family Health International, 2008b). Turner appropriately describes peer education as a “method in search of a theory” as the theories do not address the implicit social and cultural factors intertwined within this approach (Turner and Shepherd, 1999). Thus peer education is surrounded by considerable ambiguity (Shiner, 1999, Walker and Avis, 1999). This definitely leaves a gap in the understanding of the successes and failures of peer education. Also it is important to understand the distinction between “peer development” and “peer delivery” which existing literatures fail to capture (Shiner, 1999). The literature review in the next chapter highlights these gaps and gives a critical overview of the challenges and problems of peer education. In doing so the rationale to adopting an innovative approach to support the MSM peer educators is also described and the arguments are critically supported by available literatures. The next section now introduces mobile game based learning as the second foundational backdrop to this thesis. This is descriptive section and the critical perspective to this is described in the literature review chapter.

2.6 Mobile Game Based Learning

2.6.1 Mobile Learning

There has been a long tradition of using computers in learning (Griffiths, 2002, Good and Robertson, 2004, Burgos et al., 2007). Modern technologies provide us with sophisticated tools for learning and teaching². Mobile technology has been gaining impetus in recent years in the field of learning giving rise to the study of mobile learning. Mobile learning can either be technology driven, such as delivering content on mobile devices (Lonsdale et al., 2004, Gebauer et al., 2005, Mann, 2008) or pedagogy driven, such as collecting data with mobile devices (Schwabe and Goth, 2005, Mann, 2008) although the two may at times overlap. Mobile learning can be defined as ‘Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies.’ (O'Malley et al., 2003). In other words, Mobile Learning is that which arises in the course of person-to-person mobile communication or could also involve activity in person to computer interaction. Mobile Learning decreases the limitation of location through the mobility of general portable devices and has been used in both formal and informal learning settings especially in the fields of health and education (Gebauer et al., 2005, Schwabe and Goth, 2005).

Mobile learning environments can provide a multitude of managing, negotiation, monitoring and maintenance processes that run in parallel. Therefore learners can learn by collaboration, as for example, by doing tasks and then correcting misconceptions from previous learning activities. The mode of communication in Mobile Learning can be instant delivery of e-mail or SMS, synchronous, spontaneous, flexible and 24/7. There is hardly any geographic boundary or travel time consumed by the mobile technology since wireless connectivity ensures rich communication although the bandwidth and the type of device may play a role. Other advantages of Mobile Learning may include one-to-one interactions, personalised learning environment, less paperwork and printing, lower cost and opportunity for hands on experience on real-life representation through constructed simulated environments (Zurita and Nussbaum, 2007). Mobile Learning offers an opportunity to apply knowledge gained in a virtual environment to real experiences although there can be

² Mg-bl, 2011, Mobile Game based Learning SIG, [online] available at <URL: <http://www.ve-forum.org/default.asp?P=438>

technical, social and cognitive difficulties such as individual's capacity to access, use and comprehend Mobile Learning.

These technologies also provide us with revolutionary tools for learning and teaching such as mobile learning games. Research (Malone, 1981, Griffiths, 2002) shows that games applications can effectively engage learners in learning. With the continuing expansion and growing affordability (cost, availability etc.) of mobile technologies, and with development costs lower for mobile games than for games on 'traditional' platforms such as games consoles or desktop computers, mobile learning games are an exciting new growth area (Klopfer, 2008). The use of computer games for learning already has an established tradition outside of mobile technology. The following section briefly outlines this as mobile game based learning is an extension of this tradition.

2.6.2 Game Based Learning

Games and simulations have a long tradition of being used as a learning resource before computers were developed and there is a long tradition for educators to use games and simulations in their teachings (Linderoth et al., 2004). Similarly there has been a long tradition of using computer games in learning (Griffiths, 2002, Salen and Zimmerman, 2003). Game based learning is an opportunity to enhance levels of interactivity to stimulate learners' engagement, combine knowledge from different areas to choose solution or make decision so that learners can test outcomes based on their decisions, get encouraged to contact other learners and discuss subsequent steps (Pivec et al., 2008) thus providing learners opportunity for reflection. (To note that whilst any games on mobile devices are computer games and can be educational as well, mobile learning is a distinct tradition of learning as described before. Mobile learning can be learning using mobile devices or/and taking advantage of mobility). The following briefly describes the characteristic elements of game based learning on computers.

Malone et al. (Malone, 1981, Malone et al., 2005) explain that there is a relationship between game based learning and intrinsic motivation. Malone (1981) stated that the three key features that created an engaging game are challenge, fantasy, and curiosity. According to Prensky (2001), the key characteristics of an engaging game are: rules, goals and objectives, outcomes and feedback, conflict/competition/challenge/opposition, interaction, representation or story. Researchers also argue that a 'flow' is essential to the design of engaging games. Flow refers to the mental state of being

absorbed in a task (Dziorny, 2008). This can include tasks to complete, ability to concentrate on task, task has clear goals, task provides immediate feedback, deep but effortless involvement (losing awareness of worry and frustration of everyday activity), exercising a sense of control over actions, concern for self disappear during flow, but sense of self is stronger after flow activity, sense of duration of time is altered (Dziorny, 2008). But limitations to game based learning can include issues such as lack of reflective learning with flow or competition leading to frustration or reducing self-esteem.

To summarise, computer games emerged as a tool to support learning in the past century. In the nineties, in an effort to recruit and retain science and engineering graduates computer games were introduced as a tool in education (Good and Robertson, 2004). As mentioned earlier there is a huge potential for supporting learning through mobile devices (Guy, 2009).

2.6.3 Mobile Game Based Learning

Learning is an experience which produces a change in someone's knowledge or behaviour. Learning through games gives the added value of intrinsic motivation and valuable skill development in strategic thinking, planning, communication, negotiating skills, group decision-making through reflection. There are a number of theories that underpin learning and learning through games; the following section relates this to mGBL specifically.

A break from traditional teacher mediated learning came with the development of constructivism and situated learning postulated by Piaget, Vygotsky, Barlett and Dewey. Theories of learning shifted focus from teacher centred learning to student centred learning, for example, in informal self-experiential learning. There is still much work needed in combining these two paradigms together. However mobile learning is more and more seen as a method of converging the two.

Kolb and Kolb (2005a) defines learning as a process whereby knowledge is created through transformation of events (Mainenelis et al., 2002). Kolb describes four stages of learning. Concrete Experience is followed by Reflection on the experience which is followed by Abstract Conceptualisation or derivation of general rules describing the experience leading to Active Experimentation or construction of ways of modifying the next occurrence of the experience. This is a continuous process and the time taken to learn depends on the subject to be learnt and the learners preferred mode of

resolving the two dialectics Concrete Experience and Abstract Conceptualisation or Reflection and Active Experimentation (Mainenelis et al., 2002).

Additionally, evidence in classroom setting, show that learning improves significantly when students participate socially, interacting face-to-face in collaborative learning activities with small group members. Dillenbourg et al. (1996) indicate that social interaction between peers is fundamental to achieve successful learning while Wood and O'Malley (1996) add that it is important to focus on the social interaction effects of collaborative activity, not just learning results of participants. Various collaborative learning opportunities have been used to promote learning in formal settings. Use of computers has opened up opportunities for computer supported collaborative learning (Chen et al., 2008). Computer mediated cooperative interactions, face-to-face cooperative learning and paired work team approaches have been used to add new dimensions to disadvantaged adult learners (Katz et al., 2002). The new method aims to open opportunity for collaborative correction of misconception to a group of adult learners who had low self-confidence, social disapproval, situational barriers, negative attitudes toward education and low personal priority (Katz et al., 2002).

Important factors for effective collaborative learning are mutual support, positive independence, face-to-face social interaction, and formation of small groups (Zurita and Nussbaum, 2007). These factors are brought closer together with the help of Computer Supported Collaborative Learning (CSCL). When mobility is added to CSCL it is called M-CSCL. Group members in CSCL are placed in a social interaction context. This has been shown to produce a positive impact on learning, social behaviour and motivation (Zurita and Nussbaum, 2004, Zurita and Nussbaum, 2007).

The last couple of decades evidenced that substantial learning can occur while one is mobile (Louris and Eteokleous, 2005, Sharples et al., 2010). Researchers and educators have taken technology a step forward and introduced mobile technology to support collaborative learning giving increased opportunity for social interactions between learners (Chen et al., 2008). Nussbaum used Wi-Fi enabled Personal Digital Assistants (PDAs) to transform classroom experience in Chile. Students and colleagues worked collaboratively using mobile phones. Research findings show that using multi-choice questions to each student's devices with students required to reach consensus solutions encouraged face-to-face interaction, discussion and problem solving skills among the students (Microsoft Research, 2007, Zurita and Nussbaum, 2007).

Given this background we can see that dialogic learning is essential to ensure learners participation. Further research shows that adults learn best in a flexible and personalised environment and when the subject matter is relevant to the learner's own interests. To further summarise, social interaction between peers is fundamental to learning (Zurita and Nussbaum, 2007).

Research has shown that wirelessly interconnected handhelds open up new opportunities for collaboration in classroom learning by opening opportunities for effective face-to-face collaborative learning, and increasing the possibility for interaction and conversation. Additionally, personalised mobile devices such as mobile phones open up the opportunities for delivering context specific information in an unthreatening environment (which given the unique circumstances of the MSM as discussed earlier is important to note). The personal nature of these technologies means that they are well suited to engaging learners in individualised learning experiences and to giving them increased ownership over their own work. Mobile phones are personal and familiar devices, enabling the MSM peer educators to access individualised, context specific, 'anytime and anywhere' learning, within the socio-legal discriminatory milieu of MSM behaviour in India. Additionally, the ongoing contact will reinforce learning. Having looked into the theories relating to mGBL, the following chapter will look at its uses and practices.

2.7 Conclusion

Given this background it can be seen that mGBL presents an underexplored opportunity to deliver an M4D (Mobile for Development) intervention for MSM peer educators in India. Exploring this area can provide new contributions to knowledge relating to the practical challenge of delivering M4D interventions of this nature, and theoretical considerations – can it be effective and how? These issues will be elaborated further in the next chapter, where relevant mHealth interventions will be critically reviewed.

CHAPTER 3. Literature Review

3.1 Introduction

This chapter extends the background to develop the aims for the thesis. The following sections describe and critically review the literature relating to MSM peer education and mobile game based learning as a mobile technology for health development intervention. The first section focuses on the challenges of being a peer educator, that is, in putting into practice the ideals for peer education and peer educators that were identified earlier. Based on this, a pedagogical strategy is outlined that encompasses theories of adult learning and the rationale for the use of mobile game based learning is detailed. Mobile game based learning and the wider field of mobile technology for health development is critically reviewed and issues within the field of M4D (mobile communication for development) are outlined.

3.2 Challenges in being a Peer Educator, their training and support: Evidence from Research

The theories so far have given an understanding of the essential characteristic, skills and knowledge a peer educator should have, however in practice achieving this is fraught with difficulty (Campbell, 2004). Literature describing the experiences and problems faced by peer educators is scarce, and often comes in the form of recommendations (from literature) rather than accounts from the peer educators themselves and the difficulties experienced by them. Whilst the available materials as described in the background chapter give an overall picture about peer education and the problems of peer educators, there is still a lack of publications with detailed examination of issues faced by the peer educators. Consequently there is a difficulty in pinpointing the problem areas and addressing them.

One of the problems described (in the background chapter) shows that recruiting and retaining peer educators can prove to be difficult in practice (Elford et al., 2002). Evidence shows high rates of attrition among peer educators. An evaluation study of peer education programme among gay men in London showed that out of forty six staff trained, only twenty seven remained with the project (Elford et al., 2001). Another study of a peer education programme for gay and bisexual men in Southampton found recruiting and training peer educators to be problematic. Nine

among twenty peer educators trained dropped out of the project during the training session. Those who dropped out described formality of the initial sessions a reason for their drop out (Shepherd et al., 1997). Reports reveal that within the targeted intervention project the problems of peer education can range from maintaining the capacities of the peer educators to building partnership. Targeted intervention projects have limited budget, therefore it becomes difficult to recruit as much peer educators as required and as peer educators 'come and go' it makes it difficult to constantly keep recruiting new peer educators and train them (Population Council, 2000, SOMA, 2008). Additionally, the floating nature of the target population can make it difficult for the peer educators to provide follow up services (Drishtikon, 2006).

Other challenges in implementing and supporting peer education include no accepted model of good practice (International HIV/AIDS Alliance, 2008b). In essence, peer education is a strategy that should be successfully utilised to cope with shared problems. However in practice, in as much as peer education can reinforce learning of the vulnerable peer community through ongoing support, it is evidenced that they themselves also need ongoing learning support (Population Council, 2000). Reports reveal that the peer educators for MSM can feel exposed in contexts where homophobia and discrimination is widespread (International HIV/AIDS Alliance, 2008a). It is also evidenced that the peer educators' lives are blighted by macro-social environments characterised by poverty, lack of educational opportunities, and unemployment that prevent them from having self-confidence and a sense of personal agency to take control over their own lives (Campbell, 2003). There is also substantial evidence that the peer educators often need psychological and emotional support as they are often exposed to stressful situations (Walker and Avis, 1999, Population Council, 2000).

Peer educators if not well trained can lead to misinformation and unprofessional advice to their peers/clients (Family Health International, 2008b) but becoming a source of information and a point of contact for friends to discuss their problems can also leave peer educators themselves in situations where they have no one to turn to in order to discuss their own difficulties (Harrin, 1997). Evidence shows that peer education interventions often fail to secure multi-agency support. There is need for creating partnership among the peer educators community to share experiences (Walker and Avis, 1999, SOMA, 2008). Moreover, group membership is a complex and dynamic phenomenon that varies between group types and situations (Elford et al., 2002).

In practice peer education can often be a highly didactic process rather than dialogical or ensuring community participation (Evans and Lambert, 2007) and peer educators themselves might have a preference for didactic methods and biomedical framework of learning (Campbell and MacPhail, 2002). In the early years of HIV prevention this has been observed as the general pedagogical approach across India where peer educators were trained in sessions conducted by project supervisors that entailed the trainees mechanically learning a particular narrative, accompanied by a series of flip chart pictures. The peer educators went to great efforts to learn this narrative accurately, correcting each other if any words were missed out or improvised. So when it came to regular practice for peer educators to visit individual brothels, they 'recited' the flip chart to their sex worker peers, distributed condoms and gave demonstrations on their correct use in a similarly didactic style introducing 'new' knowledge. Therefore as the emphasis was on 'correct' biomedical knowledge little of the women's own lay understandings of outreach work were ever incorporated and they educated their fellow sex workers in a wholly decontextualised manner with very little additional discussion or debate (Evans and Lambert, 2007). Similar experiences have been observed by Campbell and MacPhail (2002) and Campbell and Mzaidume (2001) in respective projects in South Africa. A study by the Population Council (2000) shows that the peer educators training needs to focus not only on imparting HIV/AIDS information but on techniques that can be used to engage their audience in problem-solving dialogue about behaviour change and associated socio-economic and psychological barriers.

This highlights the need for peer educators to have a much wider knowledge base than imparting HIV/AIDS information alone. Campbell argues that successful peer education should provide a context in which peers can collectively renegotiate their peer identities as well as feel empowered (Campbell, 2003, Campbell, 2004). Most studies suggest that the peer educators need to enhance self-respect and self autonomy. Sensitisation, critical consciousness and empowerment of peers can be a first step in the mobilisation of collective action with regards to HIV/AIDS problems (Asthana and Oostvogels, 1996, Beekera et al., 1998, Campbell and MacPhail, 2002, Population Council, 2002, Parker and Aggleton, 2003, Laperriere, 2008). Though noted, project experiences show that peer educators focus more on HIV facts and not enough risk behaviour change (Population Council, 2000) and therefore it is likely that peer education in practice often undermines the development of critical thinking power.

Flanagan and Mahler (1996) report that confidence and technical competence are essential attribute for peer educators in AIDS prevention projects (AIDSCAP, 1996). These literatures recommend collective action and developing a broader understanding of knowledge is essential to peer educators training and is left lacking.

Manuals for training peer educators talk about key components in training of peer educators. These include participants understanding of the rationale behind peer education, benefits and barriers; background knowledge about skills-based health education and behaviour change interventions; basic knowledge of the programme's technical content; exploration of personal values; methodologies for skills building; communication and group-work skills (Family Health International, 2008b, National AIDS Control Organisation, 2012). But experiences show that when peer educators go to the community for outreach work they find completely different scenarios and are unable to fully put their training in practice. Some peer educators feel that the nature of training given to them is abstract. There is often inconsistency between project design and external environment in which the peer educators work in, as well as lack of clear aims and objectives of peer education projects (Walker and Avis, 1999, Population Council, 2000).

The majority of the problems faced by the peer educators are resulting from insufficient training and support in delivering the main elements of the peer education strategy as summarised in the key properties of being an effective peer educator such as being knowledgeable, empowered et al. in the previous section. Vygotsky affirms that knowledge is built within a community through social interaction between peers (Vygotskiĭ et al., 1997) but reality show that it is often difficult for peer educators to discuss their experiences and often these experiences are not documented but are just shared in meetings. Consequently, lessons learnt are not passed on to the programmes. In addition often peer educators can find it hard to discuss their experiences (UNAIDS, 1999, Population Council, 2000, Kharrat, 2008, SOMA, 2008). As shown in Section 2.2.1 a high level of social control over male same sex behaviours influence the environment in which MSM peer education takes place.

The review of literature and the background information show the gap between the practice and the everyday experience of the peer educators and the theoretical foundations. The development of knowledge, empowerment, empowering skills, community membership and mobilising skills remain a challenge that has not been adequately met nor best practices established and transferred to practice. It can be seen that, rather than a lack of understanding and clear objectives, there is rather more a

lack of appropriately documented and tested delivery strategies underpinned by the appropriate theories. In light of this, this thesis aims to develop and evaluate such a strategy. To do this, first the key challenges and desired attributes of an effective peer educator are reframed as learning and support needs; then these are examined in parallel with the relevant pedagogical theories for the target group, that is the marginalised MSM peer educators in India.

3.3 Pedagogical Approach to Training Peer Educators

The literature so far has looked into the theoretical framework of peer education and described the essential attributes to being an effective peer educator with some reference to the unique MSM situation. Nonetheless the reality of being a peer educator and the challenges in training and support they receive opens up a world very different from the theoretical idealism. The previous sections have shown the practical challenges to being a peer educator in contrast to the theoretical framework for what an effective peer educator should be. There is a dearth of literature on ‘peerness’ or experiences of the peer educators. The available literature so far shows that the barriers faced by the peer educators are poverty, lack of educational opportunities, unemployment which prone them to low self confidence and sense of personal agency to control their own lives; no accepted model of good practice; no ongoing support although they are often exposed to discrimination and abuse; lack of psychological and emotional support; insufficient training that makes it harder for them to deal with outreach reality (Kerrigan, 1999, Backett-Milburn and Wilson, 2000, Campbell and Mzaidume, 2001, Campbell and MacPhail, 2002, Kelly, 2004). But interestingly the recommendations made by most of the literature closely examining peer education do in fact mirror the main points from the theories, advising how elements of them should be put into practice, to use particular techniques or elements of their application. The theoretical framework states that a peer educators should be knowledgeable, a role model, be empowered, be empowering, have the ability to justify and promote their behaviour in discussion with other peers, be able to mobilise their community, be able to promote discussion and understanding among peers in relation to their risk situation and thereby allow empowerment and collective action and should maintain their status as peers especially in a respected and leadership role. But the challenges in practice include inadequate training to support these needs and shows a need for a more community, collaborative and dialogic approach in the way training or knowledge is imparted and an understanding that the peer groups skills/training of the peer educators needs to be developed in the context of their target group or community.

The literature recommending ways to provide support to the peer educators relate back to the theories. Whilst the approach of peer education is fundamentally based on this the training in practice is more of a top down approach which often falls short of reaching out to the peer educators themselves and their support or learning needs. Thus the problem is not in knowing what the peer educators should be doing but in a lack of knowledge about strategies/tactics about how to successfully achieve what they want to do. In addition there is a dearth of literature on training and support needs of the peer educators and how they can be met (although there is literature on training manuals for peer educators). Thus the starting point for bridging the gap between the theory and practice is to look into the recommendations (that relate back to the theories) in an endeavour to enhance peer educators support and training needs in the context of their peer education work reality.

The core element of this thesis thus is addressing this gap between the theoretical recommendations and the reality of being a peer educator especially in a marginalised MSM context, that is, how to meet the training needs of the marginalised MSM peer educators in a resource constrained setting in order for them to be more effective. The best way in doing this is to apply theory based strategies taking into account the particular Indian MSM context. The following table shows the factors that need to be taken into account for developing strategies to enhance peer educators training and support needs.

In Theory an effective Peer Educators should be (from Section 2.5):
<ul style="list-style-type: none"> i. Be knowledgeable. ii. Be a role model. iii. Be empowered. iv. Be empowering. v. Able to promote behaviours. vi. Able to mobilise community. vii. Able to justify and promote behaviours in discussion with peers. viii. Promote discussion and understanding between peers. ix. Maintain status and leadership role.

In Practice the challenges as stated in Section 3.2 are:

- i. In recruiting and retaining peer educators.
- ii. No accepted model of good practice.
- iii. Unclear project aim and objective or project design different from the external reality.
- iv. No ongoing support while exposed to abuse and discrimination.
- v. Poverty, lack of educational opportunities, unemployment leading to low self-confidence and sense of personal agency to control their own lives.
- vi. Training: often abstract or peer educators unable to apply training to field reality, lack of training which can lead to misinformation, can be didactic and therefore peer educators lack skill to critically analyse and address field reality.
- vii. Group membership can be complex and dynamic process.

Recommendations from literature as stated in Section 3.2 are:

Skills required for the peer educators:

- a. Need wider knowledge base than just imparting HIV/AIDS information, that is, more collaborative and dialogic approach in the way they impart knowledge.
- b. Need to focus on risk behaviour change than HIV/AIDS facts and critical thinking power.
- c. Develop confidence and technical competence as mentioned in (b).
- d. Develop communication and group work skills.
- e. Share experiences and pass on lessons learnt.

Successful peer education programmes:

- a. Need to provide peer educators with context in which they can collectively renegotiate their peer identities and feel empowered.
- b. Enhance self respect and self autonomy.
- c. Steps to mobilisation of collective action with regards to HIV/AIDS problems: sensitisation, critical consciousness and empowerment

The literature has identified the significant gap in the training and support provided to peer educators and what is required to allow them to be effective, based on the underlying theories of peer education. It has been seen that a more community based,

collaborative and dialogic approach is needed, allowing knowledge to be developed in the context of the peer educators' community.

With respect to MSM in India, the reality is characterised by discrimination, poverty and legal obscurity which results in MSM peer educators often hiding their identity and travelling long distances in order to work without being identified in their everyday life. Thus any support has to account for this, being discrete, cost effective and mobile or accessible when mobile.

Looking into community based peer education it is seen that this involves training local people to take control of HIV prevention efforts (Campbell and MacPhail, 2002). Training community-based outreach workers is an important component of AIDS prevention efforts (Wilson and Backett-Milburn, 2000) and there are some basic methodological considerations. Most importantly, learning should be based on experience and observation, or in other words experiential learning and use of interactive methodologies (Family Health International, 2008b). Peer educators need to be familiar with resources that can complement their knowledge of and about peer education. Such resources may range from training guides, textbooks in addition to knowledge of clinics, information sources, pharmacies, and supportive services available in the area (International HIV/AIDS Alliance, 2006).

MSM legislation in India (only legalised by the Delhi High Court) only acknowledges consensual sex between adult males (over eighteen years), therefore any work involving peer educators in India has to take into account the factors affecting the legality. To undertake the fieldwork in India the project is conducted in collaboration with Community Based Organisations in India working with MSM under Targeted Intervention. Targeted Intervention under the national AIDS Control programme under the federal Ministry of Health can also only work with MSM within the parameters of the legislation. This age consideration influences the learning theories applied, particularly the theory of adult learning, and motivation toward learning, which suggests taking a learners experience into account.

Freire refers to his method of teaching adults as 'critical pedagogy' where students question and challenge 'domination' and the beliefs and practices that 'dominate'. Thereby, postulating a theory and practice of helping students achieve critical consciousness or an understanding of the world around them and the factors which may contribute to their oppression (Freire, 1996, Zurita and Nussbaum, 2007). Critical consciousness is an important factor to be considered to develop the peer educators'

confidence. Friere posits that participatory education can constitute socially valuable learning and help individuals to think critically to gain control over their own lives (Freire, 1996, Blackburn, 2000, Jarvis et al., 2003). Illich proposes that participation at every stage of the learning process can constitute socially valuable learning (Illich, 1974). Friere adds that by asserting their needs, the oppressed, such as the marginalised MSM community, can become the subject of their own development. This can be done through a process of conscientisation whereby the oppressed can choose their own course of action by critically thinking about their situation and reflect. The educator's task is thus to engage in dialogue with the 'participants' in a process of 'dialogue' or 'mutual conscientisation' to develop their critical consciousness (Blackburn, 2000).

Much of the above is said in the context of formal learning, with reference to adult learning it has been observed that traditional formal learning is not always suitable for adult learners. In as much, dialogic learning is essential to ensure learners' participation. Knowles (1978), in relation to adult education or andragogy (the adult equivalent of "pedagogy"), points out that adult learners are autonomous and self directed learners. They have accumulated life experiences and knowledge related to their job or personal life (Jarvis et al., 2003). Thus, adult learning should capitalise on the experience of the participants³. Rogers, in his experiential learning theory, adds that learning happens best when the subject matter is relevant to the learners' personal interest and can get easily assimilated when external threats are minimal. Thus it is important to offer the adults a learning environment with greater flexibility and personalisation (Rogers, 2002, Kolb and Kolb, 2005b).

Campbell adds that peer education should also provide peers with confidence, sexual negotiation skills and ownership of health intervention. The combination of these three ideally contributes to a sense of increased self efficacy which can increase the likelihood of the feeling that they are in control of their health. Additionally peer education should instigate people to think critically about the obstacles to behaviour change (Campbell, 2003). Freire's concept of critical consciousness suggests that participatory educational approaches have the greatest chance of succeeding if participants have a sound understanding of the social factors which stand in the way of behaviour change. Empowerment and critical thinking are essential preconditions for peer education programme success.

³ Infed, 2002, The Encyclopaedia of Informal Learning, [online] available at <URL: www.infed.org

In the context of the peer educators, practices and lack of dialogic learning or critical thinking skills as evidenced in the instances from India, and simultaneously taking into account the issues of adult education and experiential learning, it is important, especially for the MSM peer educators, to feel empowered given the social-legal status of same sex behaviours in India. Thus, unless the peer educators themselves become confident about their own skills and knowledge, develop solidarity and critical consciousness they cannot transfer confidence in their community or become successful role models. Thus an important goal for peer education should be to raise awareness and consciousness of the peer educators to think critically; develop their skills to act and help others; use shared experiences in problem solving; build community networking, interactions and collaboration for gaining knowledge, support and solidarity. Acquiring these skills will enable them to become effective Agents of Change.

A pedagogical strategy to support peer educators therefore requires:

- a. Peer educators' training to focus on techniques that can be used to engage their audience in problem solving dialogue about behaviour change and associated socio-economic and psychological barriers.
- b. Sharing of the experiences between the heterogeneous MSM groups, which can be an important stepping stone to support and share their learning and empowering them, raising awareness and consciousness.
- c. Developing mutual support and a sense of belonging to a community with shared goals and issues.

Having looked at peer education, learning theories and adult learning theories, the rationale for mobile game based learning with the SMS based game will be reviewed. The subsequent sections will critically explore mobile game based learning and look into the wider literature surrounding mobile technology for health development.

3.4 mGBL

The background chapter gave a general introduction to mobile game based learning, this chapter reviews mobile game based learning within the context of health development, specifically MSM peer education setting. Whilst the focus of this work is mobile game based learning within a health development setting, the general context of mGBL will first be described through several illustrative examples of

contemporary work then the issues and challenges for mGBL in a health development setting will be discussed in subsequent sections.

The first of the illustrative example of mGBL in practice was described by Schwabe and Goth (2005) who introduced 'MobileGame' a PDA based game that assists in the orientation of first year university students. This game required teams of players to complete tasks based around significant places, people and events at an orientation rally, whilst 'hunting' and evading other groups.

Sánchez et al. (2006) described another PDA based game designed for eighth grade pupils. The game had two parts, first an information gathering stage based on a quiz during a field trip to a zoo, the second part was a simulation type game set in the players' school over a number of weeks. Having studied the animals at the zoo in the quiz stage, the simulation stage of the game asked players to make decisions affecting the evolution of animals to keep their species alive over the evolutionary eras.

Mitchell et al. (2007) describe the development of some model mobile learning games in the Mobile Game Based Learning project. They concentrate on three game styles which were used to support the learning of decision-making in critical situations, such as first aid procedures. The games developed were; (1) 'Ahead of the Game', a quiz game followed by simulation based upon the quiz content. (2). 'MOGABAL' a modular 'box-of-games' approach where players take part in short game sessions with feedback in between; game activities included; quiz, exploration, arcade, simulation, adventure. Finally, (3) 'Get real!' a multiplayer game using SMS, MMS and web pages to allow groups of players to communicate using a range of methods available via the phone.

A mobile learning game called 'Explore!' was outlined by Costabile et al. (2008). This was a game for middle school pupils on a visit to an archaeological park. It was a treasure hunt style game for groups of three to five pupils, simulating a day of a fictional historical character 'Gaius'; players were challenged with mission such as finding a particular location to find work, and in order to complete the mission the players had to explore the site to find clues about the location in question.

Focusing on older players Maniar and Bennett (2007) developed a mobile learning game for international university students to help reduce culture shock when coming to the UK. The game 'C-Shock' provided information like emergency contact numbers and locations of services but also familiarised players with 'culture shock'

situations they might not be familiar or comfortable with, such as drinking alcohol, or people being affectionate to each other in public. The player starts with a score, a 'culture shock' rating, which is affected by choices in the game; reducing when poor choices are made (Maniar and Bennett, 2007).

Again with university students, another mobile learning game was described by (Chang et al., 2009) who used a game with a first year local history students. The game made use of a range of components including Asus EEE PC (a type of laptop), a GPS (Global Positioning System) receiver and RFID (Radio Frequency Identification) tags and game play revolved around completing various tasks, such as researching information and reporting it, or visiting locations and collecting evidence in situ using their equipment.

MaCMoG was a mobile game based on learning Malay culture. The game consisted of the player moving a character around a game world shown on a phone screen. They encountered and had to deal with situations that incorporated learning Malay values such as respecting the elderly, caring for the environment, caring for animals, honesty and responsibility, self-discipline and helping people in need (Shiratuiddin and Zaibon, 2010).

In the United Kingdom, FutureLab⁴ developed a number of mobile phone based games for learning. Newtoon is a game where students manipulate the laws of physics and thereby obtain better understanding of the subject. The players not only play the game but also design their own games and play with their peers (Guy, 2009). BBC have developed a GCSE revision learning material, BBC Bitesize Revision, in the form of mobile phone based games⁵.

Mobile Learning for Health Care Professionals popularly known as HCP (Warwick Medical School, 2008) proposed the use of two technologies, mobile phones and PDAs, in novel contexts involving teaching and learning. Both mobile devices were proposed to be used in a situation that draws upon game-based scenarios to provide training for doctors in the field of emergency paediatric medicine. It was expected that the affordable and widespread nature of those technologies, coupled with an interactive and realistic emergency care environment, should create a more engaging

⁴ futurelab, 2011, futurelab innovation in education, [online] available at <URL: <http://www.futurelab.org.uk/home>

⁵ BBC, 2008, BBC Bitesize Revision, [online] available at <URL: <http://www.bbc.co.uk/schools/gcsebitesize/mobile/#home>

and effective learning experience for participants. The project concept was an extension of 'on-line' courses and complements traditional course delivery, making effective use of "down time" for participants who are also working (Warwick Medical School, 2008). This appeared to be part of the training programme. There is little published on the project methodology and evaluation.

Given this background it can be seen that in practice mobile game based learning is used mostly for experiential learning such as cultural or subject (academic) familiarisation using simulation and decision-making tasks. Other major uses include using quizzes for assessment and revisions and mobile data collection and reporting.

Having already introduced the background of MSM peer education where the need for experiential learning and learning on the move was highlighted, it can be seen that the existing use of mGBL aligns with the issues identified within MSM peer education. Nonetheless, these studies were made in the developed country context and mGBL is still an emerging area of practice. In view of this the next sections look into the practices of mGBL in the developing country context and in absence of significant material to consider, the exploration will focus on mobile technology especially for health development. The focus on mobile health interventions provides the background for this study as in concentrating on providing training and support for peer educators it is in relation to them becoming more effective peer educators and becoming more effective in their role of providing care and support.

3.5 mHealth Research in the Developing World

This section gives a critical review of literature in mHealth research in the developing world. The current trends, strength and weaknesses and lessons learnt especially in the developing countries are outlined. This will form the knowledge base for current research in health and technology especially in developing countries and will allow discussion in a later chapter about the implications and contributions for this study. This section also takes into consideration the more general field of mobile communications for development (M4D) that mHealth projects in the developing world fall within.

Mobile communications for development (M4D) is a relatively new field, with the first international conference on M4D taking place in 2008, and then bi-annually following that. Donner (2010) noted that "M4D" did not return conclusive results on mobile for development in internet search results as late as mid-2010. The uptake of

mobile communication in resource constrained settings and in poorer nations has been rapid, with research in the field lagging behind the practices, leaving theory based approaches, evaluation of best practices and evidence based approaches yet to be formally established (Donner, 2010).

Within the context of M4D mobile technology, especially mobile phones, have contributed to solutions to some of the world's greatest health challenges in the past decade. Evidence can be seen in the United Nations Foundation and Vodafone Foundation Technology Partnership use of mobile technology programmes to connect families separated by disaster, help emergency relief workers respond more quickly and empower health workers operating in rural areas (United Nations Foundations, 2008). It can be used to support remote health workers and to reach people anytime or anywhere (Mechael, 2009). The Centre for disease Control and Prevention and Kenyan Ministry of Health are working to design automated systems that use SMS for surveillance, outbreak updates and alerts, training, and delivering health messages to the public (Centre for Disease Control and Prevention, 2008b). The widespread access to this ubiquitous communication is changing the ways societies and communities interact and organise themselves. Mobile phones are cheaper, and more accessible than desktop computers especially in resource constrained settings where computer and internet access can be expensive (Centre for Disease Control and Prevention, 2008a). More sophisticated 3G/4G networks, mobile broadband and smart phones suggest that opportunities to exploit their potential will continue to emerge (Mechael, 2009).

mHealth in the developing world has received an increasing research attention in the recent past. Research supporting health/health care workers in the developing countries have mostly developed mobile applications (apps), SMS and/with IVR (interactive voice responses) for information delivery and access, data collection and reporting, surveillance study, health education.

Anantraman et al. (2002) describe a PDA based tool to access information and medical records, developed trialled for prenatal and child healthcare in northern India. Medhi et al. (2012) also evaluated CommCare, a mobile phone based application to support the data collection and reporting for Community Nutrition Educators, also in India. (There are organisations doing mHealth work such as Dimagi, mDhil, ICTPH or IKP Centre for Technologies in Public Health). Similarly Chen et al. (2009) describe CommScape, a phone based application for data collection and access, Chib (2010) provides an application for data reporting and communication for midwives to other

health professionals. Ramachandran et al. (2010) introduces multimedia content delivered via phones to support ASHAs (community midwives) to help them deliver more persuasive messages to their clients.

South African researchers have developed an innovative application based on mobile phone technology to improve adherence to HIV and Tuberculosis treatments. The 'Cell Life' project developed software and data management systems to help clinic workers monitor patients' HIV treatment and symptoms by recording data on mobile phones which gets relayed to a central database (Infodev, 2006, United Nations Foundation and Vodafone Group Foundation, 2008).

Mobile phones are widely in use around the world and text messaging has been variously used. Reports from the United Kingdom show that the number of SMS messages grew from 159 million to 1.42 billion in only a span of one year. In 2003 in the Philippines the average user sent 2300 messages making it the world's most avid texting nation. SMS texting is a rapidly growing phenomenon in most countries, and has received significant attention for mHealth and M4D interventions. SMS provides low bandwidth digital messaging between users (Kaplan, 2006). The SMS was developed as part of the Global System for Mobile communications or GSM and it allows network-connected devices to exchange messages with a maximum length of 160 characters. The length limit is caused by the way SMS is transmitted. SMS was commercially introduced in 1992 as a replacement to the pager and by 2001 an estimated 102.9 billion SMS were exchanged worldwide (Ultralab, 2002, Le Bodic, 2005). Although there is much to learn about SMS and mGBL, Stone et al. (2002) show that SMS have quick response time for interactive activities for learning (Ultralab, 2002, Markett et al., 2006). Naismith (2007) explored uses of text messaging by an educational institution for administrative communication with students. The students perceived the process as timely, appropriate and personalised. It has been observed that text messaging may promote involvement in a community of learners, encourage development of independent learners and reduce feelings of isolation by promoting community.

Frontline SMS, a SMS management application, has been used in Uganda to provide community based education and services (Chang et al., 2011). Freedom Fone is an SMS/IVR application developed in Zimbabwe combining the Asterisk⁶ and Frontline

⁶ Asterisk Voice over Internet Protocol Communications Server [online] available at <URL: <http://www.asterisk.org/>

SMS⁷ communication software applications to deliver SMS, voice information and media content for accessing information about health etc. but is built to deliver any kind of information content to a mobile device. It is targeted to the general public but especially suited for people with limited literacy. Users can request a call-back with information delivered by voice through an SMS, or can access voice information through a menu system. It works with all phones with voice and SMS as the lowest-common denominator and does not require any specific arrangements with the telephone services operator (Donner et al., 2008). The New Communication Technologies and Citizen-led Governance in Africa project is an ongoing study which is investigating how and to what extent SMS change the ways in which citizens participate in public and political life, access and shape flows of information on social issues, and enhance access to and the quality of public goods (University of Cambridge, 2011).

mHealth⁸ studies demonstrated that SMS alerts have a measurable impact on and a greater ability to influence behaviour than radio and television campaigns. SMS alerts provide the further advantage of being relatively unobtrusive, offering recipients confidentiality in environments where disease, especially HIV/AIDS, is often taboo. In the developing world, SMS alerts have proven particularly effective in targeting hard-to-reach populations and rural areas where the absence of clinics, lack of healthcare workers, and limited access to health-related information often prevent people from making informed decisions about their health. SMS stands out as having several advantages such as cost-effectiveness, scalability, convenience, broad reach, and widespread popularity in the developing world (Consulting, 2009). Mobile phones have served as a source for collecting and providing data, connecting health workers, and supplying just-in time sexual health information through SMS info lines⁹.

As opposed to one way sending of texts to targeted people, SMS message campaigns can be set up as interactive tools used for health-related education and communication. For example, a citizen may sign up to take a survey delivered via SMS message quizzing them on their knowledge about HIV/AIDS and the location of the nearest testing centre. Their responses can be used to tailor the services and/or information delivered back to them. This interactive model has been deployed in India, South

⁷ FrontLine SMS communications hub [online] available at <URL : <http://www.frontlinesms.com>

⁸ mHealth [online] available at <URL : http://www.mhealthinfo.org/projects_table

⁹ Mobileactive, 2008, Health, [Online] available at <URL: <http://mobileactive.org/wiki/Health>

Africa, and Uganda to promote AIDS education and testing, provide information about other communicable diseases, maternal health and educate youth about reproductive health (Consulting, 2009, Danis et al., 2010).

Zamanawe, a collaboration across 4 countries in sub-Saharan Africa is a project to train peer educators. It uses an internet platform such as online forum¹⁰ to support collaboration and knowledge sharing among peer educators to ameliorate institutional collaboration, networking and knowledge exchange across university HIV/AIDS peer education programme. This was an attempt to build collaboration and solidarity for peer educators who felt isolated when addressing challenges and had limited contact with peers outside their university. Information on the training practices and methodologies are sparse and it is evident that mGBL is not part of their training programme but it highlights the common objectives of peer educators training (University of Pretoria, 2007, University of the Western Cape HIV & AIDS Programme, 2008). Y-peer, a UNFPA or United Nations Population Fund funded youth peer education programme, utilizes information technology to produce electronic resources for peer educators benefitting 370 peer educators from 27 countries (United Nations Population Fund, 2008). In India UNDP (United Nations Development Programme) fund peer education projects to train and disperse HIV/AIDS messages using computers among a mobile, career seeking youth group (World Volunteer Web, 2004). Emerging technologies thus are evidenced as an emerging field in training learners in informal setting as well as peer educators for HIV prevention (Zurita and Nussbaum, 2007, Clough et al., 2008).

Having described the key trends and contemporary research relating to mHealth in the developing world the final part of this section critically reviews the published work, and highlights the ongoing debates and challenges in the field.

Fundamentally there has been a debate about what constitutes ‘development’ within M4D, Donner (2008) takes a wider look, and explains development as “improvements to social, human and economic conditions”, and M4D projects are explained to those which intentionally set about to create an improvement, rather than as an unintended side effect. Dearden et al. (2010) summarises four main areas of contribution, relating more to the outputs of M4D projects:

¹⁰ Zamanawe Peer Educators’ Forum (2008), [online] available at < URL: <http://zamanawe.blogspot.com/>

- Research to generate a new understanding of how people are using existing mobile technologies
- Research to create toolkits to enable innovative ways of constructing mobile systems
- Devising innovative methods for designing mobile systems
- The creation of an innovative artefact or system, that demonstrates a new way of interacting using mobiles

Duncombe and Boateng (2009) describes the field as ‘nascent’, and mentions that most projects have concentrated on assessing output and outcome rather than a broader developmental impact, and notes that assessing impact is a much more complex task than measuring direct outcomes. Not only is it challenging to identify wider changes and in practices or opportunities, but also in attributing them to a single M4D intervention rather than the “myriad of other possible intervening and exogenous factors” (i.e. establishing causality from a single event to a particular effect).

Weber (2009) comments on ICT4D (Information and Communications Technology for Development) in general (of which M4D is an expanding subset) and identifies a lack of good quality work which obstructs effective implementation of ICT4D initiatives, a comment which is echoed by Duncombe and Boateng (2009). Duncombe and Boateng (2009) expands on this, having reviewed 17 M4D projects, less than 50% of them referred to theory or conceptual frameworks. Furthermore, of 43 articles reviewed, 17 were peer-reviewed, 23 were not reviewed, and 24 of the studies reported were purely descriptive, containing no approach to methodology given (and just six of these were peer reviewed). Non-peer-reviewed articles present difficulties as often these are in the form of reports to funders and other monitoring bodies, or were themselves funded by the mobile phone industry (Qiang et al., 2011) which makes it difficult to obtain a critical perspective.

There is a dual focus of M4D projects, in that (a) they seek to address a certain developmental goal in their target domain and (b) they endeavour to gather credible evidence of impact to contribute to research. Duncombe and Boateng (2009) highlights tension between the intended audiences of the research; practitioners or academics; and goals *proving* or *improving* impact, both of which may not fit within one single methodological approach. Adding to this, issues with evaluation and reporting are identified, particularly where projects are in early pilot and proof of

concept stages there is a lack of feedback from participants, particularly reporting of participatory action research methods.

Two areas of research were identified by Duncombe and Boateng (2009): first understanding new models of innovation; tailoring hardware, software, infrastructure, etc. to the needs of low income users; innovation in applications to meet identified needs; organisational/market/business model innovation; socio-cultural innovation (adapting to local practices). The second area of research is in understanding M4D as a new tool for production rather than consumption, that is, using mobiles to make money in new ways, such as producing local content.

Curioso and Mechael (2010) explain that mHealth projects are one of the more promising investments in the developing countries. However, much of the hardware and infrastructure comes from developed countries “of the so-called global North”. From the developing countries, “the global South”, are coming applications that enable health workers to collect and organize data, access diagnostic and treatment support, and promote healthy behaviour. Most of these are still in pilots or demonstration phases, but their use is accelerating (Curioso and Mechael, 2010).

Fourteen papers were published relating to mHealth in the 2012 M4D conference (Kumar and Svensson, 2012), the focus of all the projects described was primarily information delivery and reporting; delivering health information messages directly to individuals (Hoefman et al., 2012) information delivery through CHWs (Pundir et al., 2012b, Treatman and Lesh, 2012) and in accessing, gathering and reporting data (Haque et al., 2012), for example to ensure medication compliance (Batra et al., 2012, Jha et al., 2012) or provide decision support (Chaudhury et al., 2012, Khurana et al., 2012). Khanna et al. (2012) provides a notable exception in evaluating several mobile phone games to promote health awareness (HIV and tuberculosis) among Indian youths, though it still primarily in the area of health information delivery.

Conclusions of these papers overwhelmingly support increased evaluation and use of mobile communications for health services in developing countries, particularly for purposes mentioned above (Batra et al., 2012, Garai, 2012, Littman-Quinn et al., 2012, Pundir et al., 2012a, Pundir et al., 2012b, Tegegne and Van Der Weide, 2012, Treatman and Lesh, 2012). There is scarce evidence of critical evaluation of the technology and projects though authors have challenged the prevailing approaches; Han (2012) particularly effectively challenges the “optimistic narrative of mobiles for development” and Duncombe and Boateng (2009) conclude “research assessing needs

or requirements at the micro level of individual users is rare”. Reports of challenges found, experiences and accounts of studies as reported by participants are difficult to find, Lim et al. (2008) reviews several SMS based interventions for HIV/sexual health, and note that very few applications had been evaluated. Treatman and Lesh (2012) highlight issues with delivering multimedia through mobile handsets; Pundir et al. (2012b) mention issues with lack of service, and hardware suitability and Hoefman et al. (2012) note limitations to their study due to the validity of the data.

This provides an impression of the present state of M4D and mHealth research and projects within a development context, showing strong technical developments and opportunities but lacking in significant diversity and critical analysis of interventions developed.

3.5.1 Selected M4D projects using Mobile Games

Mobile Game Based Learning and M4D itself is an emerging field with much of the work taking place in pilot initiatives and reports being published in ‘grey literature’ such as magazine articles, and project reports. This section describes a number of M4D projects that have incorporated mobile games as key elements, game based learning on mobile devices in developing countries has been used for improving literacy, understanding village games and disseminating health information as described below.

Kam et al. (2008) and Kam et al. (2009) describe exploratory studies to develop mobile phone based games for rural children in India. The games are developed to improve language literacy and were tested within three groups of participants in different settings. The games themselves were interactive mobile phone based games, incorporating learning objectives into the gameplay and the games themselves were adapted from a study of games typically played in the rural villages. In China Tian et al. (2010) also targeted literacy in children, designing two mobile phone based games to be played in groups to learn Chinese language characters. Two games were designed and evaluated, working on a cooperative model with a number of children sharing one high-powered mobile phone. Kumar et al. (2012) describe the development and evaluation of a language learning game using speech recognition, once more this project targeted children in India.

Khanna et al. (2012) review several educational games developed by ZMQ software Systems, a software solutions provider and a member of global business coalition on

HIV/AIDS in its 'Freedom HIV/AIDS' programme. The objectives of the games were educate and create awareness among Indian youths about HIV/AIDS and TB (The World Bank Group, 2008). Two games in particular were evaluated, AIDS Fighter Pilot and Stop TB Cricket. Similar to the games used by Kam as above, they were single player pre-loaded mobile phone based interactive games.

Hoefman and Apunyu (2010) describe a project conducted in Uganda where participants answered a series of quiz questions relating to HIV/AIDS knowledge, providing interactive responses depending on right/wrong answers.

3.5.2 Why is there limited work on mGBL in Developing Countries

In comparison with the mGBL applications described in Section 3.4 those in a development setting appear to have much more limited scope. None of the games described exploit the use of location within the games, or involve significant collaboration with other participants (except in the case where individual phones are being shared) – the phones are often used only as portable computing devices, rather than communications. In the examples that use two-way communication have been those aimed at adults have been in the form of quizzes, with participants submitting answers and receiving a pre-set response for example via SMS, little in the way of dialogic approaches.

Barriers and difficulties mentioned in the papers have covered several aspects. Kam et al. (2009) experienced difficulties in translating 'western' game concepts into enjoyable and usable games by Indian children, particularly in rural or less well off areas where previous exposure to other games was low. Khanna et al. (2012) mention the necessity to support multiple languages as a barrier to wider use, a sentiment echoed by Treatman and Lesh (2012), emphasising the need for high quality and locally specific language and images.

More general concerns of M4D also apply to mGBL within developing countries, mobile learning itself seeks to exploit opportunities provided by new mobile communication technologies (see Section 2.6.1) however in developing countries laptops, tablets, phone handsets and mobile networks often lack the availability, sophistication and capacity of that in more affluent regions, coupled with the financial constraints characteristic of development scenarios (Pundir et al., 2012b).

In summary, literature indicates challenges in the translation of game concepts from existing mobile games to different cultures and environments, requirements for locally

specific content and languages, technical challenges in terms of available hardware and infrastructure and cost constraints in terms of access to phones and mobile services. The relatively recent emergence of the field also can account for the lack in diversity, as there is little literature recounting any challenges in developing alternative approaches.

3.6 Why is mGBL an Appropriate Strategy for Supporting the MSM Peer Educators

The evidence above shows that not much work is available on mGBL especially in the developing countries but mGBL has been still identified as the potential strategy to support the peer educators. The rationale for identifying mGBL are based on a good fit between adult learning theories (Section 3.3); combining the affordances provided by mobile learning (Chapter 2, Section 2.6.1), game based learning (Chapter 2 Section 2.6.2) and mGBL (Chapter 2, Section 2.6.3). The specific cultural elements of MSM scenario in India which makes them marginalised and therefore leads them to hide their identities also leads to this decision. The secrecy of identity also means that the peer educators have to travel from place to place to undertake outreach work also shown by Sambasivan et al. (2011) in designing a phone broadcasting system for urban sex workers in Bangalore, India. These factors combined together makes mGBL a potentially valuable means to support the MSM peer educators.

Other projects have supported peer-educators, or community health workers (CHWs) in various ways, highlighting alternative approaches. Treatman and Lesh (2012) proposed using mobile phone based multimedia material (audio, video, images) to replace and complement the conventional flip-chart/memory approach of ASHAs (Accredited Social Health Activists) when working to counsel clients. It was noted that part of the success in this method was that clients found the recorded material coming from a third party (e.g. doctor, nurse, etc) more acceptable than the ASHA herself, and that at the least, playback of the message alone from a poor-performing CHW was more desirable than no support at all. It can be seen that the use of recorded multimedia in the context of supporting MSM peer educators would be less appropriate, in part owing to their more marginalised status; overtly accessing such material in open would potentially lead to victimisation and abuse. Also, the strength of peer education is that the message comes from a peer and not an external speaker and if recorded messages are used with clients it might not be so effective especially when HIV/AIDS is much talked about and stigmatised; and also in part the

requirement for multimedia-capable phones where peer educators are financially constrained and may not be able to access such hardware. Similarly the same can be said about other media-rich solutions such as mobile phone games (Khanna et al., 2012).

Interactive Voice Response systems (IVR) have also been developed to provide access to and deliver information, where phone capability and sensitivity of the subject area are limiting factors (Grover et al., 2009). In referencing the learning and support needs of the peer educators, there is a requirement for dialogic approaches and sharing of information, it is questionable as to whether this format would provide sufficient opportunities whilst maintaining the quality of material required for an engaging experience, as emphasised by Treatman and Lesh (2012) and Shiratuddin and Zaibon (2010). Making numerous phone calls to access information may also present a financial problem, where, as mentioned above, MSM suffer from a great deal of financial marginalisation.

As described in the background chapter, mobile game based learning is particularly suited to dialogic, collaborative learning, interaction and conversation, all of which have been identified above as important needs for a pedagogical strategy for peer educators. Mobile game based learning offers the opportunities for experiential learning, which matches the need to exploit learners experience into account.

In addition to this, mobile technology provides an effective platform for MSM peer educators to access resources, using SMS offers a low cost and private means to do this, and is supported by a growing body of evidence. There has been a growing trend in using SMS for HIV/AIDS related service delivery for/among MSM (Swendeman and Rotheram-Borus, 2010, Bourne et al., 2011, Juzang et al., 2011, Gurman et al., 2012).

Interventions to prevent HIV usually incorporate peers yet empirical support for their efficacy is only recently accumulating. There is a lack of evidence especially detailed descriptions and analytic perspectives. Thus there are few guidelines as to what types of interventions are most helpful. Research shows that work with MSM may be most challenging in terms of attempting to show efficacy and future work on peer interventions needs to use more rigorous evaluation methods (Simoni et al., 2011).

MSM peer education is variously challenged, for example, the main method of behaviour change is based on the IEC model (that is, Information, Education,

Change). The theory behind IEC is that, given the appropriate knowledge, people will alter their (risk) behaviour. MSM peer educators often use IEC materials for outreach work. However, information is never just information: 'One of the many shortcomings of the more basic IEC approaches is the fact that "quality messages" or "information" are often treated as somehow objectively independent from the messy reality of local contexts' (Mooney and Sarangi, 2005). If an NGO takes this 'messy reality' into account and adapts its messages, it exposes itself to adverse consequences. 'NGO teachings are actually policed. Their upstream accountability to the international donors who sponsor their work requires that they be factually accurate by the measures of accuracy set elsewhere' (Pigg, 2001). But for MSM especially in the Indian context with various sub groups of MSM giving factually accurate information devoid of context can hinder peer educators outreach job to motivate clients.

Literature found two interventions which were based on a using technological medium for outreach work. Adding to the peer educators job perspective mentioned above, Rhodes et al. (2007) whilst dealing with MSM in the USA describes an internet chat room intervention; however, importantly they give further details of the process and content of the project. In developing the intervention, the authors note that "interventions using online strategies are nearly non-existent" and recommend that interventions linked with "real-world" practices within CBOs (Community Based Organisations) and public health departments and clinics need to be developed and tested. They also experienced difficulties in practice as the peer educators found it difficult to retain participants' interests during chats, finding also that in their objective to act as peer educators their position as trusted peers in the chat room was eroded and that their initial approach as new peer educators was didactic, keeping with findings from other similar approaches (Rosenthal et al., 1998, Duthie et al., 2005). This study used a participatory design process, working with local CBOs to develop the intervention using an iterative approach involving formative evaluation. They recruited and trained two peer educators (referred to as Lay Health Advisors) to give daily 2 hour sessions in targeted internet chat rooms, where they were trained to work in a range of areas: to provide information, encourage HIV testing and counselling, give peer counselling and suggest harm minimisation techniques. The study does not encompass peer to peer education and also does not give any detailed analysis on how the peer educators felt about using the online chat rooms except that they found it hard to train the peer educators although chat rooms were found to be encouraging medium to systematically reach Internet communities of MSM. The study also showed that the MSM were more interested in getting sexual partners, had low knowledge of HIV and

services. It can be assumed that anonymity in a chat room played role in encouraging people to chat especially as the study showed difference in public and private chat rooms. But contrary to this argument made, the study actually found that building trust in the chat room took time and effort, educators had to understand and respect the online community culture, profiles of educators needed to be exciting to appeal to chatters and intervention communications needed to be focused.

In relation to this thesis the learning taken forward from this is that, support is needed to train the peer educators in use of chats to motivate chatters to talk to them, building trust in the MSM community is a challenging issue particularly as people do not want to talk about their sexual orientations as well as when peer educators start to do their jobs they automatically set apart from the behavior of the rest in the chat rooms.

Another study by MacMaster et al. (2004) describe an internet chat room based HIV education and outreach intervention. In this study researchers and outreach workers identified key internet chat rooms for their target MSM population and conducted weekly sessions starting pre-planned discussions on relevant topics. This resulted in an increase in referrals for HIV testing, however the applicability of the work to the Indian MSM peer educators' context is limited, in that the method (internet chat room) is not related, and although they are MSM the participants in India are very different.

In developing the intervention, the authors note that “interventions using online strategies are nearly non-existent” and recommend that interventions linked with “real-world” practices within CBOs and public health departments and clinics need to be developed and tested. They also experienced difficulties in practice as the peer educators found it difficult to retain participants' interests during chats, finding also that in their objective to act as peer educators their position as trusted peers in the chat room was eroded and that their initial approach as new peer educators was didactic, keeping with findings from other similar approaches (Rosenthal et al., 1998, Duthie et al., 2005).

The next section finally looks at M4D in relation to MSM peer education and opportunities that this study has to contribute or challenges that it must take into account of given the unique MSM peer education scenario in India.

Whilst the challenges in M4D are significant, these are compounded by relating them to the context of this thesis. In the earlier sections it was seen peer education itself lacks well documented and shared, evidence based best practices and thorough

accounts of programmes in different contexts. These issues run in line with the general challenges in M4D outlined above.

This project aims to address a particular type of development, though the scope of the work does not extend to development of a new technical system or artefact, it intends to create and evaluate a new method of support to MSM peer educators by reusing an existing platform. The rationale for reusing an already existing technology comes from the tendency for projects to have been pilot stages of new systems which were being technically evaluated at the same time as the project impact; if at all impact was assessed. The essence of this project is not innovating a technology but given the evidences of MSM profile (secretive, marginalised, mobile community), the strong argument for using SMS and mobile game based learning for work of this nature, an existing technology was identified which corresponded to the MSM peer educators work profiles, that is, going to sites and performing tasks, facing challenges, motivating others etc.

Responding to some of the methodological issues outlined above, the project has developed a detailed theoretical framework behind peer education primarily and in part relevant pedagogical theories of adult learning, game based learning and mobile learning. On the basis of this the intervention is conducted and seeks to contribute in the area of MSM peer education, mobile game based learning in a developmental context. In doing so the project also aims to bridge the gap between practice and research as highlighted in M4D well as in peer education, that is, taking theory based approaches to practice or relating practice to theoretical approaches.

3.7 Conclusion

This chapter started by highlighting the issues faced by peer educators in light of the theoretical ideals based on theories introduced on the previous chapter. It was seen that there is a lack of detailed, theory-based research connecting the practices of peer education with the underlying theories, and the lack of ongoing training and support for MSM peer educators that also relates to their experiences in the field.

The chapter then examined mHealth interventions, within the field of mobile communication for development, it was seen that, when it comes to mobile technology as a new focus for development projects such as health care, the trend is generally on educating or creating awareness about HIV/AIDS, monitoring patients records and other health service delivery via SMS. Only one example mentions the importance of

using game based scenarios to engage and provide effective learning to train doctors in emergency paediatrics. This is an extension of an online course and complements traditional training. In relation to the topic of this thesis, there is also only one example to support peer educators who felt isolated when facing challenges and had limited contact by using forums to share their experience, support collaboration, and knowledge sharing between 4 African countries but the forum uses internet platform and there is no information whether there is an access to smartphones. The majority of literature indicates the benefits of using SMS and show evidence that it is a widely used phenomena and still growing. Although this technology is limited with 160 characters in a standard message, nonetheless, SMS have quick response time for interactive activities for learning, can promote involvement in community of learners, encourage development of independent learners and reduce feeling of isolation by promoting community. There is also evidence that SMS is useful to reach hard to reach communities especially where there is lack of healthcare workers, clinics, health information and can be an interactive tool for health related education and communication, for example, using quizzes.

There is not only a lack of theory based intervention in peer education practices especially for MSM but this is also evident in mobile communications for health development and both these fields are in their early stages as a discipline. It was found that there is a lack of training and support that reflects the practical realities of being a peer educator including detailed accounts of the problems/challenges faced in practice and thereby the support needs. In M4D there is lack of detailed account of the participants experience in using mobile for development.

The key issues outlined so far form the basis for the work in this thesis. To summarise that is:

In peer education for MSM:

- i. Lack of detailed, theory-based research connecting the practices of peer education with the underlying theories
- ii. Lack of ongoing training and support for MSM peer educators that also relates to their experiences in the field
- iii. Lack of detailed accounts of the problems/challenges faced in practice and thereby the support needs of MSM peer educators

In Mobile Game Based Learning:

- iv. A strong rationale for using mGBL as a pedagogical strategy to support the needs of MSM peer educators in India
- v. Little mGBL interventions have been examined in a resource constrained setting i.e. a developing country.

In Mobile Communications for Development:

- vi. Lack of detailed account of the participants experience in using mobile for development

These points therefore underpin the aims of this thesis, which are:

1. Explore peer education and identify their learning and support needs.
2. This aim intends to directly contribute toward (iii) and inform research into (i) and (ii) as below.
3. Design and evaluate the innovative approach to support the MSM peer educators, which is done by re-appropriating on an already existing technology.

This will provide an opportunity to contribute an account of participants' experiences, as per (vi) and evaluate the use of mGBL in a resource constraint context, as per (iv) and (v). It will also provide an opportunity to develop research that connects to peer educators' practices to the underlying theories of peer education (i), and provide a training and support that also accounts for peer educators existing knowledge and experience (ii).

CHAPTER 4. Methodology

4.1 Purpose of the Study

The previous chapters have given the background of MSM in India, the theoretical background of peer education and with respect to this examined the learning and support needs of MSM peer educators. There is a lack of detailed, theory-based research connecting the practices of peer education with the underlying theories, and the lack of ongoing training and support for MSM peer educators that also relates to their experiences in the field. Mobile game based learning has been introduced as a pedagogical strategy relevant to the learning and support needs MSM peer educators. Given this backdrop, the literature review critically examined peer education and mobile technology for development and finds that there is not only lack of theory based intervention in peer education practices especially for MSM but this is also evident in mobile technology for development and both these fields are in their infancy as a discipline. In addition, it was found that there is a lack of training and support that reflects the practical realities of being a peer educator including detailed accounts of the problems/challenges faced in practice and thereby the support needs. In M4D there is a lack of detailed account of the participants experience in using mobile for development.

Responding to the research gap, that is, provide theory based learning and training support to the MSM peer educators, this research took an innovative approach to provide the learning and training support given the background. The identified training and learning support as stated in 3.2 include:

- a. Building a wider knowledge base than just imparting HIV/AIDS prevention information so that the MSM peer educators can adopt a more collaborative and dialogic approach to imparting knowledge to their peers.
- b. Focusing on developing critical thinking power so that the peer educators do not only impart HIV/AIDS facts but can also focus on their clients' risk behaviour change.
- c. Developing confidence and technical competence for developing critical thinking power.
- d. Developing communication and group work skills.
- e. Sharing their experiences and pass on lessons learnt.

This thesis proposes to design and evaluate a SMS based game as a means to meet the gap, and contribute to research to peer education and mobile technology for development. Thus the aims of the research are to:

1. Explore peer education and identify their learning and support needs.
2. Design and evaluate the innovative approach to support the MSM peer educators, which is done by re-appropriating on an already existing technology.

4.2 Research Approach

This study was based on the principles of participatory research, conducting participatory action research and participatory design by actively involving the peer educators of the MSM network of Community Based Organisations, MANAS Bangla, from Kolkata, West Bengal.

Action research can be traceable to the works of Lewin (Lewin, 2010) and Marxism (Tandon, 1996) as well as the liberation movements of the 1960s (Padgett, 2008). Action research is closely linked to Participatory Action Research (PAR) and Community Based Participatory Research (CBPR) in essence with regard to its commitment to community empowerment and egalitarian partnerships (Bradbury and Reason, 2007). The popularity of participatory research came with the post 1960s movements advocating community empowerment in general and power sharing in research, that is, the move away from academic-based controlled trials to “real-world” interventions in communities (Foster-Fishman et al., 2001). Usually if not essentially qualitative methodology is used for most participatory researches. The problems that arise from this shift in focus include challenges in recruiting participants, high rates of attrition of research participants, relevance of the study to participants, and feasibility especially if the community do not buy-in the research (Nelson et al., 1998). But to note here is that Action Research, Participatory Action Research and Community Based Participatory Research have varying level of participant involvement. Action Research and Community Based Participatory Research have been popular with fight against HIV/AIDS (Satcher et al., 2005, Minkler and Wallerstein, 2011). Also there is a focus in all three towards methods, which produce rapid results, but the approaches are not appropriate for every kind of research (Padgett, 2008).

This chapter will explore the appropriateness of the approaches and the methods used to meet the research aims. This study was done in three phases, as will be described

later. This chapter will not explain the step-by-step process of each study, the issues regarding participant selection, reliability and validity of data and the limitations of each study. These will be explained in each consecutive chapters on baseline, game design process, trial and evaluation. This chapter gives a critical overview and justification of research approaches with reference to the literatures reviewed.

4.3 Participatory Action Research

This research uses Participatory Action Research (PAR). Participatory Action Research emerged from work within developing countries, being developed as a technique to empower “the oppressed” or rather those who are marginalised or left voiceless by the dominant establishments (Fals Borda and Rahman, 1991). It has been gaining increasing interest over the past decade in health research (Cornwall and Jewkes, 1995).

Participatory action research is a bottom up approach and can be defined as a systematic inquiry in collaboration with the affected who are being studied for the purpose of taking action or effecting change, in contrast to conventional research which considers individuals or communities as passive. The knowledge, expertise and resources of the involved community are often key to success in research expanding the concept of ‘expert knowledge’. Literature shows a variety of interpretations with regard to what constitutes ‘participation’ as it can be of varying degrees. The important point about participatory research is not the methods but the methodological contexts of their application and the emphasis is not on the outcome but on the process (Fals Borda and Rahman, 1991, Cornwall and Jewkes, 1995). This means, the method might be a focus group or interview but the context in which it takes place is more important, that is involving the participants and getting their view.

Participation of the study population allows a process of sequential reflection and action carried out with and by the participants rather than research ‘on’ them (Cornwall and Jewkes, 1995, Israel et al., 1998, Macaulay et al., 1999, Minkler et al., 2003, Reason, 2004, Chunga and Lounsbury, 2006). The emphasis of this research lies in the locus of power in the research process taking into account local knowledge and researchers are often facilitators or co-researchers in the process. The methods may vary but participatory research approaches views participants as ‘agents’ who have valuable knowledge and are capable of analysing their own situations and designing their own solutions (Cornwall and Jewkes, 1995, Hagey, 1997).

4.3.1 Appropriateness of the approach

Drawing from the context of this project as introduced earlier, the rationale for adopting participatory action research is based, not only on its methodological standpoint (that is it is not a passive participation of participants rather doing the research ‘with’ them), and established use within development and health interventions, but with specific regard to MSM peer educators and mobile technology for development. MSM peer educators being “‘the oppressed” or rather those who are marginalised or left voiceless by the dominant establishments’ as against the discrimination of male to male sex behaviours in India. This research aims to develop their critical thinking power, communication skills, encourage collaboration and establish a dialogic approach to their practice.

Participatory research plays a role in strengthening people’s awareness of their own capabilities. It fits in with the rationale of this research to raise the peer educators critical consciousness, though time constraint of a PhD thesis means this research will not be able to explore whether the new knowledge produced can be transferable and applicable elsewhere (Cornwall and Jewkes, 1995, Hagey, 1997, Israel et al., 1998, O’Brien, 1998, Dickens and Watkins, 1999, Macaulay et al., 1999, Minkler et al., 2003, Chunga and Lounsbury, 2006).

As mentioned above, participatory action research is a method used to deal with marginalised communities such as MSM. The context of MSM is secretive and discriminated against, making approaching individuals and groups for research difficult and affects the reliability of the information that they give. Gathering relevant and accurate information within the research requires trust and rapport to be built with the participants, through participation by developing shared goals and shared understanding of the project this can be achieved.

As reflected in their training needs, participants also need to see relevance and benefits to participating in the research process, thus the use of participatory action research will establish a mutual benefit to the project and their involvement.

It was also noted that there is an ambiguity relating to what peer education entails, depending on projects and objectives (National AIDS Control Organisation, 2007b, National AIDS Control Organisation, 2007a, SOMA, 2008). Working with the peer educators as participants in the research will help develop a more accurate understanding of what peer education is in practice in their context. Further, much of

the theoretical work in peer education does not closely relate theories and findings of the research to everyday realities, needs and practices of peer educators; or recommendations of the research are not put into practice and further evaluated. This research method allows a more bottom up approach to capture the peer educators' knowledge and experiences, relate them to the theoretical background while utilising it in conducting this research and documenting it. For example, this research aims to raise the critical consciousness of the peer educators given the theories and recommendations from literatures about how an effective peer educator should be. This thesis by using the bottom up participatory approach will capture their knowledge and experience and use them to design the intervention. The evaluation will determine the enabling or hindering conditions under which the aims were achieved or not.

Complement to this, looking into the wider scope of M4D, it was noted that there is a tension in research to be effective or to produce evidence of effectiveness. The tension is to decide whether to focus on the needs of practitioners to develop a useful outcome or on the research aspect to gather comprehensive data on the processes and impact of the research on the development issue (Duncombe and Boateng, 2009). The choice of participatory research methods is particularly relevant as a means to address this tension. Participatory research originated in part in developmental work and therefore at its core is the involvement of participants as co-researchers and therefore influencing the outcome and priorities of the research to ensure that it is both useful to them and meets the external research aim. The participatory design approach which this research will also adopt to design the intervention also echoes the same sentiments although its origin is in Scandinavian work-oriented design to production. This is detailed later in this chapter.

4.3.2 Limitations

Whilst the advantages and strengths are given above, in criticism it should be noted that building partnership with community takes time which may not be available given the timeframe of research projects. Critics often point out that the research results can be biased, impressionistic and unreliable (Minkler et al., 2003). Although there are limitations these criticisms are addressed throughout this thesis demonstrating that the choice of methods is appropriate and that the results are critically analysed. In this case, the researcher has experience of working with the MSM community in India in particular in West Bengal since 2003 and this helps assess the appropriateness of the results as much as any reporters bias that may be inferred.

McTaggart (1994) highlights further criticisms of participatory action research, pointing out that claims that participatory action research is empowering, liberating and emancipatory have been criticised as false promises because the promises are over proportionate compared to the reality of participation especially in the marginalised. Whilst it is necessary not to overstate the outcomes of a research project, McTaggart also points out other such claims of empowerment stem from the participatory research movement making direct observations in cultures as different as Colombia and India (Tandon, 1988, Tandon, 1996), that is, it has been seen as empowering in India and Columbia does not mean it is everywhere else.

It is said that gathering relevant and accurate information within the research requires trust and rapport to be built with the participants, through participation by developing shared goals and shared understanding of the project this can be achieved. But in most cases a researcher comes with a research aim and it is a limitation to shared goals and participants may not truly subscribe to that aim and may find their interest being pushed aside given the priority of the project aim. Also, often research project means investment into the community or affected group. Often this might provide an overriding incentive to being part of the research and biased participation.

With regard to this project, as reflected in their training needs, the peer educators also need to see relevance and benefits to participating in the research process, thus the use of participatory action research is aimed at establishing a mutual benefit to the project and to the participants involved because the problems addressed in the project which is captured as simulated scenarios of the game are authentic to their experiences. Nonetheless, a limitation is that after the game has been piloted and the focus comes to evaluation the direct benefit is less obvious to them.

4.4 Participatory Design using Iterative Process

4.4.1 Introduction

This research explores the training and support needs of the MSM peer educators working with MANAS Bangla, a network of MSM CBOs and NGOs in a Kolkata. Exploring the training needs in a baseline study was aimed at investigating the research gap identified in the background and the literature review. This is detailed later in the baseline chapter. The study then used part of the data from the baseline study to design the SMS based simulation game. The SMS based game on mobile

phones is an already existing SMS game used at the Mixed Reality Lab at the University of Nottingham. The game was chosen because:

- a. SMS was established as an effective tool for health and education intervention in Chapter 1 and Chapter 2 especially in developing countries and also to reach out to hard to reach groups, in this case it being the marginalised and discriminated against MSM peer educators in India. Thus technology of the game corroborated with the MSM situation.
- b. Common factors in peer education practices include activities such as visiting sites to meet clients/peers, undertaking tasks such as distributing condoms and facing odds/challenges in the field of work such as talking about drug use to an underage school youth. The game chosen for this project is called the *Day of the Figurines*. The style of the game is collaborative, multiplayer and the gameplay involves visiting locations, undertaking missions and dilemmas which corresponds to the practices of peer education. Thus the style of the game correlated with the peer educators outreach work.
- c. Chapter 2, Section 2.6.2 states that games and simulations have a long tradition of being used as a learning resource whilst Section 2.6.3 onwards it is shown that game based learning is an emerging trend in mobile learning where mGBL is used mostly for experiential learning for academic learning using simulation and decision-making tasks. But in the consecutive sections it is seen that when it comes to mobile technology as a new focus for development projects such as health care, the trend is generally on educating or creating awareness about HIV/AIDS, monitoring patients records and other health service delivery via SMS and not using simulations. Given the theoretical evidence of simulations as an effective educational tool, a simulation-based game such as is the Day of the Figurines simulates the activities that the peer educators undertake. This is also an opportunity to use a game based learning within M4D research and evaluate its legitimacy as most mGBL work has been explored in resource rich environment and the Day of Figurines itself has been used for entertainment purposes in mostly resource rich countries.
- d. Another purpose for which this game was chosen was because this allows the opportunity for the MSM peer educators to have hands on practice via SMS through simulated scenarios of the game without actually physically visiting sites. Given the discrimination the MSM face this allows them the freedom to play without physically being present.

- e. This game also allows anonymous collaboration without having face to face encounter especially when MSM do not want to disclose their identities also their particular MSM identities within their own groups as explained in the background chapter.
- f. The focus of this work is on conducting the intervention, that is, designing, deploying and evaluating an SMS simulation game using participatory approach. It is out of the scope of this thesis to create a new technology. Whilst this might be an objective of further work the resources and support (of the researcher and academic institution) available only allowed customisation of the content and deployment of the game.

4.4.2 What is Participatory Design

Participatory design has also been gaining impetus in technology design research as well as in technology enhanced educational research (Kam et al., 2006, Kam et al., 2008) especially in the developing regions of the world (Ramachandran et al., 2007). Participatory design and participatory research frameworks have a similar interest in participation, but different strategies for doing so and with different intent (Foth and Axup, 2006). Participatory design is a Scandinavian design tradition which came about as a reaction to the deskilling brought about by the introduction of computers in labour. This approach sought to involve workers in the process of design in recognition of their active participation (Bødker, 1996). Research claims that most participatory designs are rooted in a desire for change to affect organisational functioning or in ways users are involved in designing the new technology (Taxen, 2004). It is argued that local stakeholders can contribute cultural information relevant to design such as their needs and practices through interaction with technology artefacts, also unique social network structures embedded within communities are crucial to the acceptance and potential adoption of technology (Ramachandran et al., 2007).

In game design, participatory design involves collaboratively staging design processes involving participants' with relevant competencies and interests. Researchers have argued that game design is a social process involving communication, negotiation and entering compromises and therefore is one of the cornerstones of designing (Brandt and Messeter, 2004, Brandt, 2006, Détienne, 2006). Participatory game design helps in bridging the gap between the designer and the players (Salen and Zimmerman, 2003, Ermi and Mäyrä, 2005).

4.4.3 Appropriateness

This study falls under the umbrella of participatory design because it allows a process of mutual learning and analysis between the researcher and the participants; that is the peer educators brought in their local perspectives and locally defined priorities as informants and provided feedback for development, enhancement and effectiveness of the SMS game during the design process conforming to the reflexive, flexible and iterative character of participatory research approach. In this research the participants:

- a. Informed the game design
- b. Exchanged and gained knowledge and engaged with other peer educators through the design process
- c. Reflected on their work and practices as part of the design process

This method embedded the participants' knowledge and understanding into the design of the game, as necessary within the theoretical priorities within both peer education, and the pedagogical strategy of adult education (Freire, 1970, UNAIDS, 1999, Population Council, 2000), that is, adults learn best when their own knowledge is put into practice (See Section 3.3).

Peer educators have tended toward didactic and biomedical knowledge in their work (Campbell and MacPhail, 2002); participatory design process not only involves technology design process, but also introduces dialogic methods and critical thinking as desired within the intervention (Freire, 1970, UNAIDS, 1999, Population Council, 2000), Campbell and MacPhail (2002).

There is an imperative within M4D to develop mobile technology as a means of production, engaging in participatory design falls in line with this, as participants' become more the creators of the outcome (Duncombe and Boateng (2009).

4.4.4 Limitations

This research uses an already existing game with set rules and game mechanics. Whilst this has been seen as closely conforming to the profile of MSM peer educators and the features of the game correlate with the needs of the MSM peer educators and their environment, this restricts the scope for the participants to design their own solution. Having said this, Freire's concept of critical consciousness relating to empowering the marginalised as stated in Section 2.5 states that the highly oppressed find it difficult to think critically and propose alternatives to bring about change.

Restricting the design scope can provide a useful scaffolding upon which the participatory design process can work as a catalyst to help the participants think critically where otherwise they may struggle or it may at least take a lot of work to conceptualise what they want in a resource constraint setting where there is not much exposure to technology. On the other hand, restricting their freedom might limit their critical thinking power as they will only be thinking only for the purposes of designing the game and not solving their wider issues.

Participation in research can be problematized on the grounds that the researcher brings their agenda or priority aims for the research unless a particular affected group solicits the researcher and invites them to conduct a research to find a solution to a problem. Thus although participatory research intends to be a bottom up approach at the core it is initiated from a third party outside the affected group. This implies that participants may not truly be co-researchers and have as equal control and power over the research or the process as participatory research ideals state. However participatory research can be seen as a continuum with varying level of participation as different work allows.

4.5 Qualitative Research

4.5.1 Introduction

Most participatory research uses qualitative methodology if not essentially (Padgett, 2008). This participatory research uses qualitative methodology to conduct the research. Qualitative research studies things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin and Lincoln, 1994). Qualitative research encompasses a range of philosophies, research designs and specific techniques including in-depth qualitative interviews; participant and non-participant observation; focus groups; document analyses; and a number of other methods of data collection (Pope and Mays, 2008). This research mainly uses interviews and focus group discussions for multiple purposes. The following will justify the use of qualitative methodology for this research followed by descriptions of the methods used. Where used in each study these methods will be further described and justified in the relevant chapters.

4.5.2 Rationale for the choice of methods

The participatory approach and the research questions, the research methods for this study were chosen to provide a comprehensive picture of a complex phenomenon (Morse & Field, 1996). The research uses qualitative methods for both the exploratory study and the game design and evaluation. Qualitative research focuses on the illumination of the interpretation of events rather than identification and construction of facts (while quantitative research tests relationships between predetermined variables). The research aims are to first to build an understanding of peer educators learning and support needs, then to design and evaluate an SMS based game to cater to these needs. Qualitative methods will help achieve this by allowing a flexible and iterative approach to data gathering, allowing flexibility to work in participation with the MSM peer educators involved and allow inquiry to focus on relevant and productive topics that emerge as the work progresses and to generate the detailed and rich understanding required.

Throughout the work the following two methods were used. Triangulation was achieved through the use of multiple informants and a combination of methods in order to assure the validity of the results. Selection of participants will be described within the relevant chapters at each stage of the research. Interviews and focus group discussions were audiotaped with informed consent, with the exception of the follow up interviews where written notes were taken whilst conducting the interview over the phone. Two separate SAATHI members were appointed as note takers for the respective focus group discussions during the baseline study. SAATHI is an organisation giving technical assistance to organisations working on sexual health. They were the initial contact who introduced the researcher to MANAS Bangla. A transcriber was appointed to transcribe the audio data for the interviews. All data were held anonymously.

4.5.3 Semi-Structured interviews

Semi-structured interviews are loosely structured consisting of open-ended questions that allow viewpoints to emerge freely (Britten, 1995, Aira et al., 2003, Barriball and While, 2006). A semi-structured interview is verbal interchange between two people, the researcher and the informant where the researcher aims to gain information by asking questions. Although there is a pre determined question list the interview is conducted in a manner of a conversation whereby the informant can express issues they feel important (Longhurst, 2003). In this study interview schedules were

prepared in advance with a number of predetermined themes to frame the discussion and interviews were conducted both in person during the baseline study and over the phone by the researcher during the evaluation phase.

4.5.4 Focus-Group Discussions

Focus group discussions capitalises group interaction as part of information generation and exchanging anecdotes (Kitzinger, 1995). It comes closest to dialogic participatory research method where the researcher is more a facilitator in knowledge production. Participants are owners of their own knowledge and are empowered to take action (Barbour, 1995, Cornwall and Jewkes, 1995, Freire, 1996). This research conducted focus group discussions as part of the game design process. The researcher facilitated all focus group discussions.

In addition, a series of game design workshops were conducted to generate and test content for the SMS based game. These will be described as part of the game design process in the relevant chapters.

Another approach to this work could have been to conduct Appreciative Inquiry with the MSM peer educators. Appreciative Inquiry is a participatory technique often used within development (van der Haar and Hosking, 2004) and has been used to engage with the issues of MSM for example in the Six Cities Scanning Initiative (AIDS Project Management Group, 2011). Appreciative inquiry contents that that a problem□oriented focus of review and inquiry “reduces the possibility of generating new images of social reality that might help transcend current social forms” (Preskill and Catsambas, 2006). Appreciative Inquiry focuses on imagining and designing an envisaged new scenario by the participants’ identifying strategies from their own positive experiences. In considering this the marginalised situation of MSM in India is brought to attention, particularly the difficulties in critical consciousness. (Freire, 1993) refers an a-critical thinking (“adapted consciousness”) in this situation which can prevent participants imagining alternatives to existing situation. Further, it whilst theoretical ideals for peer education have been established, the focus is more to relate these to the pay-to-day experiences of the peer educators, so in taking the interview and discussion approach above can provide more directly applicable results.

4.6 Ethics

The study received ethical clearance from the by the Faculty of Medicine and Health Sciences, University of Nottingham ethical committee. The committee looked into the research proposal and methodology. Additionally, the committee reviewed the standard of practice in the research to protect any subjects and the researcher from harm, to preserve the subjects' rights welfare and dignity (The University of Nottingham, 2008). Ethical clearance was also sought from the concerned organisations in India as SAATHII and MANAS Bangla. Relevant documentations were submitted and approved by MANAS Bangla.

All participants were verbally informed of the aims of the research by the researcher. As described by Morse and Field (1995) and Silverman (2005) measures were taken to ensure that participants throughout all the processes were fully informed of the nature of the research, the demands placed upon them and how the data will be utilised. This information was given in writing and verbally prior to process. Participation was voluntary and informed consent documented.

MANAS Bangla was consulted to comprehend the viability of the written consents due to the social stigma attached to MSM. Before each process the participants were ensured of the anonymity and confidentiality of their responses. Participants' verbal or written consent were taken before recording any data. In all data collected all identifying information were omitted during transcription of the tape recordings. Transcripts will be kept for seven years following the completion of the study. All data was labelled by codes such as, 'IP' for baseline Interview Participants (e.g. IP1 for baseline interview participant 1) and 'P' for final evaluation Participant, instead of personally identifiable information. As this research was conducted as part of an academic study, anonymous data were shared with the academic supervisors for purposes of supervision. Personal contact details were used only for arranging appointments, validation of transcripts (where agreed), for receiving a copy of the research report/certificates (where agreed). Additionally to help protect the identity of the MSM PEs, the interviews, focus group discussions and workshops for the game development were held at sites convenient to the participants.

All participants received a written copy of the information sheet, consent form and a certificate for participation. The participants were informed that the findings would be anonymously shared with them and for academic purposes. Adjustments to this procedure took place where necessary to account for participants' concerns.

Participants were compensated with an inconvenience allowance. Permission had been taken from the Mixed Reality Lab to use the web-based authoring tool of the text-based game, the Day of Figurines developed by the Mixed Reality Lab.

It was realised that the data collection process may bring forth sensitive and complex issues especially during the focus group discussions at the first iteration where the Outreach Workers (supervisors to the PEs) were present. The researcher clarified the circumstances in which information would be communicated within the groups. This was also the case during the final trial as some of the PEs at the beginning of the project had progressed to advanced positions but still were recruited for the trial so were others who were in those advanced positions but were not part of the study at an earlier stage. As suggested by (Holloway and Wheeler, 1996, Silverman, 2005) it was planned that where issues of concern would emerge, or apprehension over the welfare of the participant or others occurred, data collection or their participation in the trial would cease. The welfare of the participant would take precedence. Details of support agencies were given to all participants.

There were three phases of the research with a number of activities involving the participants. Following Figure 4.1 shows a snapshot of the three phases and details the activities within them.

Phase/ Iteration	Objective	Method	Sample Size/ Participants	Outcome
1. Baseline (in Kolkata)				
	<ul style="list-style-type: none"> ▪ To explore, identify and describe the roles, challenges and practices of MSM PEs in Kolkata ▪ To identify their key learning needs 	Semi-structured one-2-one interviews (tape recorded)	12 Interviews with PEs from 3 MANAS Bangla DICs based in Kolkata 2 experienced PEs + 2 not so experienced PEs from each of the 3 DIC	<ul style="list-style-type: none"> ▪ Thematic analysis of the interviews to explore peer education ▪ 71 quotes, phrases/paraphrases noted to be used for developing the game.
2. Game Design Process				

First Iteration (in Kolkata)	<ul style="list-style-type: none"> To develop Game scenarios, storyline and destinations 	<ul style="list-style-type: none"> Focus Group Discussions (FGD) (tape recorded) 	<p>2 FGD FGD 1 = 6 PEs + 1 ORW + a note taker FGD 2 = 7 PEs + 1 ORW + a note taker</p>	<ul style="list-style-type: none"> 71 phrases/paraphrases read aloud to the participants in 2 groups. Each group prioritised fourteen themes to be used for game development.
Second Iteration (in Kolkata)	<ul style="list-style-type: none"> Paper prototypes of game scenario (destinations, mapping places on a board, colour combination of the game board). Storyline developed by role playing and discussing the scenarios the PEs face during outreach work. 	<ul style="list-style-type: none"> Game Design Workshop (GDW) 	<p>2 GDW GDW 1 = 3 PEs GDW 2 = 3 PEs 1 PE from each DIC for both workshops</p>	<ul style="list-style-type: none"> Destinations of game decided. Themes as prioritised by the PEs during FGD 1 and 2 narrowed down to 14 and developed as scenarios and storyline.
Third Iteration (Nottingham)	<ul style="list-style-type: none"> Data translated into English and authored on DoF authoring tool in English for trial test in Nottingham Play tested 	<ul style="list-style-type: none"> Authoring of content on DoF authoring tool. Game Trial 1: play test the authored game in English 	<p>2 Game Trials Trial 1: 3 participants from LSRI and MRL, UoN Trial 2: 5 participants from LSRI and MRL, UoN</p>	<ul style="list-style-type: none"> Feedback and refinement of content Content translated back in Bangla from English in preparation of trial in Kolkata
Fourth Iteration (Kolkata)	<ul style="list-style-type: none"> Further testing and development of content in Bangla To trial game with PEs mobile phones in Kolkata and the game server based in Nottingham 	<ul style="list-style-type: none"> Game Design Workshop (GDW) Game Trial 2: 1st Trial with the DoF game server in Nottingham and the PEs mobile phone in Kolkata 	<p>1. 2 GDW GDW 1: 5 PEs [2 PEs from 3 DICs. <i>Note: 6th PE could not make it on the day</i>] GDW 2: 6 PEs [same PEs as in GDW 1] 2. 1 Game Trial 4 PEs [2 who were well versed and 2 who were not so well versed with SMS]</p>	<ul style="list-style-type: none"> Feedback and refinement of content after the GDW PEs received messages from the game server but could not reply back.
Fifth Iteration (Nottingham)	<ul style="list-style-type: none"> Further testing and development of content Resolve technical fault of SMS from India not reaching DoF server in Nottingham 	<ul style="list-style-type: none"> Authoring of content on DoF authoring tool. Game Trial 3: Play testing. 	<p>1. Game Trial 4 participants: 2 from UoN 2 aware of MSM issues in Kolkata but not from UoN. All participants understood Bangla at various levels</p>	<ul style="list-style-type: none"> Feedback and refinement of content after the GDW Technical problem partially resolved.

Final Trial (Kolkata)	<ul style="list-style-type: none"> ▪ To trial the game and gather feedback 	<ul style="list-style-type: none"> ▪ 2 Workshops to introduce the game to a group of PEs and PEs support staff ▪ Final Trial of game 	Final Trial 16 participants 8 who were involved in the design process at all times or at some point + 8 who had never been involved in the process	<ul style="list-style-type: none"> ▪ Game trialled ▪ Log data gathered from DoF authoring tool
3. Evaluation				
	<ul style="list-style-type: none"> ▪ To assess impact of game on: <ol style="list-style-type: none"> a. Learning needs as identified by the PEs at baseline b. Processes and practices of peer education ▪ To assess usability, usefulness and satisfaction of the SMS simulation game as a tool to support for peer learning. 	<ul style="list-style-type: none"> ▪ Focus Group Discussions (FGD) (tape recorded) ▪ Follow up Semi structured Interview after 3 months conducted over Skype (not tape recorded) 	<ul style="list-style-type: none"> ▪ 16 for FGD ▪ 15 for Follow up interviews. 	<ul style="list-style-type: none"> ▪ FGD conducted day after the game and analysed thematically. ▪ One of the interviewee was unavailable as he had left MANAS Bangla and another interviewee did not complete the whole interview.

FIGURE 4.1: SNAPSHOT OF THE PHASES

4.7 Conclusion

This chapter has outlined and justified the methodology in this thesis. It has also raised issues relating to these approaches. The rationale for these approaches draws from two areas, first the theory and practices of these approaches themselves and second, the context of the MSM peer educators. The following chapters will detail the research carried out providing further information on the methods used where necessary as noted above.

CHAPTER 5. Baseline Study

5.1 Introduction and Rationale for the Baseline

The background and the literature review show there is a dearth of detailed accounts of peer education programmes especially with regard to the problems and challenges faced by the peer educators in spite of the theories recommending what an effective peer educator should be. This is, as mentioned in Section 3.2, compounded by political structures of NGOs and funding bodies where limitations and assessment metrics restrict the flexibility and accounting for ‘messy reality’ (Pigg, 2001, Mooney and Sarangi, 2005), that is, NGOs are restricted in what they can do and account for with regard to experiences of the peer educators given the criteria of the funders or the structures of the NGOs among others.

The previous chapters found two clear gaps that unite peer education and M4D. These are:

1. Lack of theory based interventions in peer education and M4D.
2. Lack of training and support that reflects the practical realities of being a peer educator including detailed accounts of the problems/challenges faced in practice and thereby the support needs. In M4D there is a lack of detailed account of the participants experience in using mobiles for development.

Thus, the literature shows that there needs to be a better understanding of what goes on in peer education and also a clearer link between the theories behind peer education and the reality of being a peer educator. That means why what they are doing is theoretically sound or not, and why it is difficult for them to do the things that are theoretically recommended in the literature.

Given the summary of the background and research gaps, the research aims as described earlier are:

1. Explore peer education and identify their learning and support needs.
2. Design a learning support and evaluate its effectiveness.

This chapter will focus only on the exploratory study as stated in aim (1) above, however the data collected for this study serves two purposes. First it explores peer

education in practice as in (1). Second, it identifies the learning and support needs of the MSM peer educators. These are used to design the SMS game as indicated in (2). This chapter only details the parts relevant to exploration of peer education in practice and summarising the learning and support needs. The learning and support needs are not thematically analysed as are done for (1). Instead the phrases/paraphrases from the part containing this data is used in the next stage for designing the game.

Participatory research methods are used for this study as described in the methodology how it is appropriate to conduct this research and how qualitative methods are also adopted for the exploratory study.

5.2 Study (Baseline) Aim:

1. Explore peer education and identify their learning and support needs, that is:
 - i. What are the roles, challenges and practices of MSM peer educators?
 - ii. What are their key learning needs?

5.3 Data Collection

5.3.1 Procedure

This study was conducted in collaboration with MANAS Bangla in Kolkata in India. As mentioned in Chapter 2 and 3, West Bengal is one of the states with high prevalence of MSM. MANAS Bangla or MSM and TG (Transgender) Action Network for Social Advocacy is a network of thirteen MSM NGOs and CBOs based in West Bengal. MANAS Bangla is involved in sexual health interventions using rights based approach to empower socially excluded and disadvantaged males. Its vision is to coordinate and enhance the efforts of organisations working to promote health and general well being of the MSM in West Bengal¹¹. MANAS Bangla's programme activities are peer education and outreach work based as they have to build rapport and communication with the MSM community at large. This in turn leads to facilitating access for a place or centre the community can drop-in to as per their convenience and access to clinical services as well. These centres are popularly known as a DIC or Drop-In-Centre.

¹¹ MANAS Bangla (2012), About MANAS, available [online] at <URL: http://www.ngogateway.org/user_homepage/index.php?id=672 accessed on December 10, 2012

MANAS Bangla covers most of the southern and northern parts of the state of West Bengal to reach out to the MSM community through their DICs. At the time of the baseline study there were nine DICs at MANAS Bangla throughout West Bengal. This project was conducted with initially three DICs based in Kolkata, the capital of West Bengal. These are Kasba, Kadapara (which included an extension to Shobhabazar) and Dumdum DIC. The rationale for choosing Kolkata was that literature in Chapter 2 and 3 showed that urban areas had more MSM than rural areas. In addition there was concern over the practical logistics of accessing hard to reach MSM and DICs in rural areas in West Bengal. In Kolkata there were three DICs feasibly accessible for the duration of the project. Moreover, permission and advice from MANAS Bangla also affected the choice of sites. At the end of the project, the involved DICs were divided into zones, with Dumdum and Shobhabazar in Zone 2 and Kasba and Kadapara in Zone 3 (MANAS Bangla, 2007a, MANAS Bangla, 2007b). The zoning of DICs has a bearing later on in this thesis, as participants mention meeting peer educators from other DICs/zones. This is mentioned later in the thesis.

5.3.1.1 Visiting Kolkata

Initial contact for the fieldwork was made through SAATHII, Kolkata. SAATHII is an organisation in India working towards strengthening ‘the capacity of organizations working to strengthen and scale up the response to the HIV/AIDS epidemic in India’¹². SAATHII provides technical support to NGO and CBO such as MANAS Bangla. The researcher contacted SAATHII, Kolkata over email and introduced the project idea. Consequent negotiations resulted in a letter of participation by SAATHII. Ethical approval from the University of Nottingham Medical School thereafter allowed field entry to Kolkata. SAATHII introduced the researcher to MANAS Bangla and further negotiations on the logistics of the fieldwork were ongoing with these organisations before arriving at Kolkata.

On arrival, scheduling a meeting with the organisations did not go as smoothly as predicted. The organisations especially SAATHII initially felt that they were not well informed about the trip. SAATHII also felt that the research was going to go ahead without their involvement in it. Such tensions as well as relations of power dynamics

¹² SAATHII (2012), About SAATHII available [online] at <URL: <http://www.saathii.org/about> accessed on December 10, 2012

between stakeholders had been observed by the researcher throughout the entire process of the project. Face to face meetings resolved these tensions.

Initially it was especially difficult to communicate with the MANAS Bangla network members over emails and phones. Meeting the mentor face to face and explaining the project and its purpose seemed to resolve a lot of misunderstanding instantaneously. Communication with MANAS Bangla has initially been with the Treasurer and Director of Programmes. It has been quite difficult to get in touch with him from Nottingham and also when the researcher arrived in Kolkata. Meeting the mentor eased the communication to a large degree as he was reachable over phone as and when required and guided the researcher in understanding the structure of MANAS Bangla. He informed that the peer educators can be accessed at the three DICs in Kolkata. He added that the peer educators have weekly meeting at the DICs and recommended to call the DIC Coordinators to get verbal permission to be able to attend those meetings and meet the peer educators. Upon calling, two of the DIC coordinators instantly agreed to meet the researcher and allow the researcher to meet the peer educators during the weekly meetings although they mentioned that the DICs are under pressure to reach certain targets due to an evaluation work that has been taking place. The third DIC coordinator had to be reassured by the mentor of MANAS Bangla given the evaluation work deadline they too had to meet.

5.3.2 Setting and Participants

Setting in this case refers to the individual DICs the researcher visited to meet the peer educators and at times conduct interviews as per the convenience of the interviewees. The researcher visited each of the DICs at Dumdum, Kasba and Kadapara and met up with the staff members and peer educators respectively. The researcher also visited the extension DIC of the Kasba DIC called the Shobabazar DIC. The DIC coordinators were briefed about the project prior to briefing the peer educators in their weekly meeting. An information pack was provided to the MANAS Bangla head office as well as the DIC coordinators. This contained details about the project, interview schedule, consent form and information about inconvenience allowance, ethical procedures, contact details of the researcher, research supervisors, University of Nottingham ethical board in case of complaints.

Initial conversations with the peer educators concluded that the peer educators came from different geographical areas of Kolkata and its suburbs. The peer educators were mostly involved in outreach work as stated in the literature. The outreach work

involved visiting at different sites to avail MSM clients and practice their peer educator duties. From the briefing session it was apparent that peer educators from each DIC had their own peculiarities, that is, circumstances which were unique to their situation and geographical area of work. For example, peer educators in southern Kolkata did not work as much by a river canal as in the north or peer educators in southern Kolkata worked more by the lake or park. Thus circumstances they faced were different from each other.

5.3.2.1 Selection Criteria

Choosing a study sample is an important step in any research project since it is rarely practical, efficient or ethical to study whole populations. The selection of an appropriate method depends upon the aim of the study. Qualitative study usually requires a flexible, pragmatic approach to sampling as its aim is to provide illumination and understanding of complex psychosocial issues and are most useful for answering humanistic 'why?' and 'how?' questions. The samples for qualitative investigations tend to be small compared to quantitative research. There is no evidence that the values, beliefs and attitudes that form the core of qualitative investigation are normally distributed, thus one cannot do a random sampling using probability approach nor can a qualitative study can be easily generalisable. Quantitative researchers often fail to understand the usefulness of studying small samples. This is related to the misapprehension that generalisability is the ultimate goal of all good research and is the principal reason for some otherwise sound published qualitative studies containing inappropriate sampling techniques. It is well recognised that people are not equally good at observing, understanding and interpreting their own and other people's behaviour. Qualitative researchers recognise that some informants are 'richer' than others and that these people are more likely to provide insight and understanding for the researcher. There are three broad categories of sampling in qualitative research such as opportunistic or convenience sampling, purposive sampling and theoretical sampling. Convenience sampling is the least rigorous method involving selection of the most accessible subjects. Theoretical sampling necessitates building interpretive theories from the emerging data and is mostly used in grounded theory approach (Patton, 1980, Biernacki and Waldorf, 1981, Pound et al., 1995, Marshall, 1996a, Marshall, 1996b, Koerber and McMichael, 2008).

This study uses purposive sampling of a total of twelve participants for the exploratory study. Schatzman and Strauss (1973) state that purposive sampling is a practical necessity that is shaped by the time the researcher has, his/her interest and visits to the

sites - the researcher will know who to sample. They add that the researcher sample people according to the aim of the research, this may include categories such as age, gender, role or function in organisation. This is similar to Patton (2001) description of purposeful sampling and those are the reasons purposive sampling was used for this study. According to Patton the logic and power of purposeful sampling lies in selecting information rich cases for the purpose of the study. Schatzman and Strauss (1973) point out that as the study progresses, new categories may be discovered and which may lead to the researcher building new dimension to sampling.

All attending peer educators at the weekly meeting were requested to volunteer for participation. The participants were informed that selection will be done on first come first basis but efforts will be made to have a mix of both experienced and inexperienced peer educators and not just one or the other. It was also informed at this stage about the development of the SMS game and that some participants will be re-selected/retained for the later parts of the project, that is the game design process. Three, six and another three peer educators were selected from the Kasba, Dumdum and Kadapara DICs respectively on first come first served basis. The DICs at the time of this study were divided into north and south according to the geography of Kolkata with Dumdum in the north and the rest in the south although Shobhabazar which was an extension of Kasba DIC was geographically at the north of Kolkata. This was informed by MANAS Bangla at that time was due to logistics of appointing a DIC co-ordinator. Thus six participants from the north and six from the south were selected with three each from the southern DICs. As the project was briefed to the peer educators in the weekly meeting some peer educators informed that they would think over and take a decision over participation and some volunteered at the spot. However, by the time some others decided to participate, the total number of volunteers already reached the desired twelve. One of the peer educator from the Dumdum DIC cancelled his interview and did not get the chance to participate again as someone else who was willing to take part was recruited upon his cancellation. Additionally representation from all the DICs was desirable, thus not more than six peer educators from the Dumdum DIC were selected for the interview. In addition to representation from the three DICs with their unique field experience, the selection criteria also paid attention to having a mix of experienced and inexperienced peer educators as was felt that experience, challenges, problems faced by inexperienced peer educators could be different to those who were experienced. In addition the game design required multifarious experience to build the game scenarios.

5.3.2.2 Location of Work

The baseline study was conducted with participants from the three DICs in Kolkata, West Bengal as mentioned earlier the Kadapara DIC including the Shobhabazar extension, Kasba, Dumdum. As informed by the staff at MANAS Bangla head office, the organisational structure of the DICs included the DIC Coordinator, a Doctor, a Counsellor for regular STI (Sexually Transmitted Infections) and psychosocial counselling, MIS (Monitoring and Information Services Officer), Field Supervisor, ORW (Outreach Worker), DIC Assistant, Peer Educators, ICTC (Integrated Counselling and Testing Centre) Team comprised of the ICTC Counsellor, ICTC ORW, and the Laboratory Technician. The following sections give details of the three DICs. The following information are from the field notes taken by the researcher for information about the DICs and their work. These information are from hand written notes by the researcher from informal conversations with MANAS Bangla staff. These are not used for the purposes of analysis but solely for information.

5.3.2.2.1 Kadapara DIC

The Kadapara DIC was set up in 2006. The DIC had eight peer educators and one peer educator-cum-DIC Assistant. Out of the eight peer educators three were new while the other five started mostly in 2006. According to the DIC Coordinator at the time, the components of the Targeted Intervention programme were based on the principles of the National AIDS Control Programme III. The three main targets at that time were:

- a. Recruiting clients to Integrated Counselling and Testing Centres or ICTC: One hundred per cent ICTC coverage to be achieved in the target population in one year. The task of bringing clients to the DICs for voluntary blood testing and counselling is popularly known as ICTC, or 'doing ICTC'. ICTC is featured in the game storyline mentioned later.
- b. Presumptive Treatment and STI: Eighty per cent of the MSM population to be treated with presumptive treatment and twenty per cent with STI treatment.
- c. Condom Distribution and Social Marketing: Demand plan to be based on high, medium, and low volume of sexual encounters within the MSM population. High volume includes MSM having ten to fifteen sexual encounters per week, medium volume includes having within nine encounters per week and low volume includes having four encounters a week.

The National AIDS Control Organisation's guideline assumes that the condom distribution plan should be planned according to the volume of the sexual encounters in the MSM population, that is, more condom distribution in populations having more sex and accordingly. However, the MSM field experiences showed that in spite of the National AIDS Control Organisation's guideline, the MSM population showed that risk lay more with the low volume population as they practice multiple partner change increasing their risk of HIV/AIDS. Thus although the National AIDS Control Organisation's guideline predicted the plan of condom distribution as per the volume of sexual encounters in the communities at risk, it did not apply to the MSM community.

5.3.2.2.2 Kasba DIC

Shobhabazar was extension of the Kasba DIC. Kasba DIC had six peer educators and Shobhabazar DIC had four. They had a common Management Information System (MIS) Officer and a DIC Assistant.

5.3.2.2.3 Dumdum DIC

There was a total of ten peer educators and two peer educator-cum-office assistants. The lowest education level of a peer educator at the Dumdum DIC was ninth grade at school and the highest grade was Masters level.

5.3.3 Instrumentation

In a qualitative study, the instrument used to collect data may be created by the researcher or based on an existing instrument. This study uses semi-structured interviews. In semi-structured interviews the interviewer and respondents engage in a formal interview. The interviewer develops and uses an 'interview guide' which is a list of questions and topics that need to be covered during the conversation, usually in a particular order. Although the interviewing follows a predetermined order, this method ensures flexibility in the way issues are addressed by the informants. Semi-structured interviewing is best used when there is a likelihood that the interviewer might not get more than one chance to interview someone. Usually, the interviewer has a paper-based interview guide that he or she follows and since semi-structured interviews often contain open-ended questions and discussions may diverge from the interview guide (given the flexibility to the interviewee), it is general practice to audio-record interviews and transcript these tapes for analysis. While it is possible to

try to jot notes to capture respondents' answers, it is difficult to focus on conducting an interview and jotting notes. This approach will result in poor notes and also detract for the development of rapport between interviewer and interviewee if it is the first interaction between them. If audio-recording an interview is difficult, often notes are jotted down but often with the help of a note-taker. The benefit of a semi-structured interview lies in the preparation of questions ahead of time. This allows the interviewer to be prepared and appear competent during the interview as well as cover the topics required in the interview aim. It also allows informants the freedom to express their views in their own terms and can provide reliable, comparable qualitative data (Britten, 1995, Aira et al., 2003, Longhurst, 2003, Barriball and While, 2006, Cohen and Crabtree, 2006).

The exploratory study uses semi-structured interviews to address the pre-determined objectives in this study stated in section 5.2. This method is also chosen to allow flexibility in the way participants could answer the questions. There was also likelihood that the researcher might not get a chance to interview the participants again. This was due to evidence from literature that there is a high rate of attrition in peer education projects and also there was limited chance for the researcher to visit the field owing to the distance between India and the UK. The following gives more detail on conducting the interviews.

5.3.4 Conducting the Interviews

In total twelve semi-structured interviews were conducted. The interviews lasted approximately an hour each. One interview was conducted at the researcher's temporary office in Kolkata. The rest were conducted in their individual DICs. Informed consent was taken from all the participants before conducting the interviews. This practice was maintained in the later processes involving focus group discussions, game design workshops and evaluation. The respective information sheets were translated in Bangla and read aloud to each participant and group respectively before they gave the written consent. A copy of the respective information sheets were given to the participants in Bangla (the local language) and in English and as well as to MANAS Bangla project office (the main office) and the three DICs as stated earlier. The interviews were in Bangla and audio recorded with informed consent with participants given a number instead of their name in the audio. Data was transcribed in Bangla by a transcriber and analysed according to themes. An inconvenience allowance was provided to the participants at the end of the sessions and they were

informed that they could withdraw at anytime during the course of the interview without having to give any reason for withdrawal. This practice was maintained throughout the course of the research study. The baseline interviews focussed on collecting data on the roles, challenges and practices of MSM peer educators in Kolkata; the key learning needs of peer educators; and the background of the MSM peer educators in relation to the use of SMS, mobile phones and mobile/computer game playing. The aims of the interview were to:

- a. To explore, identify and describe the roles, challenges and practices of MSM peer educators in Kolkata.
- b. To identify the key learning needs of peer educators.
- c. To investigate the background of the MSM peer educators in relation to their use of SMS, mobile phones and mobile/computer game playing.

5.3.4.1 *Outline of the Interviews*

The interviews were used to explore, identify and describe the roles, challenges and practices of MSM peer educators working with MANAS Bangla. This was done in the first half of each of the interviews. The second half of each of the interviews were used to identify the key learning needs of peer educators which was used in two focus group discussions to develop the storyline and simulated scenarios of the SMS game. The following section will first look into peer education, followed by responses to the questions asked during the interview to assess the participants' likelihood to use mobile phone and SMS.

5.3.5 *Ethical Considerations*

The interviews were conducted with voluntary participation and informed consent of the peer educators, with information being given in writing and read aloud to each participant. Confidentiality was maintained at all times, participants were assigned a number for anonymous identification in notes. As mentioned above, ethical approval for the study was given by the University of Nottingham Medical School and cleared with participating organisations in India.

5.4 Analysis

5.4.1 Thematic Analysis

Data was analysed thematically. Whilst some authors consider thematic analysis as a broad approach used within wider theoretical approaches, Braun and Clarke (2006) describes thematic analysis as an approach in itself (Ritchie et al., Forthcoming, from Personal Communication with Spencer, L.). Spencer (2012) defines framework as a data management tool and as a measure of suitability poses a question ‘will the act of summarising be useful?’. Framework was developed for theme indexing for managing large amounts of data. This study used twelve semi-structured interviews and the interviews served two purposes of (i) exploring MSM peer education and (ii) feeding information for the game design process. Thus framework was not used on this occasion for managing the small amount of data. The data analysed for the exploratory purposes were analysed thematically.

Braun and Clarke (2006) describe thematic analysis as a method for identifying, analysing and reporting patterns of meaning. It illustrates which themes are important in the description of the phenomenon under study (Daly et al., 1997). The end result of the thematic analysis reveals the key considerations of meanings present in the dataset (Spencer, 2012). A theme refers to a specific pattern of meaning found in the data. It can contain manifest content, that is, something directly observable such as mentions of a phenomenon across a series of interview transcripts. Alternatively it can contain more latent or implicit content. A further important distinction in terms of demarcation of a theme is whether it is drawn from a theoretical idea that the researcher brings to the research (that is, deductive from the research question) or from the raw data (that is, inductive). The ‘keyness’ of the theme is not simply a matter of recurrence but of relevance to the research question (Joffe, 2011). This study used semi structured interviews with pre-determined questions to explore MSM peer education with flexibility to the interviewees to express themselves as is the nature of semi-structured interviews. The data was analysed thematically using these pre-determined themes and additional themes were added as and if they emerged. The following is the description of the findings using thematic analysis.

5.5 Findings

The following gives the findings from the exploratory study. The interpretations from these are stated in the next section.

5.5.1 Who is a Peer Educator at MANAS Bangla?

In the interviews the participants described a peer educator in variety of ways. However the common themes were that a peer educator is “a good friend...not just because of HIV prevention but through thick and thin...because there’s lots of a hazard in the field like police harassment, harassment by local goons and so on. A peer educator is “someone who is unselfish and stands by you”. Others added that a peer educator is someone who has communication skills, and someone who should have a leadership skill.

5.5.2 What do the participants understand by Peer Education?

Described by the participants peer education is “basically spreading HIV/AIDS awareness”, “approaching people”. Participants added that a peer educator’s job often overlaps with supporting administrative works at the DICs which includes distributing medicines, maintaining log books as well as helping other peer educators. These are not included in the peer educator’s job description.

5.5.3 What are their current practices?

Participants had a consistent view that there is a monthly target which includes building rapport in the field not just for HIV prevention awareness but to build a friendship with peers or fellow MSM in the field or site of outreach work. Peer education includes describing the services provided by MANAS Bangla to fellow MSM, talking about STI and arranging STI treatments, providing condoms, identifying “community people” i.e. MSM as MSM is a “hidden population”; know how many partners they have, how many times they are having sex, motivate them to visit the DIC and volunteer for blood testing for HIV, doing advocacy for MSM with different stakeholders from general population to those who harass the MSM.

All the peer educators agreed that having a conversation such as chatting with friends makes dispersing or gathering information easier otherwise they can be seen with suspicion, their motives questioned and sometimes getting labelled for example as “blood suckers” (because they promote and arrange giving blood samples for HIV testing). In this regard IP3 (participants shall be anonymously referred to as IP1, IP2, IP3, etc) added that peer educator is just a designation as his/her job involves chatting the same way as s/he does when cruising as a MSM.

5.5.4 How are they trained?

Participants added that there is no training provided at the start of the job. Training is ad-hoc as per the project schedule and the funding available. This theme can be seen as summarised by IP1 who reported, 'I joined on 21st December, went out to work on 22nd December. I had no training. My supervisor...told me, my first field was at a zigzag bathroom cruising site...Gave me some leaflets...condoms...I was told that I should go there, try and build a rapport with the people there, build a friendship, try and learn about their problems and they gave me some papers...Basically, I myself also did not know much about HIV, STI. But at first I worked based on my basic knowledge on HIV and common sense'. Although participants acknowledged that '...gradually, MANAS Bangla gave lot of training. Other than that the counsellors, supervisors who work at MANAS Bangla gave me information on HIV, STI, held workshops, trained me' but they added that at the beginning when they are not familiar with concepts like gender, peer education, rapport building, HIV/AIDS, STI it is confusing to get a grip of the training provided or what they were about. Participants also added that it is difficult to ask questions in the workshops provided even if they had pending queries. The reason being that there is too many people or that it is embarrassing to ask questions repeatedly or the fear of being mocked by fellow participants. Thus concepts are 'somehow' but not fully clear to the participants after the workshops. Participants also added that 'there's new information every day but they are not readily available. If these could be made readily available it would be much useful to do peer education'.

Participant IP3 added that many peer educators ask him/her for advice as s/he is an experienced peer educator and also to teach them how to build rapport in the field seeing his success as otherwise they are not aware of the best ways to do things.

5.5.5 Challenges they face?

In the interviews the peer educators mentioned many issues and challenges they face. This included harassment and abuse in the locality, from police, from local disreputables best described as 'hoodlums' or 'goons', workers in the train stations where they conduct outreach work, and from local 'dada' ("macho men") looking for female prostitutes.

Instances include extortion of money (e.g. to work in an area), pickpocketing, forced sex, and both physical and verbal abuse. Due to their work the peer educators also

mention issues with friends and neighbours “Neighbours do not talk, they think we will transform their sons to effeminate males.” “...people tease us as ‘buggers’, ‘buladi’ [that is the female mascot for HIV prevention in West Bengal] or physically touching us.” “My friends from my locality do not talk to me because I talk to effeminate males.” The peer educators discussed strategies to avoid these problems (e.g. advocating their work with local organisations, how to explain their work to local police, etc), but also a need for support in experiencing these situations “When harassed, peer educators often feel lonely and helpless if he cannot do anything about it.”

A significant proportion of the issues faced related to their work with MSM in the field. These were issues like how to engage with new clients, motivation techniques “one who doesn’t want to live cannot be motivated to listen about the risks of HIV/AIDS”, friendship and rapport building and how to capture and maintain the attention of clients. Points raised also included how to counsel and support their clients, such as resolving fights and conflicts, understanding when is a good time to talk about HIV/AIDS and acting as a friend “Because I am a peer educator, I am a ‘friend’. Because I am a friend, I need to take responsibility of taking my friend to the doctor in case he is sick.” It also included difficult situations such as how to deal with questions they don’t know the answers to and what to do when clients were under eighteen. Other issues experienced in the field included dealing with Male Sex Workers (MSW), and being mistaken as MSW themselves, and dealing with MSM at massage parlours where the owners are not cooperative. Again the issue of support was mentioned that “it is depressing as a peer educator when clients do not use condoms even after months of advocacy with them”. Knowledge of appropriate behaviour and methods was also brought up, in that peer educators should know not to solicit or flirt (or *bhel kora* as in MSM terminology) during their work, to protect themselves from harassment, and that it is important to bring clients to DICs without alluring them or coercing them just because they are friends.

Finally a range of comments directly related to training or lack of knowledge, such as how to fill in the “peer card”, and knowing what is going on in the office and the problems other peer educators face. How to prioritise time was mentioned, who to ask for clarifications during workshops; “if things are unclear as workshops usually have many participants and limited time”. On-going support was also an issue; “what to do when clients ask something we do not know answer to?” and fundamental issues such as “what is ‘education’ in peer education?”

5.5.6 Organisational Support

Not necessarily challenges in the field but relating to their role and positions as peer educators another category of issues raised were centred on the organisation; the staff and organisational practices. It was mentioned that the outreach workers often do not support the peer educators well “When harassed by the *dadas* to have sex with them, sometimes even if the ORW know about it, doesn’t do anything about it. They just come to see if the peer educator is present in the field”. It was also mentioned that peer educators can have rivalry and competition between each other including “teasing or humiliating another peer educator, verbal harassment at office (DIC) on a regular basis” and competition over established clients in a peer educators’ regular area of work. Within the office, peer educators felt they often had to work outside their job description, and that they were also treated badly when clients missed ICTC appointments whilst not having phone bills, etc. covered in order to give reminders. Similarly due to a limited travel allowance it is not possible to travel to all required sites even if they know that clients need condoms there. Another factor was targets; MANAS Bangla often sets up targets to be reached by the peer educators, and successfully met it feels great but otherwise it is de-motivating.

5.5.7 Assessing participants’ likelihood to use mobile phones

This section details the responses of the participants to the interview questions relating to their likelihood to play an SMS based game. The questions aimed to establish when and how the MSM peer educators would play the game as well as their general attitudes toward SMS, mobile phones and mobile/computer game playing.

5.5.7.1 Hours you would Prefer Playing the Game

Figure 5.1 shows the hours of the day each participant indicated they would prefer to play the game, with hours across the horizontal axis and each participant’s response shown on the vertical axis.

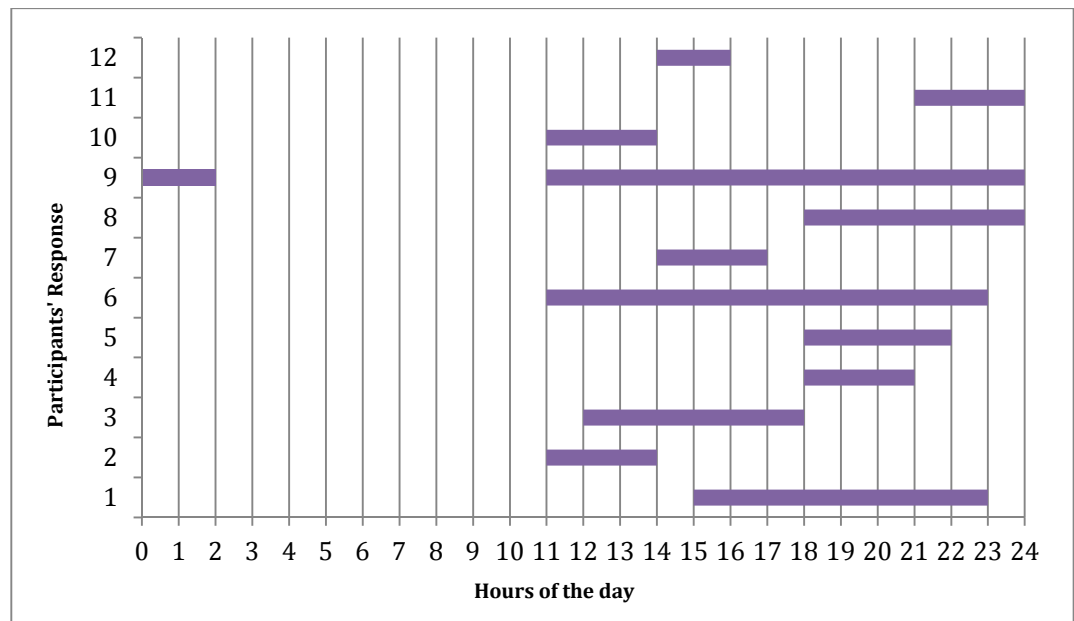


FIGURE 5.1: HOURS PARTICIPANTS INDICATED THEY WOULD PREFER PLAYING THE GAME

Most participants reported that they were prepared to play between the hours 11am to 11pm with two participants indicating up until 12pm. Interview Participant 9 (IP9) stated that he wants to play from 11am to 2am in the morning.

5.5.7.2 Do you use Mobile Phones for Personal Use or Professional Use/Do You Like SMS

All participants informed using the mobile phone for both personal and professional use. On being asked if the participants liked using SMS, three participants informed that they do not. It should be noted here that one of this participant who was later involved in the focus group discussion reported loving to use SMS. It can be said that at the later stage the game was much clearer to the participants and they were keen on being involved in the later process of the game. It is to be noted that as the data collection progressed, it was observed that the participants were concerned about getting selected in the research although it was repeatedly explained that the research involved opportunistic selection of samples and in no way had any implication over the participants' ability or skills as a person or a peer educator. However, during focus group discussions and game design workshops, the participants were observed to be discussing amongst themselves if they were selected during the interviews or focus group discussions respectively.

Two of the participants reported that they liked using SMS. Some of the other responses included, feeling 'OK' about SMS but rather reply to a SMS than initiating a SMS by her/himself. Similarly participant IP3 reported that s/he prefers replying to

an SMS and added that it is not possible to compile every word of what s/he wants to say in a one liner SMS. Another participant replied that he prefers calling than sending an SMS as the latter is more expensive. Participant IP5 reported, 'good, communication is essential, SMS helps in building relations, it is helpful' while IP6 added, 'Good, it's fun!'. Lastly IP7 reported that he likes doing SMS but if the network does not work, it gets him angry.

5.5.7.3 *How Often Do You SMS*

Six participants reported using SMS occasionally with one participant adding that s/he frequently uses SMS during festival time or to communicate with her/his "husband", that is, lover assumed as husband as same sex marriage is not allowed in India. Two participants reported using the SMS rarely while another two reported using it frequently with one emphasising using it more during festive seasons to send wish friends. Two more participants reported not being able to SMS. Among these one of the participants was illiterate while the other participant reported having multiple degrees. It was generally observed by the researcher that some people in Kolkata were reluctant to use SMS. It was felt that the concept of having to write through a phone was a challenging idea when a phone is traditionally an instrument for conversation only.

5.5.7.4 *What language do you use to SMS*

All the participants reported using 'Bangla' in English alphabets as their language of texting except the participants who reported not being able to text. It is to be noted that one of these participants explained that he cannot read or write SMS properly and is a rare user of SMS. It is the same participant who later in the research reports that he loves doing SMS. Three of the participants reported using English as the language to SMS while four reported using 'Hindi' in English alphabet as their language for texting.

5.5.7.5 *Have you ever played games on mobile phones or computer games*

Six of the twelve participants reported having played mobile phone or computer games with one mentioning that he likes playing games on mobile phones, while another adding that he has played less games on computers but enjoys playing games on mobile phones. In total four of these participants confirmed liking playing games on the mobile phone. The other six reported not having played games on mobile phones or computer with one adding that he finds it "boring".

5.6 Interpretations

5.6.1 Meaning of Peer Education and Role of the Peer Educators

The peer educators described themselves as being a ‘good friend’ and being ‘unselfish’ and having communication and leadership skills. They described their roles as ‘spreading HIV/AIDS awareness and approaching people and supporting administration in the DICs. They also added that their roles are to reach monthly targets of the DICs and describe to MSM clients the role of MANAS Bangla, arrange treatments, distribute condoms and to identify other MSM from the hidden population. This shows that the participants see peer education as providing services and goodwill, building community solidarity through advocacy and rapport with the community. This is more a reflection of the peer educators being there but not prominent about influencing positive behaviour change or thinking critically about the situations they face. They seem knowledgeable about HIV/AIDS information and MANAS Bangla mainly but do not mention sharing knowledge about outreach work with other peer educators.

5.6.2 Perspectives in Trainings

The peer educators mentioned that training provided to them was not organised to meet their needs as per their requirements or when they required it. Thus often the peer educators had to start their jobs without any training into what peer education is about and often had to make do on their own initiatives, for example, by asking a more experienced peer educator. Their asking for help was also problematic as even in workshops it was difficult to ask questions.

5.6.3 Challenges of being a peer educator

The peer educators reported having difficult working environment. This includes harassment from police and local hoodlums and extortion for sex and abuse. Also prejudice from their neighbours and friends in the locality they live for being or working with effeminate males. They mentioned not knowing what to do with difficult situations and how to engage people in different circumstances. The difficulty of the role of a peer educator was mentioned as obligations to help people who are unwell or in a difficult situation in the role of a friend as a peer educator. They also mentioned not knowing an appropriate behaviour between being an MSM and a peer educator simultaneously. For example, not being sure of soliciting or flirting while working as a

peer educator. The issues of support within the organisation (MANAS Bangla) were also mentioned. This ranged from not knowing how to fill in paperwork and who to go to for additional help.

These comments expand on the reports from literature where it was mentioned that peer educators have difficulty relating the training given to the practical realities on the ground. Dealing with clients as peer educators featured as an element in their feedback, not knowing how to deal with situations and appropriate behaviour of a peer educator. They also mentioned a range of wider issues such as dealing with abuse, discrimination and prejudice in their daily lives, and difficulties of working within the community based organisation were mentioned. The challenges of being a peer educator are thus not simply challenges in performing duties, but also the problems within their lives as a whole, particularly as MSM themselves.

Given the problems and the challenges they face this supports the findings in the literature that peer educators found it difficult to relate their training to the practical realities of being a peer educator; they needed a wider knowledge base than just imparting HIV/AIDS information. The peer educators face more problems than the literature documented. The reports also reflect the peer educators' conflict between trying to be a role model and the reality and constraints of their situation. They also do not show confidence in being motivating or empowering (enabling or giving someone the ability to do something and encouraging).

5.6.4 Organisational Support

The support to peer educators within the organisation (MANAS Bangla) was a topic discussed by the participants in several ways. The impression was that the organisational attitude was not supportive or collaborative, with peer educators lacking support for things like phone call expenses; and having to take the blame for clients not attending appointments; and outreach workers ignoring abuse towards a peer educator and problems of peer educators when they see it in the field.

5.6.5 Peer Educators' Tendency to use Mobile Phones and Attitude to SMS

The peer educators were keen users of mobile phones. They mentioned being comfortable with SMS though not entirely confident. In relation to playing the game, they expressed preference for playing it in the evening. They also mentioned using roman texts for writing in Bangla (language). In relation to playing digital games there

was a mixed response including not having played and finding playing boring to liking playing.

5.7 Limitation of the Study

This study was conducted over a particular time window and the structure of MANAS Bangla changed over the duration of the research. Further exploratory studies were not conducted to affirm/refute the findings in the light of the organisational changes.

This study did not cover all DICs in West Bengal and only showed views of MSM based in urban India.

This study did not do an in depth exploration of MSM peer education and was limited by the need to collect data for designing the game.

5.8 Conclusion

The baseline study provides a backdrop for the peer educators working with MANAS Bangla, it has introduced MANAS Bangla as a network of MSM organisations working in Kolkata, India and given an overview of the organisational structures and individual DICs where the peer educators' work. Through semi-structured interviews and a framework analysis of the transcripts, it has looked into the peer educators roles and challenges at work. The chapter has described in brief the view of the participants about peer education, the role of the peer educators and the training they receive. An outline of the issues and challenges they face has been given, though this serves as a starting point for further detailed examination that will take place during the game design process the next chapter.

As seen in the literature review, one of the issues in peer education has been training that does not reflect the on-the-ground experiences of the peer educators. The participants reported that they are often recruited on the basis of their already existing rapport in the field or the number of people they know. In practice often they are sent to the field with just a short verbal briefing and a few leaflets when they start work and this is without proper training. Training programmes are often scheduled as and when the NGO schedule and funding is available and not as per the needs of the peer educators. The training sessions were described as being often overcrowded where participants either did not find time/opportunity to clarify their queries or did not feel comfortable asking question in front of others because of their previous experience in

such sessions where participants were sometimes being laughed at for asking questions.

Other issues include problems with identity. Participants reported that the training were given on rapport building, nonetheless they still find it hard to approach or talk to clients, especially if they are *panthi* based MSM working in a majority *kothi* based population. This corresponds with anecdotal evidence given by one of staff members at MANAS Bangla who commented that the MSM discriminate against each other based on identity.

Two other themes emerged from the interview that had so far not been brought up in existing literature, first that was of dealing with the reality of delivering outreach work whilst suffering the discrimination and prejudice inherent with MSM in India. Peer educators and MSM regularly suffer violence and abuse, alienation and extortion, something that peer educators cannot avoid when having to work in set locations and becoming even more visible than usual. The participants mention their difficulties, strategies to avoid or deal with it, and also the emotional effects it had on them when feeling unsupported.

The second new emerging theme was that of working relationships between the peer educators as well as the larger organisation in MANAS Bangla. The relationships between peer educators reported often as in rivalry, for example issues with talking to another peer educators' clients in an area, in conflict, such as with DIC staff when clients miss appointments or peer educators fail to meet targets, or uncaring/unsupportive, such as ORWs seeing peer educators being abused but not doing anything about it. Other issues within this included dealing with poor resourcing/management at the DIC, where peer educators had to work outside their job description to get things done, or that expenses were not able to be covered to allow them to work effectively. These kinds of problems and experiences are characteristic of what has been described as the 'messy reality' on the ground.

Switching focus on to the second purpose of the interviews, it is now possible to revisit the initial rationale for using a SMS based game intervention on mobile phones in this particularly marginalised group. The information so far shows that the peer educators are familiar with and not adverse to SMS and there is a high rate of ownership of mobile phones amongst the peer educators, but, there is low level of literacy among some of the peer educators. Using a game based learning content limited to 160 characters of an SMS can potentially engage the participants due to the

brevity of content. In addition, this chapter reflected the earlier findings from literature; peer educators are mobile, visiting a number of locations, and often overloaded with work; their trainings are ad-hoc and it is often difficult for them to ask questions in the training. Further it has been reported that new information is available in the field every day but not made available to the peer educators. An SMS based intervention has a potential to change or adapt content quickly, is mobile, personal and can be made available anytime and anywhere.

With the potential for an SMS based intervention established, it is possible to consider also some of the possibilities and challenges that this might present. This chapter showed that the experiences and areas of work vary between peer educators either due to their MSM identity or different locations such as the north and south of Kolkata. Engaging participants with varied background and experience in a participatory and iterative process may help develop (a) an enriched and varied game content; (b) provide the participants with opportunity for dialogic learning through discussions in workshops. Sharing of experiences may further provide an understanding into different ways of approaching a problem/situation.

Nonetheless, some of the anticipated challenges given the description in this chapter maybe that the MANAS Bangla primarily being a Koti based intervention may lead to game content being unrepresentative of all the MSM. This may lead to participants' not finding the content relevant. Additionally, this chapter identified the range of educational levels which may result in some participants finding it easier/more difficult than others to participate in the design or play the game. Also was observed the fact that everyone cannot SMS, therefore selection of participants can be problematic as this may bring only certain groups of peer educators although the endeavour is to have a mix of different peer educators and their experience.

5.8.1 Implication of the Findings

The information gathered through the baseline study, including the organisational issues and individual comments and concerns of the staff at the DICs and the peer educators themselves has revealed another range of factors that complemented the issues already seen throughout the literature review and has provided some real examples of this in practice.

The particular issues in this context revealed a greater level of support was required than indicated in the literature, representing the reality of outreach work in practice.

These requirements included the issues relating to the skills and abilities of the peer educators working within MANAS Bangla, such as punctuality, and skills of teamwork and collaboration. Tensions and conflicts were also mentioned, between the staff of MANAS Bangla, and the peer educators as well as issues relating to prejudice between the peer educators and other members of the MSM ‘community’, especially between people with different MSM identities.

This information is used in addition to the material from the literature review as a base to critically look into the participatory game design process in the next chapter leading to the development of the game.

CHAPTER 6. Game Design Process

6.1 Introduction

The previous chapter reaffirms the rationale for using the SMS based game which was argued in the initial chapters. These chapters establish that an SMS based game provides a potential opportunity to support peer educators training and support needs. This will inform research in M4D and peer education which have been seen to be in need of theory based interventions and a richer account of participants' feedback.

6.1.1 Aim of this Chapter

Chapter 4, Section 4.4 mentions the use of participatory design using an iterative process. This chapter aims to detail the participatory design process resulting in the game that is finally trialled. To reiterate here that this is a pilot project to evaluate the value of such game for the purposes of supporting MSM peer educators in India and as a pilot the researcher makes best use of the resources available that acknowledges that the solution is not ideal or the ideal that would be achieved through a development of a full scale solution. This chapter critically looks into the game design process taking into account the Indian marginalised and resource constrained context in using an essentially western participatory design. A western participatory design indicates to the Scandinavian concept of design where designers, users and stakeholders participate in co-creation of a product. In a marginalised and resource constrained setting this could be challenging to achieve since it relies on assumptions that communities are democratic, have high literacy rate and that there is a reasonable technological infrastructure in the community, that people are aware of/have access to technology and are able to use it. There is also an assumption in participation that the social hierarchies are not strong (Puri et al., 2004, Hussain et al., 2012). In this case an existing game is re-appropriated to supplement the peer educators training using a participatory design. In doing so, the next sections will first critically look into the methods of focus group discussions and game design workshops that are used for the iterative process of the design. Next it will describe the process. Finally it will critically analyse the process with regard to the points made above. The aims of the activities documented in this chapter are to:

1. Determine the broad parameters of how the game was customised, such as hours and duration of play.

2. Develop the storyline content for the game, including game locations and events that take place.
3. Establish suitable content for the specific missions, dilemmas and objects encountered within the game.

Before describing the process for the development of this particular project the chapter will first describe the existing game, the Day of Figurines as also mentioned in Chapter 4, Section 4.4. This information will help understand how this existing game was re-appropriated for the peer educators.

6.2 Description of ‘Day of the Figurines’

6.2.1 Overview of the Game

Day of the Figurines was created in 2006 as a multiplayer game played using text messages on mobile phones. The game is set in a fictional town and the story and gameplay unfolds over a twenty-four hour period in the life of the town but is played over twenty-four days in reality with one hour of the town representing one day of the gameplay. A board is used to represent the town and the players location in the town throughout the game. At the start of the game each player registers to the game engine and chooses a figurine which they name and characterise anonymously. The players subsequently control their figurine via SMS directing their movements through different destinations in the fictional town and actions such as interacting with other figurines, encountering events, finding and using objects to resolve dilemmas and undertake missions. The story that unfolds is that of an Arabic speaking army who arrives into a typical English town, and the players have to make decisions in relation to the arrival of the occupying force over the twenty-four days of the game play. The work in part portrays England’s recent imperial adventures where players from non-Muslim countries in general are invited to think about what it means to have such a situation unfold for them (Adams, 2008).

6.2.2 Key Game Features

The following diagram Figure 6.1 shows how the game system operates. The game engine is where the storyline is authored of the fictional town with destinations, events, dilemmas and missions. The game engine is the computer software upon which the storyline is authored. At the start of the game each player is asked to choose a figurine which represent them in the game. The figures are placed on a physical game board representing the map of the fictional town. The figurine chosen

by each player moves virtually around the town via SMS instructions sent by the player. A physical board representing the fictional town is displayed at a chosen location which can be the place where the players physically registers to the game. A game operator can move the figurine on the board as per the players SMS to the game engine. The game board therefore provides a physical representation of the game as it is played over time, though it is not necessary for players to actually see it during play; they can play from anywhere anytime as per the hours when the game engine is on for the game play.

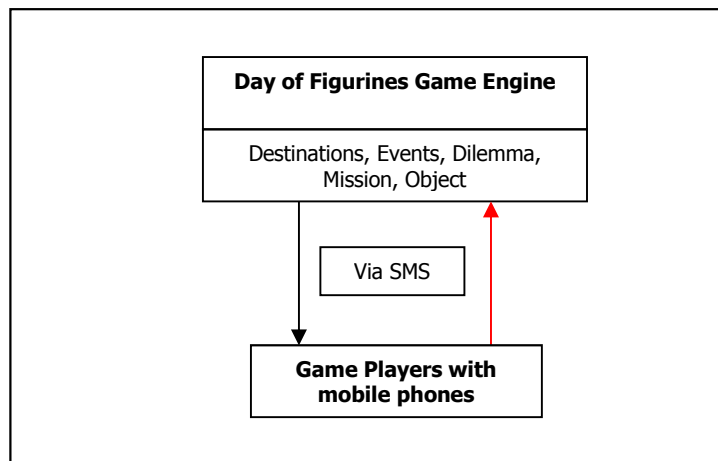


FIGURE 6.1. DIAGRAM OF GAME SYSTEM

Destination

Moving from destination to destination is one of the main game features of the game (Adams, 2008, Blast Theory, 2008). The fictional town is a typical English town and has fifty-five destinations. The players control and move the figurines via SMS, which moves around the town facing dilemmas, missions and local events.



FIGURE 6.2 SNAPSHOT OF PLAYERS REGISTERING FOR THE GAME AT A LOCATION WITH GAME BOARD REPRESENTING THE FICTIONAL TOWN

Events

Events are linked to a time or a destination in the game and are represented by pre-set messages sent to players by the game engine. Events take place at a particular time and can include one or more destinations.

Missions

Mission is a task set to a player/players at a destination or time. These need to be completed within a set time monitored by the game engine according to the storyline authored. Accomplishing a mission usually involves taking an object and using it at the right place, time or person (another player/non player character featured in the game). Accomplishing a mission effects your score (health) in the game.

Dilemmas

Dilemmas are similar to mission in as much as that they are given to a player/players at a time or destination. These are usually set of choices a player/players can make and are intended to pose moral dilemma to the players.

Objects

Objects are items that can be used by players in the game. Players have to find these objects and pick them up and then use them. Objects can be singly used and can then disappear or can be used multiple times.

Health

Each player of the game has a health score which is affected by their actions in the game. Health gradually replenishes over time, but when it reaches zero the player is out of the game.

Communication between players and the game story (engine)

The game has particular rules to play and is played through sending and receiving messages using specific keywords (Adams, 2008) such as GO, SAY, FIND, PICKUP, USE, HELP to go to destinations and speak to other players and do missions and dilemmas.

The players can talk to each other at a particular destination via SMS by visiting that destination. To talk to another player they keyword SAY is used, e.g. SAY Hello. The players are always interacting via the game engine and storyline and not directly between individual phone numbers. Thus playing the game is in effect interacting with the game engine (storyline).

6.3 Pedagogical Rationale for Using the Game

Before looking into how the game was modified for the purposes of the peer educators learning and support needs and critically looking at participatory design in a resource constrained setting, this section will briefly reiterate the rationale for using this game for supporting the peer educators. Recommendations from the literature in Chapter 2 Section 2.5 show that peer educators need a wider knowledge base and a more collaborative and dialogical approach to imparting knowledge than just imparting HIV/AIDS information. For example, they need to develop confidence and critical thinking power; develop communication and group work skills; share experiences and pass on lessons learnt. A successful peer education programme needs to provide peer educators with a context in which they can collectively renegotiate their peer identities and feel empowered especially in the marginalised MSM community. The peer education programme should enhance self respect and autonomy of the peer educators; mobilise the peer educators through sensitisation, raise their critical consciousness and make them more empowered.

Reviewing the pedagogical approach to training peer educators in Chapter 3 Section 3.3 shows the pedagogical strategy to support peer educators needs their training to focus on techniques that can be used to engage their audience in problem solving

dialogue about behaviour change and associated socio-economic and psychological barriers; sharing of the experiences between the heterogeneous MSM groups, which can be an important stepping stone to support and share their learning and empowering them, raising awareness and consciousness; and developing mutual support and a sense of belonging to a community with shared goals and issues.

Having conducted a baseline study to explore peer education as experienced by the MSM peer educators of MANAS Bangla, the findings confirm the literature, and further add issues experienced on the ground, such as dealing with the discrimination of MSM peer educators, difficulties within the resourcing/organisation of the peer education programme and relationships between and amongst peer educators and the supporting staff (such as outreach workers, other members of staff at MANAS Bangla) among others. These further highlight the issues to address the needs to support the peer educators.

Having introduced the key features of Day if the Figurines in more detail, it can be seen where the opportunities to exploit the game for a mobile learning intervention lie, and so the rationale for using the game can be elaborated in relation to the established needs, referring back to Section 3.2:

- a. Peer educators need wider knowledge base and more collaborative and dialogic approach to imparting knowledge than just imparting HIV/AIDS information*

This can be done through both participation in the game as a multiplayer experience and also participation in the game design process which will involve Focus Group Discussions and Game Design Workshops.

The game simulates the experiences of a number of peer educators from the different Drop In Centres of MANAS Bangla providing them opportunities to play out a variety of scenarios. The scenarios are designed in collaboration with different peer educators in multiple workshops on game design (focus group discussion and game design workshops). The workshop themselves are opportunities to exchange views. In addition players of the game can chat with each other and consult about the game or what choices to make facing dilemmas or what to do about a mission. This builds a dialogic and collaborative process to developing a wider knowledge base. This comes as a contrast to the reports from baseline where the peer educators reported that they are sent to the field with little knowledge about what to do and left to deal with

dilemmas at field by themselves. Moreover they find it difficult to ask questions in training workshops in fear of being laughed at. The anonymity of the players in the game provides a safe environment to ask questions/say what they want.

b. Develop critical thinking power

The missions and dilemmas of the game provide the opportunity for experiencing real life scenarios based on content provided by multiple peer educators addressing the same issues. The peer educators can be constantly engaged in a dialogue and improve their problem solving skills and critically analyse a scenario through their participation in designing and playing the game. The dilemmas particularly will confront the players with problem situations and the consequences of the decisions they take in response. The missions will similarly highlight the outcome of completing or failing to complete a task. This provides the opportunity for the peer educators reflect on their actions and think critically. Hypothetically, this practice in turn might help them critically approach scenarios during their outreach work.

c. Develop confidence and technical competence such as knowing about risk behaviour change

Having little knowledge to deal with outreach reality and be an effective peer educator, playing a simulation game in real life experiences of peer educators, sharing experiences with other peer educators from different DICs, different experience would help peer educators gain knowledge on risk behaviour change, how to approach different clients with not just HIV information making them more acceptable (for example, even if they are *Panthi* based peer educator in a majority *Kothi* based client group) and confident.

d. Develop communication and group work skills

The multiplayer aspect of the game provides the opportunity to collaborate, communicate and network. The game content can be specifically tailored to necessitate such interactions. Bringing people together in the workshops during the game design workshop also has a similar aim.

e. Share experiences and pass on lessons learnt.

The participatory design process will use the peer educators' experience and take their judgement into account when creating the game content, ensuring that their experience

and interests are represented. Communication in the workshops is a strategy to share experiences and pass on lessons learnt. The game content to be used by different peer educators at a later time is also viewed as passing on lessons learnt from the field to other peer educators.

6.4 Participatory Design of the Game

6.4.1 Rationale

Chapter 4 Section 4.4 describes how participatory game design helps in bridging the gap between the designer and the players (Salen and Zimmerman, 2003, Ermi and Mäyrä, 2005). In this study this approach integrates the local perspectives and locally defined priorities of the peer educators as informants and provides feedback for development, enhancement and effectiveness of the SMS game, conforming to the reflexive, flexible and iterative character of participatory research approach. As well as informing the design of the game, this also allows the peer educators to exchange and gain knowledge and engage with other peer educators through the design process, and reflect on their own work and practices as part of the design process.

This method includes the participants' knowledge and understanding into the design of the game, as necessary within the theoretical priorities within both peer education, and the pedagogical strategy of adult education (Freire, 1970, UNAIDS, 1999, Population Council, 2000), that is, adults learn best when their own knowledge is put into practice.

The participatory game design process involved several iterations, initially to identify and prioritise key topics and subject material for the game through focus group discussions. The second stage undertook game design workshops to elaborate on the prioritised issues and further elaborate them into scenarios and the main game elements such as destinations, missions and dilemmas. Finally there were several rounds of testing and formative evaluation with selected participants taken from the peer educators as well as UK based volunteers with an understanding of the context and/or the game itself. The methods used in of the focus group discussions and game design workshops are described below.

To note here the limitations stated in Chapter 4 Section 4.4.4 that this game is an already existing game with set rules and game mechanisms. While this game seem to be closely conforming to the profile of MSM peer educators and the game features

correlate with the needs of the MSM peer educators and their environments as stated earlier, this also restricts the design scope within which the participants' can express and design their own solution thus problematizing participation. Wright et al. (1988) explain that no research is approached on a 'tabula rasa' or a blank slate. Participation in research can be problematized on the grounds that the researcher brings their agenda or priority aims for the research unless a particular affected group solicits the researcher and invites them to conduct a research to find a solution to a problem. Thus although participatory research intends to be a bottom up approach at the core it is initiated from a third party outside the affected group. This implies that participants may not truly be co-researchers and have as equal control and power over the research or the process as participatory research ideals state. However participatory research can be seen as a continuum with varying level of participation as different project allows (Spinuzzi, 2005).

The intention to use an existing game and scaffold the outcome in this way, that is the researcher providing a starting point to find a solution, comes from Freire's concept of critical consciousness relating to empowering the marginalised as stated in 2.5. It states that the highly oppressed find it difficult to think critically and propose alternatives to bring about change. Restricting the design scope can provide a useful scaffolding upon which the participatory design process can work as a catalyst to help the peer educators think critically and develop collaboratively the content of the game, which in turn will hypothetically help them think critically about peer education and its associated problems, have wider knowledge base by sharing experiences, develop confidence, technical competence, communication and group working skills where otherwise they may struggle to conceptualise what they want. This research is conducted in awareness that restricting the peer educators' freedom might limit their critical thinking power as they will only be thinking for the purposes of designing the game and not solving their wider issues.

Participatory design is fundamentally an iterative process (Spinuzzi, 2005). The iterations are used to identify and prioritise the relevant issues to be developed as content in the game. The following will give an overall critical view of the methods used in this iterative process, which is, focus group discussion and game design workshops. The methods used is used to elaborate on the prioritised issues and turn them into scenarios of the game.

6.4.2 Focus Group Discussion

The main purpose of focus group discussion is to draw upon respondents' beliefs, attitudes and feelings by exploiting group processes. The idea is that group processes can help people to explore and clarify their views and attitudes efficiently, and encourages participation from those who feel that they have little to say (Kitzinger, 1995, Freeman, 2006). As such this method is particularly apt in the situation where the MSM peer educators are lacking in critical thinking skills and are not confident with their issues in their marginalised situation.

The focus group discussions in this design exercise were used to prioritise pre-identified issues upon which to base the game content, consisting of destinations, missions, dilemmas, objects and events. These pre-identified issues were drawn from a list of phrases or paraphrases generated through the semi-structured interviews conducted previously at the baseline study.

Given appropriate preparation and selection of participants as outlined in Methodology chapter, the key element of focus groups is the 'focusing exercise'; an activity intended to stimulate discussion and thereby analysis and understanding of the meanings and norms that underlie the answers (Bloor et al., 2001). In this exercise a ranking activity served to stimulate discussion in order to prioritise key issues for use within the game content.

The most significant limitations when using focus groups relate to the construction of the groups, the personalities and opinions expressed. There can be a tendency toward normative values; that is that a group opinion may form around a particular 'normal' viewpoint, or that opinions expressed may be dominated by more vocal or forceful members of the group. (Kitzinger, 1995). Thus the researcher is required to take care in the composition of the groups and the facilitation of the groups with these considerations in mind, potentially exploiting these phenomena to further expose underlying issues and attitudes. (Smithson, 2000, Freeman, 2006, Krueger and Casey, 2009).

As discussed in the following, the two focus groups in this study were comprised of peer educators and outreach workers from MANAS Bangla from the drop in centres (e.g. Outreach Worker). The groups comprised of participants from different DICs of Kolkata. Thus the groups were constructed with participants who already knew each other, or had passing acquaintance, but were not pre-existing groups. This was

intended to provide a range of viewpoints, but also facilitate effective group discussion and share viewpoints from different DICs.

6.4.3 Game Design Workshops

The second element in the game design process were a series of game design workshops, intended to create the material for use as game content having prioritised the issues in the focus group discussions. The game design workshops consisted of two elements, paper prototyping of the game content itself, and a role playing/discussion exercise with the objective of further developing the scenarios and storyline and re-prioritising issues if needed.

Prototyping is a key element in participatory design (Spinuzzi, 2005), paper or 'lo-fi' prototyping allows rapid development of ideas and concepts, giving participants a 'hands-on' experience on what they are doing/developing. This enables participants/designers to relate more to the design tasks often allowing greater scope for criticism and to make alterations where they may otherwise be afraid to do so with a more elaborate design or prototype (Ehn and Kyng, 1991).

Role playing is also an established technique within the tradition of participatory design (Greenbaum and Kyng, 1991, Iacucci et al., 2000). The objective is to support situated and shared action and reflection and "create a common language, to discuss the existing reality, to investigate future visions, and to make requirement specifications on aspects of work organization, technology and education". As mentioned above, this provides a technique within the game design workshops to explore and develop the complex issues faced by the peer educators and understand how to effectively translate this into game content that reflects their experiences and also encourages reflection, dialogic learning, critical thinking and technical competence and the other factors necessary in the game design.

Similar to the focus group discussions, limitations to these techniques relate to the understanding of the outputs in relation to the group dynamics and normative bias. Further as mentioned above, participants can be unwilling to criticise the design where it is perceived that a significant amount of work has been put in, or is required for changes. Another limitation in the paper prototyping method is that users may not get an accurate idea of the finished or intended design, particularly when new technologies or concepts are being introduced. In this design process multiple

iterations are used, as well as game pilots with both the intended participants, and external volunteers to provide a range of feedback.

6.5 Overview of the Design Activities

Figure 6.3 shows the steps taken through the game development process. The 71 Phrases/paraphrases identified from the interviews were carried forward for discussion in two focus group discussions, prioritising fourteen issues each. Destinations related to these issues were also noted and then during two game development workshops they were narrowed down to a list of nine.

The second workshop focused more on developing the narrative of the game scenarios as per missions, dilemmas, objects and local events which were features of the Day of Figurines game, mentioned later in the chapter.

After the first iteration the game was authored and piloted in English with two groups of volunteers at the University of Nottingham, UK. Their feedback was incorporated into the game design, the content was translated into Bangla (the local language of the peer educators) and then it was iteratively tested on paper through two game development workshops and a pilot test in Kolkata.

Further refinement carried on and another trial was conducted in the UK with participants who had a working knowledge of Bangla and a clear understanding of the MSM peer educators' situation in India in relation to HIV/AIDS. Refinement of the content continued until final trial took place in Kolkata.

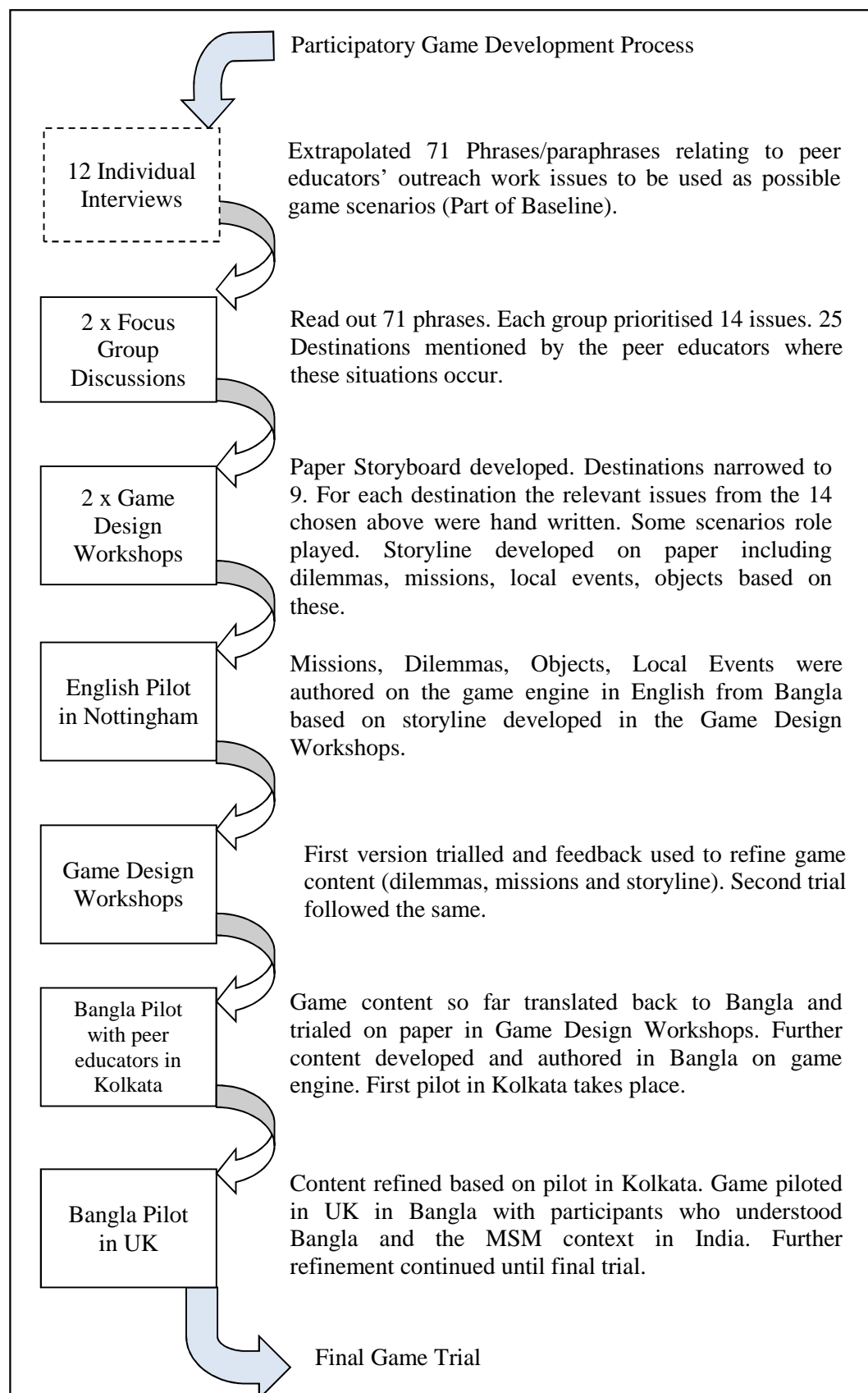


FIGURE 6.3. OUTLINE OF STEPS IN THE GAME DEVELOPMENT PROCESS

6.6 Modifying the Existing Game Features

The game development process involved replacing the current game content. This required defining destinations, local events, dilemma, missions and objects. This project modified the following list of game features to adapt it for the MSM peer educators:

- a. Storyline and destination names
- b. Description of missions, and dilemmas and their responses
- c. Description of local events, objects
- d. Description of the road to reach destinations and the hours of the day
- e. Welcome, end of game and error messages and reward structure
- f. Hours of play and the number of days for final game deployment
- g. Design and layout of the physical board
- h. Name of the game and contact for help

6.6.1 Criteria for Selecting Participants for the Game Design

The participants for the game design process were chosen based on their attitude towards SMS, particularly those who were more likely to use SMS. This was gauged during the semi-structured interviews as reported in the previous chapter. These participants were envisaged as likely future players of the SMS game during the final implementation of the game along with newly recruited participants. They were also likely to be part of the later game design process.

The previous chapter reported that the peer educators were keen users of mobile phones. They mentioned being comfortable with SMS though not entirely confident. In relation to playing the game, they expressed preference for playing it in the evening. They also mentioned using roman texts for writing in Bangla (language). In relation to playing digital games there was a mixed response including not having played and finding playing boring to liking playing. One participant particularly during the baseline reported not being able to deal with reading and writing SMS and added that he does not like using a mobile phone much but later reported loving to do SMS when it was known that SMS is an important part of the project.

Based on the responses to the specific interview questions, the hours of game play were determined and it was found that in general peer educators did use SMS. The participants for the following iteration were based on the criteria mentioned above,

that is, those who are most likely to use SMS. The following section looks explicitly into the issues highlighted by the peer educators as possible scenarios for the game.

6.6.2 Phrases and Paraphrases for Focus Group Discussion

Having identified the initial participants for the design process, the next steps were to conduct the focus group and game design workshops as mentioned in section 6.8. The interview data as mentioned in the previous chapter was analysed to explore peer education as well as the attitudes of the population towards technology and its use. The later part of each of the interviews aimed to collect data on the learning needs of the peer educators, the difficulties/problems/scenarios faced by them during their outreach work, and how they solved the problems they faced. Key phrases from the later part of the interview were identified and collated. This was done by listening to a audio taped interviews a number of times. Direct quotes from the conversation or paraphrased ideas were noted down comprehensively. There were in total 71 phrases/paraphrases identified from the twelve interviews. These notations included some repeated ideas and experiences. The phrases/paraphrases related to issues the peer educators faced, how they dealt with those issues, and topics where the peer educators would benefit from each other's knowledge. These phrases and paraphrases were read aloud to the respective groups during the focus group discussions. For example, 'when harassed the peer educator felt lonely and helpless if he could not do anything about it. Another example was, teach MSM (clients) how to use condoms. Ensure that those who know how to use condom uses condom. It is depressing as a peer educator when clients do not use condoms even after months of advocacy with them. Not all phrases were discussed in each group due to time constraint but it was ensured that each one was covered by one of the groups. The information generated in the focus group was used to initiate the first outline of the game storyline, identifying dilemmas, missions and events that occur, using them as a basis for the focus group discussions as described next.

6.7 Focus Group Discussions

6.7.1 Format

The focus group discussions took place in two sessions, the first session consisted of six peer educators and one Outreach Worker who is the immediate supervisor of a peer educator and a note taker. The second focus group was attended by seven peer educators, one Outreach Worker and a note taker. The researcher facilitated both the

Focus Groups. Participants were recruited from the three different DIC in Kolkata as per their availability. The peer educators discussed, took part in role play of scenarios and gave input to prioritising the themes during the discussions. Both note takers were briefed about the project before the sessions started. They had previous experiences of working with the MSM and occasionally they gave their inputs as well.

6.7.2 Overview

The outcomes of the focus group discussions were to ascertain the highest priority issues and especially to determine a set of potential locations to include in the game. These locations were used to prime the game development workshops where events that occurred at each location were investigated to develop into game content.

Reiterating the aim of the research, the phrases/paraphrases (such as *Mental support to clients*, *Theft – pick pocket* and *Harassment by local hoodlums*) were read aloud to the group of peer educators during the two focus group discussions. The peer educators were asked to state the topics they wanted to discuss. Papers were distributed to scribble their own notes if they so desired. The note takers were asked to note down the points that the peer educators prioritised. All peer educators were asked to choose as many topics according to their own preference even if others may not agree. It was explained that the topics prioritised by the peer educators during both the focus group discussions will be compiled and themes which will come out of these focus group discussions will be pulled out as themes for the mobile learning game. Upon discussion within the group, the peer educators recommended that they would like to listen to all the points and discuss them as and when they find them important. While reading out the phrases the peer educators pointed out their preferred topics in discussion with other peers or individually. They suggested that they wanted to mark the topics differently according to priority of choice, for example, star mark for topics of first preference, tick mark for topics of second preference et al. The researcher did so as and when told by the peer educators individually or in group. These points noted during a focus group discussion were re-read aloud in the same session for the peer educators to prioritise them as themes of learning needs for the game development, in discussion with each other in a group. The peer educators as well as the note taker provided input to this process. Appendix 2: provides a sample section of these focus group discussions showing how decisions were made. The phrases from those detailed in Appendix 1: were prioritised into fourteen issues by the participants from the focus group discussions as compiled below in Section 6.7.3.

During the focus groups, the participants from different DICs often had a different approach to a problem. This represented the characteristics of the peer educators and their clients or the population they served. The focus groups also provided a platform for dialogic learning between peers and critical thinking as they discussed and challenged each others' approaches. Dialogic learning and development of critical thinking was identified as a key element of peer educators training needs as stated in Chapter 2 section 3.6. The given example illustrates one such scenario. To find/capture attention of clients peer educators would mostly approach clients according to the training they have received. One peer educator added that he was older compared to the other peer educators and a 'Parikh' in a 'Koti' based intervention. It was difficult for him to engage with majority effeminate or Koti based clients and would sometimes allure his clients for sex and take them to a corner for a clandestine affair. While pretending to allure his client he would talk about using condoms and gradually shift the conversation to safer sex behaviours and HIV/AIDS prevention. This revealed that the group often had different knowledge and awareness of practices. Most group members did not find this method appropriate at all but some acknowledged amongst themselves that occasionally they did this as well while some participants were found to be not aware of the practice. This therefore provided a good example of how dilemma could be created from a scenario of how to approach clients.

Effort was made to allow as many people to put forward their input during these sessions however attention was paid to the time as well as the focus of the focus group discussions which is developing a mobile phone based SMS game. peer educators' discussions sometimes drifted to their dissatisfaction with MANAS Bangla and their Outreach Workers. The themes the peer educators prioritised in the focus group discussions are summarised as follows. Details of the prioritised themes can be found in Appendix 3:.

6.7.3 Prioritised Issues

Reported by the participants the main issues compiled from the fourteen issues identified in the focus groups are described below. The issues relating to learning and support needs were harassments, dilemmas faced while performing outreach work, dealing with adverse situations, additional duties assigned to peer educators outside peer education duties, requirements for additional field work skills and support needs. The peer educators mentioned a number of skills that they needed to gain or improve. These are highlighted in bold as they are described below. On occasions, the quotes

given below use Bangla terms sometimes specifically unique to MSM terminology. Best efforts were made when translating to keep the sense of the Bangla usage. Titles and grouping of the issues are those stated by the participants although they might not always look pertinent to the topic mentioned.

A. HARASMENT

POLICE HARASSMENT

The MSM peer educators reported being harassed by the police while doing outreach work. Examples of such harassment include, ‘why are you behaving like a girl?’ or a group of MSM are sitting and chatting in a park, the police will just come and harass them. Thus peer educators often have to advocate that it is not illegal to sit and chat in the park although homosexuality can be illegal. On other occasions, if any MSM clients of the peer educators are held by the police, it is the peer educator job to release the person out of that situation.

It is to be mentioned here that after the data collection which took place in the months of April-May, 2009, homosexuality among consenting adults was legalised in India from the month of July in 2009. The game scenario as developed during this first phase of data collection included constructing scenarios of the game where police harass the MSM peer educators given the illegal status of homosexuality in India. It can be assumed that now that homosexuality is legalised among consenting adults, such scenarios of harassment would not apply¹³. However, it should be noted that legislation takes time to get executed. Additionally, same sex behaviour among consenting adults has been legalised in private places but much of same sex activity in India takes place in public places such as parks, public toilets, railway station area, road side (cruising areas), canal side etc. Therefore, it is unlikely that police harassment will simply disappear due to the change in the law.

HARASSMENT BY ‘DADA’ OR LOCAL HOODLUMS/GOONS

The peer educators are often forced to have sex by the ‘dada’ or ‘gunda’ which can be best translated as ‘yob’. The ‘dada’ are more like the masculine figurehead of a local area, a sort of a self imposed gate keeper for the area. They often ask for ‘girls’ (meaning female prostitutes) from the peer educator. Often the reasons for such

¹³ The Hindu, 2009, Delhi High Court strikes down Section 377 of IPC, [online] available at <URL: <http://www.hindu.com/2009/07/03/stories/2009070358010100.htm>

harassment as indicated by the peer educator are that the cruising Kotis (effeminate males) or 'Hijra' (the third gender) often 'say that they have information about female prostitutes when harassed similarly by the dadas'. And since the peer educator reach out to the Kotis and Hijras they are likewise approached. Also, it is a popular belief that Kotis have information about female prostitutes (as they themselves are effeminate in character and look for 'men').

The peer educators reported that often their supervisors, the Outreach Workers know about these harassments but do not do anything about it other than just visiting the 'field' (peer educators' outreach work area) to supervise the peer educators' work .

HARASSMENT AT THE DIC

As reported by the participants, the staff often complain about peer educators not reaching their targets, not bringing in many clients to the DIC. On a particular occasion, the peer educators of one of the DIC were accused of not bringing in enough clients for a scheduled meetings where as the peer educator felt that the staff members came in so late that most of the clients had left by the time they arrived. Additionally, if clients miss a scheduled ICTC appointment, then the peer educator is shown displeasure by office staff. It is expected that the peer educators should call the clients, however, phone bills are not covered under the job. Additionally, the timing for visiting doctors at the DIC are fixed. If someone works during these hours it is impossible for them to visit the doctors. The peer educator also reported that ensuring the clients collect their blood test reports should not be the sole responsibility of the peer educators, the counsellors should also be involved.

The peer educators also talked about the hierarchy at work especially when HIV prevention is peer education based. The peer educators also talked of suffering from depression while humiliated by staff in the office (DIC).

HARASSMENT AT THE RAILWAY STATION AREA (INCLUDES IN THE TRAIN AND IN AND AROUND THE RAILWAY PLATFORM)

The peer educators reported being harassed by the station master and those who work at/are on the railway platforms. These included tradespeople, beggars, cleaners, people randomly living on/cruising railway platforms. Past situations included people forcing to have sex with them to station masters denying them to wait on the platforms. The peer educators often have to wait in the platforms to meet clients who commute by

train. Additionally, in the trains people try to lean on/touch/push/tease the peer educators (mostly if they are effeminate males). These people are often eager to start a fight if the peer educator retaliates.

B. DILEMMAS THE PEER EDUCATORS FACE

Due to limitations in the travel allowance, it is not possible to travel to all places where clients tend to need condoms. When clients are harassed they tend to avoid sites thus stopping the peer educators client reaching out (Each peer educator needs to reach out to sixty clients per month). Unfortunately, the peer educators cannot travel to visit these clients due to limited Travel Allowance.

Other dilemmas the peer educators are often faced with are the dilemma of whether to provide service to an under aged client who are below eighteen years of age. Often the local goons threaten the peer educators, abuse them but still the peer educators are required to visit the fields. The peer educators also face problems working with solely Male Sex Worker clients as they are often mistaken as a sex worker themselves. peer educators often face a dilemma when they do not know the answer to a question asked by the client.

According to new regulations under the state and national AIDS control societies, areas of work for each peer educators are demarcated. Each peer educator need to reach out to sixty clients per month and ensure services to clients who are registered. When another peer educator comes to work in the same area as one peer educator, the latter explains that the peer educators can talk to clients but cannot work. The clients are registered with the former peer educators. This results in creating completion between two peer educators. The peer educator reported that usually, most clients trust the peer educators who have ‘already been working’ in an area. One peer educator exclaimed that it ‘disheartens’ them when other peer educators come and try to win over their clients.

C. ADVERSE SITUATIONS THE PEER EDUCATORS HAVE TO DEAL WITH

If an MSM client’s parent dies, the peer educators raises funds to help the MSM in performing the death rituals. On another occasion a peer educator commented, ‘Because I am a peer educator, I am a ‘friend’. Because I am a friend, I need to take responsibility of taking my friend to the doctor in case he is sick’. The peer educators are often required to resolve problems related to Parikh (i.e. partners of Koti) or

resolve fights/scuffles between the MSM clients. The peer educators work involves handling (i.e. dealing with/managing/treating) those who are tortured as well as handling those who torture. Nonetheless, often friends from the peer educators' own locality do not talk to them because of fear of being associated with effeminate males.

Other adverse situations included difficulty in carrying condoms to all places especially if they are university or college students as condoms often need to be carried in bulk for ease in distribution. In an Indian society carrying condoms is attached to social stigma and carrying in bulk can only add to the problem.

The MSM often seek jobs, the peer educators have to advise them about things they can do such as selling snacks etc. It is to be noted here that it is often believed that the MSM do not get work because they are effeminate along with being poor and illiterate. Thus the peer educators need to refer their clients to different kinds of work.

In some massage parlours the owners are not concerned about the boy's health. Thus peer educators need to advocate in those parlours as well as the boys outside the parlours when the owners are too adamant.

Sometimes, clients are suspicious of the peer educators because they carry files (files and folders for work). This develops a distance between them. The clients think they are different from what the peer educators are. The peer educators informed that facing such situations, the peer educators try and convince them that they are their friend by saying things such as, 'I like belonging with you as I am 'like' you. The place where I come from, there aren't people like you, so I come to belong here'. Breaking the ice in such ways allow the clients to open up and accept the peer educators and subsequently share their personal life anecdotes not just what peer educators needs to know in relation to work. Thus a peer educator has to be strategic enough to throw in HIV related issues or counsel them while in conversation.

In the field, the clients are more interested in winning business over the other clients cruising the area. It is difficult for the peer educators to make them listen to HIV related talks in such an environment. Often one can listen to a peer educator but when it comes to using the condom they do not use it. Thus it is better to observe the clients in the field and note the best time for soliciting and approach them accordingly.

The peer educators reported that it is most difficult to bring the clients to do a blood test. If they try and convince them persistently, they think that the peer educators are doing that because they will earn money for their job. It is to be noted here that one of

the DIC co-ordinators informed the researcher that at the beginning of HIV prevention work with MSM the peer educators were volunteers and worked for their own community without pay. Additionally peer educators described themselves as 'friends'. Thus there is a tension between peer educators trying to be a friend as well as get his job done. One peer educator reported that if the Parikh fancied the peer educators it is important not to push him away because the peer educator is working but maybe it is a good strategy to flirt a bit, thus opening up opportunities to be able to enquire about him (i.e. if he practices high risk behaviour etc). It is important to make them feel that you are not talking to them only because you have to reach a target population of clients as a peer educator.

MSM peer educators face discrimination from local people. Often neighbours do not allow their sons to mingle with the effeminate males in fear that their 'son' will become effeminate. Additionally, people tease them by calling them names such as, 'buggers', 'bula di' or physically touching them. (Bula di is a doll and the HIV/AIDS mascot for West Bengal HIV/AIDS prevention. "di" is a Bengali suffix, short form of 'didi' which means elder sister) (Simple Thoughts, 2005). The peer educators mentioned that sometimes they would prefer being accompanied by someone in the field.

D. PEER EDUCATORS' ADDITIONAL DUTIES

Sometimes the peer educators have to go out with the clients to fetes or on a day out outside work. These outings are more on the clients' request so as to reciprocate for when they listen to the peer educators (in relation to behaviour change).

It is important not just to reach the 'regular' clients of the peer educators but also their partners or Parikhs, not just as peer educators at work but as their 'friend' as it is often thought that peer educators cannot be friends. In describing who is a peer educator, the interview participants described peer educators as 'someone who is a friend'. There is a duality in this understanding of a friend. Although the peer educators described themselves as friends to other peers or clients, the clients often thought of them as opportunist friends as they were befriending them for work. Thus going out with a client or their partner as their friend meant social outings when the peer educators are not working and they just hang out as friends or fellow MSM.

E. PEER EDUCATORS' SKILLS REQUIREMENT

ADVOCACY

The peer educators reported that they need to know more about how to deal with field harassment. The MSM may face mental harassment from locals, family (when parents are not accepting them) in addition to police harassment or harassment from 'dada'. Sometimes this results in the MSM becoming suicidal making it difficult for the peer educators to talk about the risks of HIV/AIDS. The peer educators thought that the national AIDS control prevention rightfully focuses on raising HIV/AIDS awareness among the at risk groups, however, in reality it becomes essential to not just raise awareness among these groups but also to look after their mental and physical wellbeing.

Other skills required by the peer educators include skills to 'mobilise' the field or build an Enabling Environment for the MSM through advocacy as referred in Chapter 2, Section 2.3. Other training needs of the peer educators which are highlighted in bold include **leadership** training as the peer educator needs to reassure the clients that they are friends and are with them not just for work. **Counselling** the clients was also essential. Some peer educators thought of possible solutions such as spending some money on buying the clients some snacks while talking together (indicating doing things FOR them) or if the client is in a bad mood, not to talk about HIV/AIDS straight away but to take him for a walk or have a tea with him and then gently broach the topic. How to **motivate** clients to take services or visit the DIC also was a required skill as different clients need to be motivated differently. They added that often distance to the DIC prevents clients from visiting them and often they expect to be compensated for the travel costs. In addition, clients usually expect DIC to be near where they are. They also expect refreshments on visiting the DIC. Peer educators also had concerns over how to motivate clients on consistent condom use. The peer educators added that they feel depressed when clients do not use condoms even after prolonged periods of advocacy.

Approaching clients for the first time, especially those who are least interested was reported to be difficult especially things like eye contact, body movement, what to do when presenting and introducing yourself to the MSM. Eye contact or body language is one of the important parts of knowing who is an MSM. The peer educators reported requiring to develop skills on reaching out to the hidden population especially when internet cruising makes them increasingly invisible. MSM being a marginalised population is often invisible or non identifiable in society. There can be further invisibility of MSM within the MSM population. Peer educators also reported not

knowing what to do when clients ask something they do not know about or when they are victims of theft, pick pocket or extortion at sites. Some peer educators reported that they need to know how to fill up peer card, that is, the monthly report cards for HIV prevention programmes. They added requiring time management skills as well.

At the DIC, the peer educators would like to know ‘who to mingle with and how and who will solve their problems quickly?’ Relation with colleagues should be strictly work based even if some are couples or friends. They added that often they do not know ‘what is going on in the office’ or about the problems other peer educators’ face.

F. SUPPORT NEEDS OF THE PEER EDUCATORS

When harassed, peer educators often feel lonely and helpless especially when they cannot do anything when their ‘befriending’ or clientele gets harassed. ‘Befriending’ is a term used by the MSM peer educator in Kolkata to address their regular clients.

Grouping and competition between peer educators often result in a peer educator belittling, dominating, teasing or humiliating another peer educator in addition to regular verbal harassment at the office (DIC). This result in peer educators feeling depressed. The peer educators expressed that they should be advised on ‘how to behave at office’. One peer educators reported that he does not understand what is ‘education’ in peer education.

MENTAL SUPPORT

The peer educators need to provide mental support to clients. But they themselves need mental support if any work targets such as evaluation and monitoring or blood testing and counselling are not reached or if a peer educator cannot reach their monthly target of reaching out to sixty clients. In addition, MANAS Bangla often set up targets to be reached by the peer educators. The peer educators reported that they feel ‘great’ if they succeed but that failure is often de-motivating.

The peer educators expressed that they need a point of contact during workshops who would clarify their doubts if something is incomprehensible. They mentioned that workshops usually have many participants and limited time.

The above section mentioned the support and learning needs of the peer educators prioritised by the participants of the two focus group discussions. The following

section will look into further processes of game development based on the identified needs.

6.7.4 Selecting Game Destinations

During the two focus groups, a brief questionnaire was administered among the participants to enquire about the places where they work. The participants mentioned twenty five sites or destinations of work in total. The inventory of the sites or places of work are detailed below and are presented in order of number of times they have been mentioned in the focus groups. As part of the participatory design process the participants were given cameras during the focus groups to capture where they work and they brought back the following pictures a few days later although this does not include all the destinations mentioned. The pictures helped design the description of the destinations in the game.

Figure 6.4 and Figure 6.5 show picture of the Railway Station and platform. It is a busy thoroughfare for people to pass through and meet. Often the peer educators themselves come from adjoining areas to the main city through the railway station. Railway police popularly known as GRP are often the cause of harassment for the peer educators along with local ‘dada’ and by standing stall members. (Railway Station or RS was one of the destinations in the final game).



FIGURE 6.4. ‘RAILWAY STATION AND PLATFORM’



FIGURE 6.5. 'RAILWAY OVER BRIDGE' (AS NAMED BY PARTICIPANTS)

Figure 6.6 shows a picture of a public toilet which is one of the cruising area and a place where MSM perform sexual acts (Toilet was one of the destinations in the final game).



FIGURE 6.6. TOILET

The Park as shown in Figure 6.7 and Figure 6.8 provides a snapshot of another place where peer educators work. It is one of the popular parks in Kolkata around a lake where many leisure activities take place such as rowing, swimming, cricket and laughing (laughing to reduce weight) clubs. This park is also used by the public for morning and evening walks. Occasionally the park also holds organised events such as music concerts and fetes. This is also a popular site for MSM to meet potential clients as it is a busy hub and also provides isolated areas for hidden affairs. The police often cruise the area and harass the MSM here. (Park was one of the destinations in the final game).



FIGURE 6.7. PARK



FIGURE 6.8. PARK

Figure 6.9 gives a view of the lake in the park. Many parks in Kolkata are developed around a lake and the peer educators work around these areas.



FIGURE 6.9. LAKE

Massage Parlours and Slums were the next two most mentioned destinations. No pictures were taken of them as it would not have been appropriate. Road or cruising areas for MSM by the road sides are shown Figure 6.10 and Figure 6.11. (In the final game 'Road' is where the players walk through from destination to destination).



FIGURE 6.10. ROAD



FIGURE 6.11. ROAD SIDE

Figure 6.12 shows a Koti cruising outside a cinema hall and Figure 6.13 show a cinema hall by itself. These are peer educators' outreach areas (The peer educators who took this picture reported receiving permission of the Koti before taking the picture).



FIGURE 6.12: A KOTI OUTSIDE A CINEMA HALL



FIGURE 6.13: A CINEMA HALL

The private homes of the peer educators were mentioned although pictures were not taken. The next was a Tea-Pan stalls (Pan is betel leaf often associated with chewing tobacco) as mentioned in Figure 6.14, Figure 6.15. These stalls can either be combined or separate. Local hoodlums or dada often frequent these places.



FIGURE 6.14: PAN STALL



FIGURE 6.15: TEA STALL

Figure 6.16 shows a bus stop by the roadside in Kolkata.



FIGURE 6.16: BUS STOP BY A ROAD SIDE

Street corners were mentioned next but no pictures were taken. A Koti's home as shown in Figure 6.17 was the next most mentioned destination.



FIGURE 6.17: KOTI'S HOME

'Hijra Khol' or dens of the third genders, Clinic area were mentioned next while prioritising the destinations for the game. Through personal network was mentioned as destinations as well. Saloon or beauty parlour came next as shown in Figure 6.18. These can also be places where MSM get massage services.



FIGURE 6.18: SALON

Grass field, Bazar (market), 'Dhapa' (Punjabi or north Indian eating house), River belts, Shopping complex, Temple, Tram Depot and Canal Side were also mentioned as other destinations where peer educator work but no pictures were taken of them. Having looked at likely popular destinations in the game through the eyes of the peer educator, the next section will detail the development of the storyline which involved

designing missions, dilemmas, local events and objects. These were done through two Game Design Workshops each involving four peer educators.

6.8 Game Design Workshops

Two game design workshops were conducted to develop simulated scenarios of the peer educators experiences based on the prioritised issues revealed by focus group discussions as mentioned above. Nine destinations in Kolkata were selected as game destinations by the participants of the two workshops. The destinations as ranked in order of most mentioned was shown to the first group with the top six being chosen as game destinations. The peer educators rearranged the top six to their preferences of areas most relevant to them and the next group added three more as per their preferences. These nine destinations eventually chosen were Road, Pan-Biri Stall, Canal, Basti or Slum, Railway Station, Toilet, Koti's house, DIC and the Park. The themes for storyline development were deduced from the themes prioritised by the participants finally in the two focus groups. The peer educators were briefed about the game after signing the consent forms.

The aim of the workshops was to develop the game board and the storyline. Sample maps of Kolkata and sample charts, developed by the MSM projects for condom or MSM population mapping, were put on the wall of the room where the Game Design Workshop took place. This was done so that the peer educators could refer to how the game board or destinations will possibly look. Six destination names (as per the number of times they have been mentioned by the peer educators during the Focus Group) were put up on post-it notes by the sample maps as shown in Figure 6.19.



FIGURE 6.19. MAPS AND DESTINATION NAMES ON THE WALL DURING GAME DESIGN WORKSHOP

The peer educators reprioritised the destination names after discussing the places they go to work most as in Figure 6.20.

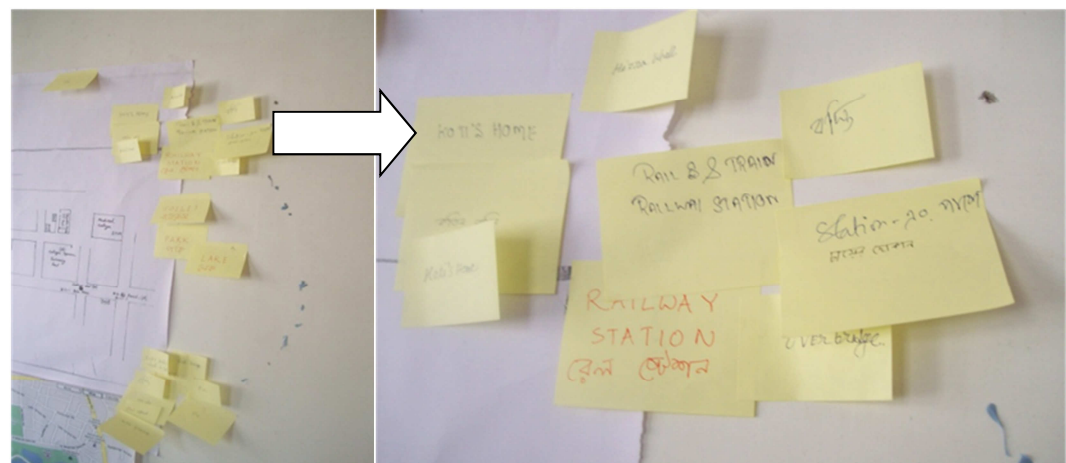


FIGURE 6.20: RE-PRIORITISED DESTINATION

The destinations as finalised by the peer educators during the game design workshop were Road, Pan/Tea Stall, Canal (cruising places along the side of a canal), Basti or slum, Railway Station and surrounding area (later named as Station area), Toilet, Koti's house, DIC or the Drop In Centre, Park (Lake was included in the park as often parks are around the lakes). The peer educators drew the destinations on a board provided to them and mentioned preferred colours and signs that will enable them to identify each destination easily when they visit the game board during future game play. The following set of pictures shown in Figure 6.21 show the process of developing the game board.



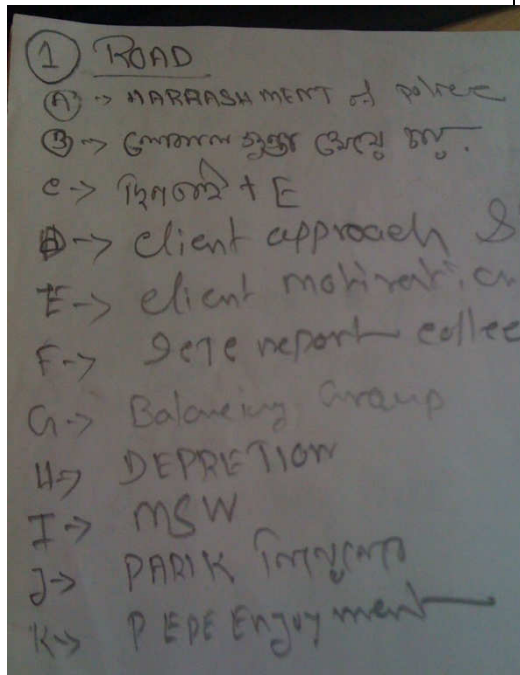
FIGURE 6.21: PROCEDURE OF GAME BOARD DESIGN

The next step was to map the general themes that emerged from the focus group onto the chosen destination. The themes were assembled and read out to the peer educators in the workshops. The nine destinations as finalised by the peer educators through discussion were written on a sheet of paper. Three of these sheets were distributed among each peer educator. The finalised themes were read out to the group and they

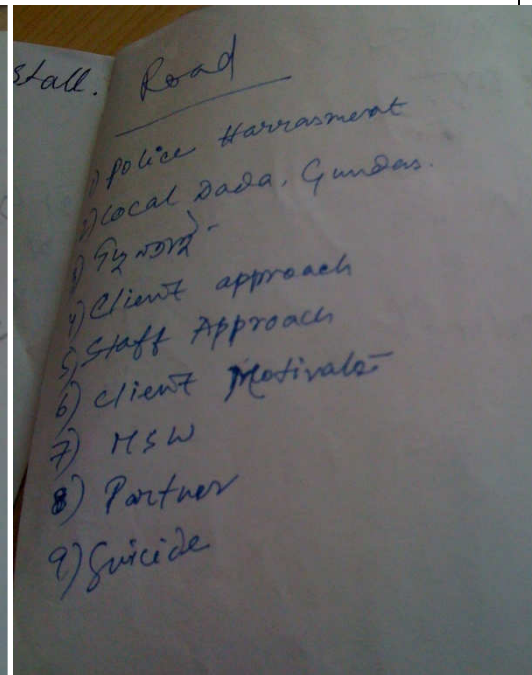
were asked to note down each theme under the most relevant destination. For example, if one of the theme was police harassment, they noted it down under as many destinations as it occurred such as park, toilet or canal side. This was done in discussion with one another in the group. The following Figure 6.22 shows examples sheets.

This process was repeated in the second game design workshop. The peer educators in the second game design workshop agreed to the destination names as decided by the group in the first game design workshop and added three more. However the same themes as discussed in first game design workshop were not repeated during the second game design workshop. That is if participants of workshop one had already developed a scenario on harassment at the road it was not repeated in the second workshop due to time limits.

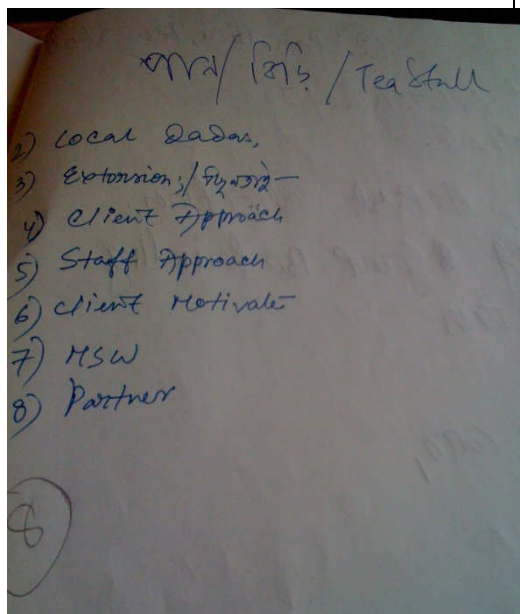
In narrowing down themes to relevant destinations, the peer educators discussed and role-played the events that follow in the destinations during their outreach work.



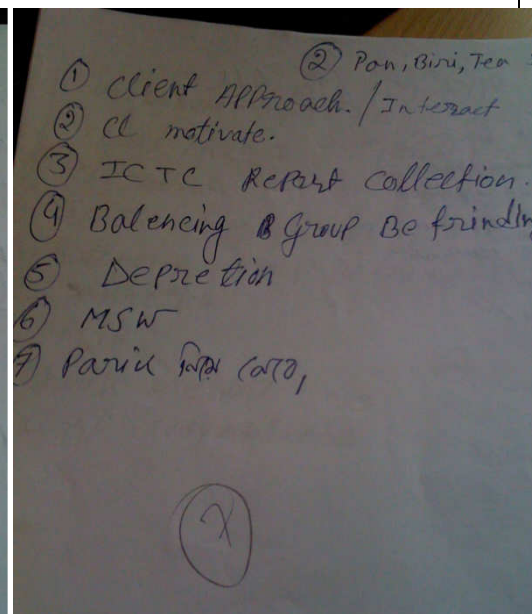
Themes as happened on a 'Road' written on a piece of paper in Game Design Workshop (GWD) 1



Themes as happened on a 'Road' written on a piece of paper in GDW 2



Themes as happened on a 'Pan/Tea Stall' written on a piece of paper in GDW 1



Themes as happened on a 'Pan/Tea Stall' written on a piece of paper in GDW 2

FIGURE 6.22 THEMES OF GAME WRITTEN UNDER DESTINATION HEADINGS

6.9 Storyline

This section gives a summary of the game destinations and storyline as developed by the peer educators in Kolkata. The destinations DIC, Koti/Chibri Khol (Den), Tea/Pan Stall, Basti or Slum, Park, Station (Railway) Area, Toilet (Public), Khal Par (Canal Side), and Road as decided were now given rough descriptions to fit the one hundred and sixty character limit of a SMS. The main focus then shifted to developing scenarios for the missions, dilemmas, local events and objects keeping in mind the game structure and time limit. The peer educators wrote down on paper within the SMS character limit as shown in Figure 6.23.

Figure 6.24 gives a sample of how the storyline was planned, assigning content according to the hours of the day onto a table, using materials such as Figure 6.23 from the game design workshops in Kolkata. At this stage content is being translated into English at Nottingham for authoring on the game engine and also for the understanding of the English audience at the University of Nottingham who were potential evaluators.

Destination	Morning	Afternoon	Evening	Night
Park (Inside Description)		It is scorching hot. You feel very uncomfortable. [You do not see many people around]	There is a fete going on. The park is lit up. Most people are gathered around the food stalls. [A fete is going on]	The park is nearly empty. The tree leaves sway. A cool breeze blow past. [People are still hanging out on the benches]
Park (Outside Description)		[The place is desolate]. No one walks past. You are scared; the patrolling police may harass you. [There is no one to help you].	The sun has gone down and the heat begins to soften. [People are entering the park] to attend the fete.	The traffic is heavy outside the park. The footpath towards the main street is busy with people. [Life on the main street is busy].
Railway Station Area (Inside Description)	You have arrived at the train station. The station is buzzing with people. [You start walking].			
Railway Station Area (Outside Description)	The sun is bright and hot. Few passers by walk past. A taxi waits in the corner of the street. [You start crossing the road]			

FIGURE 6.24. SAMPLE PLAN OF STORYLINE AS PER THE HOURS OF THE DAY BASED ON THE GAME DESIGN WORKSHOPS BEING TRANSLATED INTO ENGLISH AT NOTTINGHAM FOR AUTHORIZING ON THE GAME ENGINE . THEY ARE LIMITED TO 160 CHARACTERS. SENTENCES IN BRACKETS WERE INTENDED TO BE SENT AS SEPARATE MESSAGES.

6.9.1 Developing Missions and Dilemmas

As explained earlier, further development of the storyline followed in Nottingham based on the data collected in Kolkata. The plans were developed as per the requirements of the game engine in that the basic framework of the dilemma consisted of a dilemma scenario and multiple choice responses. Appendix 4 shows an initial dilemma constructed according to the requirements prescribed by the game engine and data produced by participants in Kolkata. These underwent further changes throughout the iterative process until the final sets of dilemmas were authored and described later in this chapter. The missions as shown in Appendix 5 were developed in a similar process and underwent similar changes until the final game was authored and is also described later in this chapter. These were developed in Nottingham in English.

The game development continued in Nottingham. The design decisions were taken based on the following rationale:

Developing interesting themes that would work as a game play and initiating elements of suspense and surprising twists to engage players, for example ensuring that choices in the game are not too obvious that they will know ‘what should be done’ even if in practice it may not be so.

Introduce elements of collaboration, for example setting dilemmas which need collaboration and competition, that is, peer educators working as a team. Also, design a realistic simulation of real life situations parallel with creating a training game with fantasy, and entertainment elements. Players should also have awareness of where they are in the game, what are the next possibilities and where are the other people.

Having looked into the initial design decisions, the game continued to be developed in an attempt to simplify the complex contents for better understanding by the players. In doing so, certain design trade offs were made as listed below. In gameplay players are often reluctant to collaborate if they do not know each other. At the same time people also reveal views if they are anonymous. At this stage it was not certain whether it would be appropriate or not for the players to meet when the board is to be introduced and players are to be briefed about the game.

Aspects of competition and collaboration such as developing quota of clients became part of the game. It was decided that the game would have scores as an element of motivation, collaboration and competition. The minimum score each peer educator has to gain can be sixty. The rationale behind it is that each peer educator has to reach out

to sixty clients per month without which they are de-motivated to work, harassed by office staff, threatened with losing their jobs. Thus the number sixty is something they can relate too. In the game each peer educator can score as much as possible but they have to gain a minimum of sixty points which can be gained individually or by helping or talking to other peer educators. The aspect of scoring was adopted from the Day of Figurines which gave players health points on accomplishing missions or dilemmas. In the game for the peer educators they were made into points awarded to them on accomplishing missions and dilemmas.

In the created game scenarios, some of the options are obvious choices the peer educators might make. These can be found in Appendix 4 and 5. However it was suggested that each choice the peer educators make or response he sends will lead to points being awarded. The responses will have automated words in the game engine, which the peer educators' responses have to match with to get back a response rather than having set list of responses. For the choices the peer educators will choose, the obvious choice may have less points compared to other choices and each time the peer educators move further he can earn more points. The rationale behind this is, during the baseline data collection it was observed that the peer educators assumed their selection in the research process was dependent upon their skills. Thus it was assumed that the peer educators are quite competitive in nature. This assumption also comes from my experience of working with the peer educators since 2003. Thus if an element of scoring points is introduced it is assumed that it will encourage the peer educators to play. If anyone in the team fails to score sixty, the whole team will fail in the game. Thus each player has to ensure others are playing or helping other players or talking to other players. The final game had this mechanism but there has not been significant mention by participants. Thus it was not an important part of the final gameplay. The following section will look some of the constraints encountered.

6.9.2 Temporal Structure of Game and MSM Identity

In the original Day of Figurines, there were twenty four hours of virtual game time which were mapped onto twenty four days of real time. Each hour in the fictional town was therefore a day in the life of a player. In the Day of Figurines time is therefore slowed down so as to deliberately create a slow game that unfolds in the background of players' ongoing lives, in the context of simulation games usually have an accelerated game-time relative to real-time. Interview analysis in Kolkata showed that six of the participants reported having played mobile phone or computer games

with one mentioning that he likes playing games on mobile phones, while another adding that he has played less games on computers but enjoys playing games on mobile phones. In total four participants confirmed liking playing games on the mobile phone out of twelve participants. The rest six reported not having played games on mobile phones or computer with one adding that he finds it “boring”. Thus, care needs to be taken with regard to adjusting time so as to ‘engage’ the players during the game play.

As already mentioned, playing the Day of Figurines through the mobile phone enable players to interweave an unfolding story with the ongoing patterns of their daily lives. MSM peer educators often hide their identity as MSM. It is to be observed during the game play if ‘receiving and sending texts’ becomes a hazard to revealing their identity while the game interweaves with their patterns of life.

The Day of Figurines does not run continually. The existing game performs for ten hours and shuts down and starts again the next day, each day representing one hour in the fictional town. The story unfolds over these hours of the Game Time and the players’ Real Time. The times preferred by the peer educators at baseline to play the SMS game was between 11am to 12pm. Baseline interview participant IP9 stated that he wants to play from 11am to 2am in the morning. A consensus on game play time has to be reached in discussion with the peer educators in Kolkata so as not to inconvenience the peer educators. It is again to be remembered that the peer educators often hide their identity as MSM and texting frequently on the mobile phone should not put them at risk of revealing their identity.

In order to play the game the players must first visit the public space where the board is going to be housed and where the players can find a model of the virtual town (destinations the peer educators’ frequent in Kolkata). Given that the game play is going to be an anonymous process, it is to be decided if the peer educators should visit the public space at the same time for briefing or individually. It is also to be noted here that during the baseline data collection the peer educators were informed that selection of participants is based on opportunistic selection of samples. The data collection interview, focus group discussion and game design workshop, involved participation of same and new participants. It was observed during the focus group discussion and game design workshop that the peer educators tended to discuss between themselves if they were part of the earlier process. They felt that selection of participants during later stage of the data collection process depended on their skills during the previous process or processes. On the other hand while contacting participants over telephone

for participation in the later processes, they would enquire about who the other participants are in order to (a) travel together, (b) know if they are comfortable with the other peer educators. One of the game design workshops brought together peer educators from two different DIC where one peer educator had prejudice towards the other. However at the end of the game design workshop, the peer educators seemed to have become friends. Thus one has to be careful in deciding if the peer educators should come together or be registered individually for the game as both the elements of collaboration and competition seems to have an impact.

Language seemed to be a concern in designing the game especially with the sub-cultural language of the peer educators. This concern remained even after baseline showed that the peer educators were used to reading Bangla in English alphabets. This concern was that the essence of the game will be lost in ‘translation’, i.e. the idea of engaging and motivating narrative within 160 characters of a SMS and the ability to quickly engage in episodic game play. For example, if such a situation would arise that there was difficulty in understanding the messages, a player would have to take more time to participate and it would not be easy to ‘dip in’ to the game as events occur and messages are received.

6.10 Game Pilot 1 and 2 at University of Nottingham

6.10.1 Overview

Once the initial design was complete, the game was piloted at the University of Nottingham to gain feedback on the technology and on the so far authored content and thereafter refining it. Both the trials were carried out in Nottingham involving three and five players from the University of Nottingham respectively. All participants except one were male. The first trial was carried out for two hours while the second trial went on for three hours. The first trial was more an effort to verify the SMS proxy was working at Essendex, the mobile phone company used for playing the game and was tried for the first time by the Day of Figurines SMS Proxy.

The second trial involved five players. One of the players was added but was unable to play. The trial was from 3pm to 5:30 pm. The game started later than scheduled because the SMS gateway could not be opened. There was a technical problem with the phone number code ‘44’. The players’ phone numbers were not automatically fed in to the SMS proxy through the online form which added the numbers as ‘0044’. The

problem was resolved by individually editing the authoring tool database with player information using '44' as in 447595548962.

6.10.2 Feedback from Players

The feedback from this trial is as follows:

One of the players felt that the game was interesting and gave him a comfortable feeling as it was “going on parallel to whatever I was doing at the moment...I was not constantly thinking about the game...and messages from the other players was constantly reminding me that I was being part of the game but that sensation couldn't develop further because it (the game) ended very quickly. I was just starting to engage and starting to understand how to interact with the other guys, trying to do something to provoke a reaction from the other participant but didn't have the time. Sorry because I was doing something else and I couldn't be constantly texting”. On being asked if the texts annoyed or irritated him he added that “playing the game wasn't my priority, it was secondary, I was not thinking about it but it was not annoying”. The fact that the other game players were humans and not computer generated characters was also an engaging factor for the player.

Another player added that, “I quite liked it...the general idea of it”.

On being asked about the interface the players from the trial replied that, “It wasn't a great experience but it was ok”. On being asked about the narrative the players added that, “it was interesting”, clarifying further that “it wasn't so much about the content but was interesting was the interaction with other the players. I didn't know what we were supposed to do or were doing...couldn't follow sequence of the game” but receiving messages from other players was engaging because there's somebody out there I'm interacting with whatever the situation is”. The most engaging part of the game for player 1 was to “engage in these sort of communications”, “the fact that the things other players do affect me, my game was the more engaging part for me”.

Another player added that the authoring tool only allows to 'find' objects. It will be encouraging to find other players also.

Most players talked about the learning curve not only in terms of how to play the game but also in terms of engagement. Players felt that the game needs more than one day of playing to develop 'engagement' more as the story evolves. It is to be noted that in the current state of the game is more of fragmented events or scenarios rather

than 'a day in a life of the peer educators. It has been noted through supervision meetings that a storyline needs to be developed along the lines of 'a day in a life of the peer educators in Bangla to avoid language constraints and tested with participants familiar with Bangla and the MSM peer education situation in Kolkata.

Players felt that the narrative should have prompt or cues telling them what to do next. However, it is felt that giving prompts and cues will be going against the game vision, where it was thought that the simulated scenarios should be 'just out there' and the peer educators should guess the actions as per their field experiences and see what happens, thus allowing them a learning experience. However, on reflection it is thought that, because there is already a learning curve in as much as the game play is concerned, that is, players felt that there are too many things to remember, that the narrative should perhaps give clues about what to do. They added that 'it is dull to get the same error message back'.

Some of the players felt that there were only few destinations to go to. Lesser destinations also made players feel that 'I didn't want to go around the same places waiting for something else to happen...and discouraged me from going around places'. In the original game play there are fifty five destinations to go to encouraging players to explore the world in the fictional town as the story unfolds. In the current game the maximum number of players that can be deployed for the purpose of testing the game is twenty MSM peer educators. Thus the aim is to encourage players to meet more number of times, thus the decision to have fewer number of destinations.

The players felt that the Day of the Figurines is a very rule based game and this project is trying to 'fit the model openness to something that doesn't allow it'. It was suggested that the game can still be open 'with good instructions but if they get it wrong the first time' they should be given cues or the error messages such as 'there is nothing you can use of that kind here' to positive ones or cues such as 'try befriending'.

In the second trial two of the players felt that the responses they got back from the game engine were too slow to keep them engaged. This problem can be easily resolved by changing the time factor on the game engine. The authoring also had some 'typo' errors. The players felt that the dilemmas, missions ended abruptly. It does not lead to anything further which, by the time they have gone through the process of playing, has become their expectation. For example:

Dilemma at the toilet:

You've arrived at the toilet. Some Koti/Chibris are gathered in a corner talking to themselves. Do you want to talk to them? a)Yes; b) No; c)You are indecisive

The responses according to the choices the players chose:

You have decided to talk to the group of Koti and chibri. They hesitate, not sure who you are, errrrrrrrrr! Slowly they start talking back to you.

You have decided not to talk to the group of Koti and Chibri. Well, what would you like to do now?

You are indecisive. You wonder if you should talk to other Peer Educators working around the same area... maybe they can help you decide!!!

It was felt during the authoring of the game for the peer educators that some of the dilemmas should lead the players to do a mission. However, that would necessitate changes in the authoring structure. However, it has been decided that since the narrative is still in the process of development and refinement, the structure should be left as it is and more manipulation should be done with the narrative. In this regard, advice from Blast Theory is sought to help build an appropriate narrative. It was also important for the player to get feedback on their action which the game did not allow them to do – ‘I was confused by the (a) or (b) situation. I didn’t know if I had done that’. In addition, the players did not understand the tasks they were supposed to do under the dilemmas or missions.

The players felt that the goal was not clear and they did not know what to do. They felt that text ‘is very unconstrained’ as against computer games or likewise which has buttons and a player is aware of what or what not to do. The player felt that it is important to introduce some elements of constraints about what he can or cannot do. He suggested that one way of doing that is briefing the players properly before they play the game and give them a card about what they can do or by sending texts about the same.

One of the players who had analysed the interaction between players in the Day of Figurines suggested that there should be a clear distinction between narratives which are descriptive and narratives which gives you a task. In his analysis he found that on

many occasions players of the Day of the Figurines tried to interact with the narratives.

Most players did not complain of any technical difficulties except for one player who reported that 'It started a bit confusingly when the first message I received was an error, even though I hadn't done anything 06:22am, this destination isn't recognised. Please try a destination listed on your help card or at www.dayofthefigurines.co.uk'. Another player was trapped in the Edge of Town at the start of the game and was not sure what to do for some time and had to be helped externally. This was due to mistake on authoring as the silo capacity at the starting destination is meant to be kept 1, so that players do not see other players there forcing them to move.

Problems encountered by players at the two trials were dropping and picking objects which were confusing for the players. It was pointed out that the objects were difficult to decipher especially in the second trials when the characters as 'supervisors' and 'befriendings' were suggested as objects. It was suggested that objects should be capitalised in the text messages in order to distinguish them in the game narrative. It was confusing for the players to understand where and when to use an object. Players also felt that the goals of the objects were confusing. When they played the original Day of Figurines they were clear about the use of the objects. E.g. Food items were to be used on themselves to gain health. In the second trial of the current game 'tea' was an object. From the perspective of the authoring, tea was to be used by the peer educators to break the ice between clients in the game destination DIC. The players also felt that in the Day of Figurines the players always get a text on what objects are there at the destination, so that they are clear about what objects to use at each destination. This factor was missing in the pilot trials. They also felt like characters such as 'supervisors' and 'befriendings' can be used as constant powers or abilities which they can be used any and every time separate from the objects specified for destinations.

Players added that briefing should have been clearer and that the narrative, sequence of events or destinations was not clear also because there was no 'fixed goal or a winning state' or 'achievement'.

In the first trial a player reported that there is a lot of things to remember while playing the game. In the second trial a small card was introduced giving players visual pictures of the real destination in Kolkata and the commands/keywords to be used in the game play. The players felt that they needed information on when another player

was in and out of the destination and not just in the destination or what they are doing at the destination. It was felt that they have an expectation that the other player is there and suddenly they realize that they are no more there is in a way de-motivating. This kind of information was suggested as driving the motivation of the game play as well as re-engaging after disengaging from the game play.

6.11 Pilot in Kolkata and Re-trial at Nottingham

Having developed and tested the game in Nottingham, a trial was attempted in Kolkata. Two additional Game Design Workshops were conducted to improve upon the content following the data collection and feedback from trials in Nottingham. The game design workshops comprised eight participants from the four DICs of MANAS Bangla representing two from each DIC. Previously there were only three DIC in Kolkata. In all workshops the majority of the time was consumed in making the participants understand the game especially the relationship between the board and the text. Participants were also confused about why their life was on mobile phone. During the workshops power relations between the peers with regard to their background affected how they interacted and gave feedback. This can be explained by observations that if a senior staff especially their immediate boss would be present during a workshop they would be reluctant to speak freely or if the majority of the group members were Koti based MSM or experienced MSM the minority would talk less or get dominated. On occasions where someone either took time to understand what they were doing they would either feel inferior or be criticised by the others. Participants would also be interrupted by another who would attempt to explain on their behalf. During the workshops the participants were also very keen on talking amongst each other, getting to know each other and form relations between each other often at the expense of the tasks in hand set by the researcher.

Further paper prototypes of the scenarios were made and written using the authoring tool in Bangla in Kolkata after the development and feedback collected in the workshops. A trial was scheduled following the development with four peer educators from the workshops. The selection was based on having two experienced and two inexperienced peer educators. The trial had a miniature version of the board and game re-explained. At this stage giving an anonymous name to their figurine added to the confusion of the simulation and reality and the relationship between their movement and the movement of the figurine in the game. For example, they were confused about why they do not have to go to the destination physically when they are typing GO

[destination name]. The confusion was exasperated by a reluctance to admit not understanding something in front of another peer who already understood it.

The game was scheduled to be played for couple of hours but given frequent power cuts on the day the schedule was shortened. At the beginning of the game the players received the welcome message but the text also showed British time which confused them. After sometime it was realised that the players were receiving messages but their replies were not reaching the game engine although their phone indicated 'message successfully sent'. After several attempts to resolve the problem, the game play was discontinued as the problem could not be solved. Thus the trial resorted to paper messaging of the texts. Formal interview at this stage was not conducted.

Following the problems encountered in Kolkata, attempts were made in Nottingham to resolve the issues both technical and content. Another trial was conducted in Nottingham with further four participants who had working knowledge of Bangla and the MSM under HIV prevention projects. The feedback majorly consisted of confusion in understanding the game, the objective of the game and understanding how to play the game. One player added that the language well represented the MSM language and code words. Further development of the content was made until final intervention in Kolkata which is mentioned below.

6.12 Summary of Key Issues that arose from the pilots

The following table gives an overview of the issues that occurred during the piloting of the game, detailing why they occurred and what was done to address it in designing the final game.

Issue that Occurred	Why It Occurred	How was It Tackled
Game board concept difficult to understand	The participants found it difficult to comprehend the concept of playing their own lives as peer educators on SMS and on board without having to physically visit the destinations although they enjoyed using the figurines	The game board was minimised to a concept map used to introduce the game. The map of sites in Kolkata on a game board was eliminated.
Too many of	During the game trials in Nottingham players did not meet each other often and received	The number of destinations was reduced so that players would encounter someone at a

destinations	“there is no one here” messages when arriving at destinations. This was found frustrating.	destination more often.
‘Health’ score potentially demotivating	In the original game when the player reaches zero health the game ends for them. This was seen as a demotivating factor for the peer educators, as there were already reoccurring issues about who participates or now.	During development it was decided to keep the game score concept but not give a numerical score to the players in the game. Their game play would not end if they reached zero. Reports such as “you are feeling well” were given only.
Balancing Game Time and Real Time	During the pilots players mentioned the speed of response was too slow to keep them engaged.	Changing the time factor in the game engine changes the speed at which ‘game time’ passes compared to ‘real time’. In the original game, one hour of ‘game time’ passed in one day of ‘real time’. In the final game the game time was equal to real time.
Time factor in the game engine	In the trials in India, the received SMS on the participants’ phones from the game engine was showing as UK time (GMT) instead of local Indian time (IST). This was confusing the participants.	Changes were made on the game engine before the final trial to ensure time shown shows local Indian time. Nonetheless the problem was not resolved and remained a minor matter of confusion. The participants were made aware of this before game play and requested to ignore it, which they readily accepted. (The time confusion could have been caused due to the SMS gateway Essendex based in the UK).
Connecting Dilemmas to Missions	Initially it was planned that dilemmas should lead to missions. For example, making a choice in the dilemma meant something else (mission) needs to be done. This would have necessitated change in the authoring structure.	Given this was a pilot study it was not suitable to make those changes. Thus as shown in Figure 6.30, each hour and location was allocated a dilemma at first followed by a mission and the narrative was used to guide players undertake the missions.
Players were	This included that the players were not sure about which	1. Briefing was made more thorough during introduction

Unsure of their Options in the Game	keywords to use for undertaking an action or what their objectives in the game were	<p>and before the start of the game.</p> <p>2. A reference card as shown in Figure 6.27 was developed with the help of peer educators explaining what each keyword meant and when can they use it, also providing examples alongside each keyword. For example, 'to talk to other players, type SAY first before typing what you want. 'E.g. SAY how are you?'. As many times as you speak to other players, you have to type SAY before saying anything.</p> <p>3. The first hour of the authored game was authored to help players practice the keywords as shown in Figure 6.30.</p>
Difficulty following Narrative	Initial testing received feedback that the narrative was fragmented events and difficult to follow.	It was decided that the game narrative would be about a day in the life of a peer educator, what might happen on that day to him/her as a peer educator.
Length of Play	The participants suggested that playing the game was a learning curve in both learning how to play as well as engagement.	It was planned that the game would be played for longer than it was during the pilots. (Technical, time and resource constraint meant that the actual game play was shorter than planned as described in the next chapter).

The resolutions to the issues above were built into the game for the final trial. This is described in the next section.

6.13 The Game for the Final Trial

The deployment of the final trial will be described in Chapter 6 in order to balance it with evaluation feedback while this section describes the final version of the game. The mobile game based learning tool for the MSM peer educators from MANAS Bangla in Kolkata was developed on an already existing text-based simulation game.

The Day of Figurines is played through texts on mobile phones and is developed by the Mixed Reality Lab at the University of Nottingham in collaboration with Blast Theory (Blast Theory, 2008b).

The game for the peer educators or Peer Educator er Ek Din: The final game was called Peer Educator er Ek Din or a day of a Peer Educator. It had four destinations that the players could 'GO' to. These were the Park, DIC, the Railway Station or RS and the Toilet (that is the public toilet). These are all cruising areas the MSM frequent thus are also sites for outreach work by the peer educators. The game started at the destination Metro Rail Station. Most peer educators use the metro rail or underground as it is the fastest mode of travel in the big and crowded city of Kolkata and also because many of the peer educators travel from the suburbs of Kolkata and take the metro rail to travel to the inner city DIC or outreach sites. At each destination each player faces dilemmas, missions and local events to which they respond to via the SMS. Players can also contact other players at his destination via SMS. Day of Figurines was conceptualised as a part board and part SMS game where a map of the imaginary town is displayed on the board. Each player chooses a plastic figurine to which he/she gives a name. As the player moves from destination to destination his figurine also moves accordingly.

Nonetheless the concept of the board as well as the SMS together became complicated for the MSM participants to comprehend, though the presence of the plastic figurines was fascinating to them. In the final game process, the board thus took a subsidiary role and was reduced to nametags on a tabletop as shown in Figure 6.25 although the figurines were chosen and used by the participants as in Figure 6.26.



FIGURE 6.25. NAMETAGS OF DESTINATIONS ON TABLETOP AND FIGURINES USED BY THE PLAYERS DURING FINAL TRIAL



FIGURE 6.26. FIGURINES ON DISPLAY BEFORE BEING CHOSEN BY THE PARTICIPANTS

The figurines from Figure 6.26 were taken by the participants to signify their participation in the game.

User Experience of Peer Educator er Ek Din: As a multiplayer game, a player registers on the online registration form assuming an anonymous name with some details of the figurines and the players' personal information. The description of the figurine is used in the game to describe a player to other players when they encounter them in the game but no personal information is revealed. This form was printed and filled out by hand as the technical problems during the registration process kept occurring and the players felt that the researcher was favouring or selectively picking one over the other.

Upon online registration the players took their figurines and the game card. The game card is a quick reference to the game rules and the destinations as shown in Figure 6.27.

The game rules include going to destinations and facing dilemmas, missions and local events; talking to other players and helping them solve missions and dilemmas. These could be done by using six keywords. Using 'GO' to roam about the four destinations and the start point of the game; 'FIND' to find other players; 'SAY' to speak to other players; 'PICKUP' to pickup objects such as condoms for solving missions such as condom distribution; 'USE' for using objects at destinations or solving dilemmas such as USE tea at a park and 'HELP' to seek help from the operator/researcher.



Peer Educator er Ek Din		
	Khelay Jabar Jaygagulo Holo: <ol style="list-style-type: none"> 1. DIC/DiC 2. Park 3. Toilet 4. Rail Station (RS) 	
Ki Kore Khelbe: SMS er uttar pathao 00447800000364 number e: <p>GO: Kono jaygay jete hole age GO type kore tarpor jaygar (opore lekha) nam likhun. Jamon, GO TOILET.</p> <p>FIND: Onyo player ba jinisch khujte hole FIND type karun. Jamon, FIND ADARSH (Player khujte hole) ba FIND CONDOM (Jinisch khujte hole)</p> <p>SAY: Onyo player-der sathe kotha bolte age SAY type kore tarpor ja bolar bolun. Jamon, SAY kamon acho? (Jotobari kichu bolben totobari SAY bole ja bolar bolte hobe).</p> <p>PICKUP: Kono kaj korte dile onek somoy jinisch PICKUP korte hobe. Jamon, PICKUP CONDOM(CONDOM distribute korte hole), ba PICKUP CHA (Cha khete hole)</p> <p>USE: Pickup korar por jinishtake use korte hole USE type kore tarpor jinisch er nam likhte hobe. Jamon, USE CONDOM ba USE CHA.</p> <p>HELP: Kono asubidha hole ba dorkar thakle Anupama ke 9674995983 number e call karun Number busy thakle Anupama apnake call back korbe.</p>		

FIGURE 6.27: GAME CARD

Once the forms are filled, cards taken and the players assume their anonymous identity they are free to be anywhere they want.

The game destinations were the PARK, TOILET, RAILWAY STATION (RS) and DIC as mentioned in Chapter 5. A player starts to play the game just as he is registered on the authoring tool. Just as his phone number is registered online he receives a message from the game engine as shown in Figure 6.28 and Figure 6.29. Figure 6.29 shows the welcome message as received and shown on an apple iphone; the participants used varied makes of phones in India. The game content was written in Bangla or Bengali. Translated into English the welcome message reads, ‘Welcome to the game Peer Educator er Ek Din. The game has now started’.

Received 12:24 GMT Tue 26 Oct	05:38pm , Peer Education er Ek Din Khela-te swagato janai. Ebar khela suru.
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FIGURE 6.28. WELCOME MESSAGE AS SEEN BY OPERATOR INTERFACE ON THE AUTHORING TOOL. NOTE THE TIME DIFFERENCE

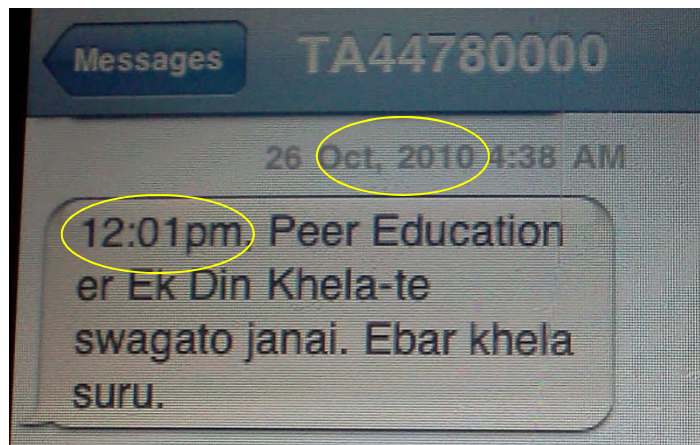


FIGURE 6.29. WELCOME MESSAGE AS SEEN ON PLAYER'S PHONE. NOTE THE TIME DIFFERENCE

There are two times shown in the authoring tool as shown in Figure 6.28. The 'Received 12:24 GMT' indicates the local time to the sender, which was the game engine on the server at the University of Nottingham in UK. The message content time '05:38pm' referred to the fictional game time, which in this case was set to be equal to the local time of the participants' time, that is, the Indian Standard Time (IST). This needed to be set at the time the game was started, though owing to technical problems and the game being delayed, this time was not in sync, as shown in Figure 6.29 where 4:38AM refers to the GMT, this was 10:08 IST but the message reads 12:01pm. This did confuse the players though did not cause a significant problem and was ultimately ignored.

There were four destinations in the game: Railway Station or RS, DIC (Drop In Centre), Toilet and Park. There was also a 'road' which as a location that players passed through when moving from one destination to another. For every hour the game was played each destination was given a description and the road was given two descriptions. This ensured the players received varied content as they explored the game. All descriptions had to fit one hundred and sixty characters of an SMS.

One translation of the destination description is 'Two Parikh's are waiting at the gate. It's 8 O'clock already. The staff are closing the DIC and going home'. Parikh refers to the masculine MSM or the partners/lovers of the predominantly Koti or effeminate MSM who work at the DICs. An example of a description of a road as translated in English is 'The foot path on either side of the tarmac road is crowded with street hawkers and people'.

The game also featured local events. Local events were intended to announce events to concentrate people together at a particular destination with the intention to get

participants to conglomerate and interact with each other, form bonds and play together. An example of a local event is 'There's a Sankho (horn playing) competition today at 5 O' clock at the DIC. ZPM (Zonal Project Manager) declared that there will be SINGARA for refreshment'. Local events also included reminding players about certain missions or events such as condom distribution.

At each destination for every hour of the game one mission and one dilemma was allocated for players to receive. The game was designed to be played from 1200 – 1300 for registration and test playing with an hour's break and restarting the game from 1400 – 2200 hours. The DIC closed at 2000 hours, so in the game no missions or dilemmas were allocated after then at that destination. Missions also made use of Objects, which were items in the game that players could 'PICKUP' and 'USE'. Some of the objects were CONDOMS, LEAFLET, PHONE, MAGAZINE, SANKHO (horn), THIKRI (clapping), DILDO, CHA (tea), DIARY, SINGARA (snack).

The events were verisimilitude of real time and episodes of events as happens in a peer educators' life. In Figure 6.30 the initial content was to rehearse players in using the keywords and to remind that to look for people and object they have to FIND them. Some but not all missions and dilemmas were connected to each other at the same destination within the same hour or across destinations. Dilemmas could be accomplished by choosing option (a), (b) or (c). Mission could be accomplished by going to a destination or using the keywords PICKUP or USE or both; this could have been in relation to using objects such as condoms or food such as singara which is a local snack. On occasions, gestures such as clapping' were also authored as objects due to limitation of the game platform. Rationale behind using gestures to accomplish mission was to represented the peer educators' activities/ways or styles of doing things. Players were made aware that objects were sent in capital letters in the messages.

Figure 6.30 has shown the plan for the final version of the game. An example of a dilemma is 'Depressed client at Park' as shown in 2100-2200 hours at the destination Park in Figure 6.30.

It is 9 O'clock already. You are rushing to finish off work. Suddenly a client pops up and says he/she will put him/herself in front of a train. You: (a) Pacify her, (b) taunt by saying what's the point in Koti's staying alive?

Choosing (a) the response message was 'The Koti was distraught, wouldn't listen to anything. You say, "Your whole family relies on you. Who is going to take care of them if you die?". Listening to you he calmed down'. Upon choosing option (b) the response message was 'Talking nastily at the fag end of the day made you feel horrible. Hearing you the Koti just disappeared. Now you feel troubled worrying what if something happens to him/her. You are trying to call him/her'.

An example of a mission at the early stage of familiarising participants with keywords is:

New Task: You are at DIC. There are some SINGARA (snack) on the plates lying around. Eat SINGARA. To eat, PICKUP Singara, then USE Singara. Your mission will then be successful.

At a later stage of the game play another example of missions is: New task: You are at the Park now. It's time for CONDOM Demonstration now. Distribute some CONDOMS.

To accomplish the mission the player would have had to PICKUP (from DIC or wherever there is a CONDOM) a CONDOM and USE it at a destination. Getting a mission at a destination did not necessarily implicate that the mission needed to be accomplished at that particular destination. As per the real life experiences of the peer educators they would have known what to do such as CONDOM can be distributed at any destination where there is a client. Accomplishing a mission would involve carrying a CONDOM to a destination and receiving a message saying 'You have brought the CONDOMS from the DIC and distributed to the clients at the park. Your task had been accomplished especially because the client who usually rejects the CONDOMS too has taken it. That's quite fantastic. Now get going'. Bear in mind, best efforts have been made to translate the MSM style of working and speech.

	1200-1300	1300-1400	1500-1600	1600-1700	1700-1800	1800-1900	1900-2000	1900-2000	2000-2100	2100-2200	
DIC	Talk	Registration and Discussion	Eat SINGARA (snack)	SANKHO (playing instrument) Competition	Outreach Worker mess up	Meeting for street drama	Fighting between peer educator and ZPM	ICTC is closing	DIC closed	DIC closed	Dilemma
	Find/Say		Pick up and Use SINGARA	Play SANKHO	Call Zonal Project Manager (ZPM)	Use meeting minutes	Go to field with CONDOMS	DIC closed			Mission
PARK	Talk		Converse with client	Your WIG fall off infront of Parikh	Police harassment during Condom Distribution	Koti trying to chop off his/her dick	Harassment from dada	Quiz at park	Eat FUCHKA (street food)	Depressed client	Dilemma
	Find/Say		Drink TEA	Put back WIG	Call ZPM	Distribute LEAFLET	Use CONDOMS	Call for TEA	Eat FUCHKA	You lost PHONE	Mission
RAILWAY STATION (RS)	Talk PLHA		Buy SINGARA	Conversation with Chibri	Motivate client for ICTC	Harassment from Railway Police	Eat SWEET	Harassment from local dada	Train cancelled	Singsong with clients	Dilemma
	Find/Say		Pickup and Use MAGAZINE	Drink TEA	Distribute LEAFLET	Call advocate	Use CONDOMS	Advocate with Rapid Police Force	Catch a BUS to go home	Feeling good. Go home	Mission
TOILET	Toilet Empty		Approach Chibri	Approach Chibri	CONDOM Demonstration	Drunkard at toilet	Motivate clients for ICTC	Koti causing trouble	Clients shag without condoms	Cat jumps on Koti	Dilemma
	Poster		Distribute CONDOM	Distribute LEAFLET	CONDOM Demonstration	Talk to others	Give CONDOMS	Retaliate back with CLAPPING	Kick off	Talk to client	Mission

FIGURE 6.30. GAME CONTENT PLANNING CHART SHOWING EACH DESTINATION AND MISSIONS AND DILEMMAS ALLOCATED IN EACH HOUR TIME PERIOD

6.14 Discussion

This section reflects on the choice of methods in the design process and the results achieved. The focus groups were intended to identify and prioritise the issues to be used for game storyline and scenarios. The discussion in the focus group was intended to allow the participants to share and reflect upon each other's view. Having conducted the focus groups it was seen that there was a lot of tension and power dynamics between the participants particularly some instances are noteworthy. The inclusion of the outreach workers as a participant in the group initially prevented the peer educators from saying what they wanted to say in fear of backlash once they go back to their work where these outreach workers are their supervisors or things will be reported back to their supervisors by them. This was also evident with the previous baseline report where they have reported having problems with MANAS Bangla staff. But where the outreach workers relaxed and encouraged the peer educators to speak openly reflected on how the peer educators interacted in the workshops. It was also noted that members from different DICs were always not comfortable with one another and were often antagonistic with presumptions towards each other. These differences would appear to dissipate towards the end of the workshops where they would often sit with each other and chat or exchange phone numbers while previously they might have called the researcher to avoid other individuals at the workshops. Another issue was about dominating and passive participants especially if one would comment something out of the norm. For example, one of the peer educators reported that he would seduce and spend time with his clients before doing peer education (given the backdrop of baseline reports showed that peer educators were called *blood suckers* because they would recruit clients for voluntary blood testing for HIV). The majority of the group instantaneously tried to hush him down as it was against guidelines even if later they revealed they did similar things given the pressure to reach out to seventy clients per month. The impact these had on the focus groups was that more time was taken in prioritising the issues as discussions would become long winded whilst debates were resolved.

The game design workshops were more complex than planned. It became harder to make progress in the task in developing scenarios for the game as now it was actually sitting down with the game components and explaining it to the participants so that they can conceptualise what the game is and what are they doing and what is required of them. They took a lot of interest in the plastic figurines that were provided to them as anonymous characters they would play in the game. This appeared to be more an

inspirational tool to start conversations so did designing the map of the sites thus showing keenness to tangible objects they could conceptually concretise. In contrast the paper prototyping seemed a complex and less inspirational task. Often participants were more keen on flirting with each other than the task at hand or would come back with the same example as given by the researcher to them. This makes strong argument in importing a western exercise to a social and cultural setting without a tradition of participation and where individuals' opinions are not respected or sought.

In contrast to importing a western exercise to a marginalised setting in India, translating the game and MSM language and culture into something understandable in English for the UK based trials was also similarly difficult. Trialling in Nottingham was intended to test the underlying academic concepts of developing the game, check whether it is working or not, and refine the strategies as well but it was observed that the cultural difference in the ideas of entertainment and engagement played a role in translation. Nonetheless the iterations were useful and gave insight into making the game useful to the peer educators. For example, one of the participants in Nottingham advised using non-player characters as objects, such as if scenarios needed the presence of an outreach worker or client at a location, the player could 'PICK UP' an outreach worker, then 'DROP' them, or to make the number of game locations fewer, so that players would bump into each other. Not all the suggestions were incorporated into the game, but they were critically reflected upon for further refinement, and also discussed with participants in India, such as the concept of the non-player characters which did not become ultimately part of the game.

6.15 Conclusion

This chapter has documented the game development process, describing the focus group discussions, game development workshops and game pilot trials that took place. These allowed the Day of Figurines game content to be created, determining destinations, storyline, missions and dilemmas for the final game trial.

The initial interview data from baseline were successfully used in workshops to create game content. Lots of materials were produced to create complex contents which were later simplified through the iterative process. A difficulty was in translating MSM Bangla to English, the concept of a pervasive game to a marginalised group, as well as translating the marginalised groups' understanding of motivation and engagement to the western theories of learning.

Understanding of the concept of the game and how to play was a continuous difficulty faced by players at all stages both in India and the UK. In the final game the board element of the game was dropped and only the plastic figurines were used to ease comprehension.

The following chapter will now go on to describe the final game trial, including the game in its final form and will evaluate how the game was played and experienced by the MSM peer educators.

CHAPTER 7. Final Trial of the Pilot Game

7.1 Introduction

This chapter gives an account of the final game trial, specifically looking into what was planned and what actually happened during the deployment. This gives the detail of how the trial was conducted and is useful in understanding the challenges that affected the game play in terms of both working with the participants and the technical infrastructure between UK and India. It is also important in understanding the participants' feedback during evaluation. This information can further be used as guidance for future development and deployment of similar SMS based applications.

7.2 Aim

The object of the trial for a selected group of peer educators to play the designed game in order to conduct an evaluation of the game as an effective learning and support tool for MSM Peer Educators in India. The game was to be played over a period of 10 hours after an initial 2 hour registration and training period immediately beforehand.

7.3 Method

All participants were verbally informed of the aims of the research by the researcher. As described by Morse and Field (1995) and Silverman (2005) measures were taken to ensure that participants throughout all the processes were fully informed of the nature of the research, the demands placed upon them and how the data will be utilised. This information was given in writing and verbally prior to process. Participation was voluntary and informed consent documented.

In order to send SMS messages to the (UK) phone number required by the game all the participants except one needed their pay as you go credit topped up for international network traffic. The exception was one participant who had a phone contract and was compensated accordingly. A local distributor was requested to top up the credits for each participant upon pre payment by the researcher.

The following table gives an overview of the planned schedule for the day of the game.

Time	Planned Event
1100 - 1130	Meet all 16 participants and register them for the game at MANAS Bangla (rented venue)
1200 - 1300	Getting the phones to work and sending the first set of messages
1300 - 1400	Lunch break and time allotted for participants to return to their own business
1400	Scheduled game trial begins with welcome message
1400-1500	Familiarisation content to remind the players about keywords and game rules for example type go to go to a destination.
1500	Main game content to begin
2200	Game trial ends and the closing message is sent

TABLE 7.1. PLANNED SCHEDULE FOR THE FINAL GAME TRIAL DAY

7.4 Limitation of the Method

From the technical point of view the players were based in India but had to interact with a UK phone number to talk to other players in the game. This is a potential hindrance because there is a cost implication more so if it is to be owned by the community as a support tool for peer educators. In addition it can be more unreliable communication than local SMS. Downtime (maintenance time) is not in line with the participants local time, thus if a maintenance work or technical support is required which is out of hours for UK, the game play will be jeopardised.

This is a pilot study and thus is played within a small group of participants. If this game is run on a full scale with more participants and over a longer period of time, the experience of the game might be completely different. Also, participants may not understand the difference between a pilot study and a final version of the game. Thus they might have expectations that this is a perfect version of the game with no bugs and no problem and a more richer and smoother experience, which this pilot version may fail to provide.

7.5 Participants

7.5.1 Selection Criteria

This trial uses purposive sampling. Section 5.3.2 and 5.3.2.1 states the setting of MANAS Bangla and the rationale for using purposive sampling. Schatzman and Strauss (1973) state that the researcher sample people according to the aim of the research which may include categories of age, gender, role and function in the organisation et al. The number of participants for the game trial was determined by a

number of factors, first there were two zones including four DICs at MANAS Bangla. Representation from each of the four DICs was taken to provide fair participation to each location and to give view points from each DICs. This was the ongoing criterion for selecting participants throughout the process in addition to paying heed to participants' preference and availability. For this particular trial, other factors that were considered were limited resources of the orchestration of the trail and there factors that needed to be taken into account were registration of the participants, re-familiarising them with the game and its rules, registering their phone on the game engine, troubleshooting and supporting the players and also providing credit on their phones. Thus efforts were made to have a sufficient number of participants to play the game effectively. There were four destinations to move around in the game excluding the Road (transit route to destinations as in real life roads) and the Metro Station (game started at metro station and players moved away as they started playing). This meant that there needed to be enough participants at each location so that players can meet each other and communicate but not so many that it would become overcrowded and they cannot enter the destinations. To mention here as well, in the design process the number of destinations was finally decided to be few so that players can meet each other and interact in the game and do not roam about alone. This pilot selected sixteen peer educators and other associated staff experienced in outreach work. Some of these participants were previously peer educators, have been involved in the game design process but have now moved on to a different position (given that eight participants were from game design process and eight new players).

7.5.2 Profile of Selected Participants

The SMS game was trailed in Kolkata on October 26, 2010 with sixteen participants from zone 2 and zone 3 of MANAS Bangla. The sixteen participants were not just peer educators but Outreach Workers (popularly known as ORW), Shadow Leader, Community Mobiliser and Community Advocate as in their roles at MANAS Bangla. These were the new positions that came along within the organisational structure of the MANAS Bangla DICs. These were field work or outreach positions recommended by the National AIDS Control Organisations for better reach out to the higher at risk community. Many but not all of these new position holders were previously peer educators and were part of the game development process. Thus the final trial involved not only peer educators but other participants from the DICs who have been peer educators before or have field experiences. Eight of the participants were recruited from the game design process and eight participants were completely new to

the game so as to see any difference in the game play experience or approach. Although this was planned, due to logistical reason of the peer educators this division according to being involved in the process and not was not possible to do during the evaluation feedback. Focus group discussion for the evaluation was divided into two groups according to the zonal area from which the peer educators came.

The participants' average age was 24.19, years the youngest being 17 and the oldest being 47 years old as reported on a record sheet for the researcher's reference. It emerged during the evaluation that one of the participants was below the age of 18 years, that is the legal age for consensual age of male to male relationship in India. In this situation after consultation with MANAS Bangla the decision was to use the participants' feedback as data for the study rather than to discuss. To mention here that initial and ongoing communication with MANAS Bangla members revealed that many of the MSM are below the age of 18 and practicing consensual sex for various reasons although the national age of consensual sex for MSM is 18 as mentioned earlier in the background chapter. For example one of them mentioned that often poor young boys will have sex with an older boy in exchange of payments such as snuff or cigarettes to curb their hunger. At the beginning of each process the researcher had visited each DIC and briefed all staff about the research and the regulations of the research. At the time of selecting participants for the final trial it was reiterated that the minimum age of the participant needs to be 18 years which was confirmed by the participants at the time of selection. There is some ambiguity about the exact age of participants as another participant who was part of the first game design process in 2008 claimed to be 46 years old and claimed to be 47 years old during the final trial conducted in 2010. The MSM identities as reported by the participants were five each of Transgender or TG, Dupli and Koti. One participant reported being a Koti and TG. For detailed description of identities please refer to Chapter 2 Section 2.2.1.

Eight participants were from zone 3 that is Shobhabazar and Dumdum DICs in Kolkata and eight participants came from zone 2 that is Belegghata and Kasba DICs in Kolkata. The education levels of the participants as self reported are in Table 7.2. The education level show an example of education level among the peer educators and indicate that they are able to read and write confirming their claim to be able to read and write an SMS when asked during selection process.

Upto Class 8 in school	2
Passed Madhyamik or Secondary Examination	1
Upto Class 12 in school	1
Passed Uccha Madhyamik or Higher Secondary Examination	1
Failed Uccha Madhyamik or Higher Secondary Examination	1
BA (Bachelor in Arts)	4
BCom (Bachelor in Commerce)	2
BSc (Bachelor in Science)	2
Graduation	1
MSW (Masters in Social Work)	1
Total	16

TABLE 7.2. EDUCATIONAL LEVELS OF PARTICIPANTS

The years of experience of working with MANAS Bangla as reported by themselves were: five participants reported working for less than a year at MANAS Bangla, one each reported respectively working for one, two, three, three and a half, four and a half and six years while two participants reported working for four years and three for five years. The designations of the participants at the time of the final trial as self reported were seven peer educators out of whom six worked for less than a year and one for a year while the seventh peer educator worked at MANAS Bangla for three years. There were four Outreach Workers, two Community Mobilisers, two Shadow Leaders and one described himself as a Counsellor and Clinic Assistant and Shadow Leader.

7.6 Deployment in Kolkata, India

7.6.1 Technical Structure

The original Day of Figurines (DoF as in Figure 6.1) ran on the ‘Kerouac’ server based at the Mixed Reality Lab at Nottingham, the Kerouac server had two pieces of software:

- (a) The game engine, and
- (b) The SMS Proxy

The SMS proxy relays messages to and from a SMS Gateway Company which in this case was Esendex¹⁴ and was funded by the Learning Sciences Research Institute at Nottingham. The SMS Gateway Company relayed messages between the game SMS proxy and the players. Esendex is a UK based company for SMS services connecting to the mobile phone network providers in India. The mobile phone network providers in India were Airtel, Tata Indicom, Docomo, Idea and Vodafone. Figure 6.1 gives a diagram of the system framework. Understanding the diagram will help understand the technical challenges which affected the game play.

The diagram shows how SMS messages are relayed through the system. The Game engine which can be monitored via the authoring tool sends and receives messages from the SMS proxy. The SMS proxy relays the messages to the SMS gateway provided by Esendex. For testing the game without actually sending messages to the mobile phones a SMS simulator was used. Therefore the SMS proxy determines whether the SMS are sent to the simulator or the SMS gateway. During the actual trials the SMS gateway was used and not the simulator. The SMS gateway run by Esendex sent messages to the mobile phone operators in India.

Participants send messages to the game engine from their phones to the UK phone number provided by Esendex which was 00447800000364. The Indian mobile phone network providers sent the SMS messages from the phones to the Esendex SMS gateway. The gateway passed the messages to the SMS proxy and this was passed to the game engine. The SMS messages received by the participants should have appeared to have come from the UK number given above allowing them to directly reply to the SMS messages, however this was a cause of problems as explained below.

¹⁴ Esendex, 2011, Bulk SMS, [online] available at <URL:
<http://www.esendex.co.uk/Services/BulkSMS>

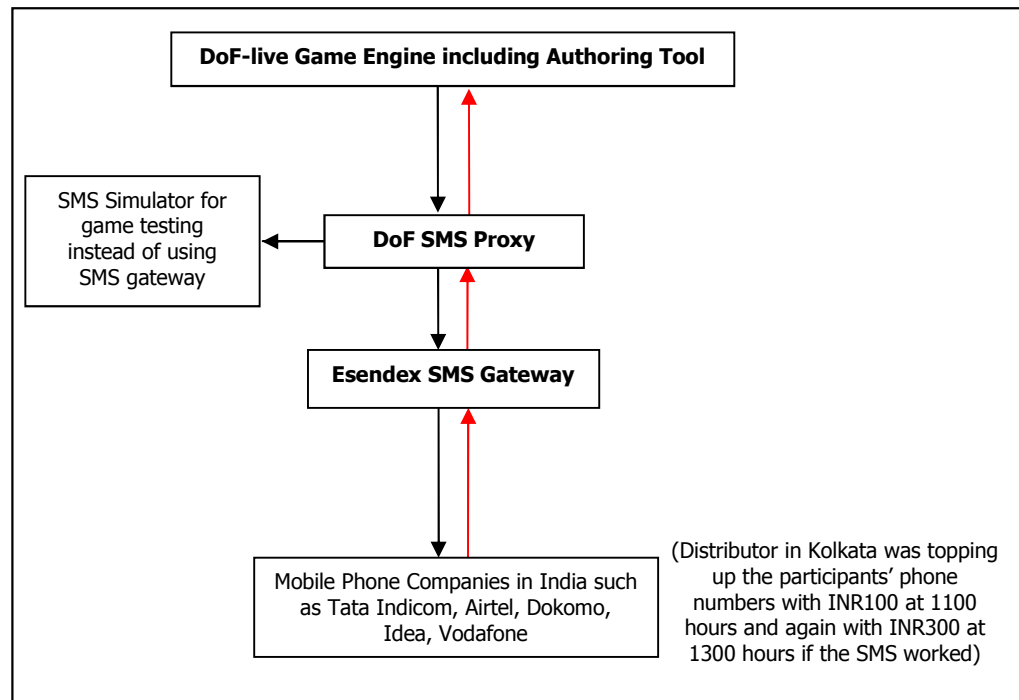


FIGURE 7.1. DIAGRAM OF THE SYSTEM FRAMEWORK

7.6.2 Problems Experienced During Set-up

A significant problem experienced during the set up of the game related to the Indian mobile phone network's regulations on bulk/automated SMS messages, which is described in detail below. In short, this problem prevented participants from receiving and sending messages from and to a single mobile phone number as per a normal SMS conversation. This problem is described as experienced in order to shed light on the kind of difficulties faced as well as giving detail on the problem where it may affect the participants' experience of the game itself.

The final trial was planned so as the participants could learn about the game and how to play it in an earlier workshop followed by playing the game on another day according to the schedule of the authored content after registration. In practice the initial workshop took longer than scheduled and overran to another session compounded by with the same technical problem as experienced during the fourth iteration of the game development. Participants could receive messages on their mobile phones from the game but messages were not received by the game engine even though their phone indicated that the message has been successfully sent.

Given the persistence of this problem and at the time lack of solution contingency plans were put in place to allow the game to be played and evaluated, in doing so this affected the actual game play on the day. The contingency plans were:

- a. In case of the problem was found and fixed, the game would be played as intended with the local distributor (as mentioned in Figure 6.1) topping up their credit balance.
- b. In case the problem persisted, participants would play the game using brand new Indian SIM cards with international SMS already activated and tested.
- c. Use British SIM cards which would avoid the problem with international SMS.

In preparation for the above mentioned plans were the distributor was asked to credit the phone with a small amount at first to allow testing. If successful, credit further. In preparation for plan (b) several Indian SIM cards were bought with sufficient credit to allow game play. In preparation for plan (c) several UK pay as you go SIM cards were bought with a sufficient credit to allow game play. The contingency plans were put in place whilst investigating the problem.

Investigation suggested that the Indian SMS network provided an incorrect reply number to the incoming Esendex messages from the UK. This was caused by the Indian policy for bulk SMS, that is, SMS messages originating from an automated service rather than individual people. According to the Telecom Regulatory Authority of India regulations¹⁵ the reply number was changed to comprise of a two character prefix added to only eight characters supplied by the sender. Any additional characters supplied by the sender over the limit of eight were removed. In the case of the Esendex number, a full reply number for the game was 447800000364. This was modified by the Indian SMS network as TA44780000 when it arrived on the users' phones. When participants replied to these messages their messages were sent to the incorrect TA44780000 rather than 447800000364. The result was that the phones indicated a message had been sent successfully but the message did not arrive at its intended destination - the Esendex SMS gateway and ultimately the Day of Figurines game engine. Having identified this, the game was played according to plan (a) as mentioned above but participants were asked not to use the "reply" function on their

¹⁵ TechBangalore, 2011, You Have Been Receiving SMS Codes: TA-ICICI, AX-AIRTEL...And Wondering What's It?, [online] available at <http://www.techbangalore.com/you-have-been-receiving-sms-codes-ta-icici-ax-airtel-and-wondering-whats-it/>

phones to respond to game messages and instead to store the game engine number 447800000364 in their phones and send responses directly to that number.

7.7 Events on the Day of the game

Referring back to the plan in Table 7.1, the table below gives the schedule of events that happened on the day.

Time	Actual Event
1100 - 1500	Meet all 16 participants and register them for the game at MANAS Bangla (rented venue) SMS proxy crashed at Nottingham (meaning messages could not be relayed)
1500 - 1800	SMS proxy crashed at Nottingham
1800	Game trial began with welcome message
1930	SMS proxy crashed at Nottingham
2030	SMS proxy started, game resumed
2140	Esendex credit ran out meaning no more messages could be sent to players
2200 - 2300	Players called by researcher for evaluation time confirmation and to say thankyou for playing

TABLE 7.3. ACTUAL SCHEDULE FOR THE FINAL GAME TRIAL DAY

Registration for the game took longer than expected, for several reasons:

- The participants needed to be re-familiarised with the game concept, rules of play and keywords.
- The SMS proxy component of the game crashed several times, each time the SMS proxy crashed it was not immediately clear what the problem was and the process got delayed. To mitigate this, the online registration form was printed and distributed among players and entered on the game engine to save time. The process of registration had to be restarted upon the SMS proxy restarting at Nottingham but having the details in paper form prevented having to repeatedly ask participants.
- The mobile phone distributor delayed topping up the credits to participants phones and they were not done all at the same time. As well as adding delay, this made some participants feel that the researcher was showing favouritism towards those whose phone credits were already credited.
- Some Indian networks had problems sending and receiving messages and customer service had to be contacted by the researcher to resolve the issue.

During the remaining game play time, the game was disrupted once due to a crash of the SMS proxy, and then due to the amount SMS credit with Essendex running out, meaning no further messages could be sent.

The game was played in actual for two hours forty minutes excluding the times when messages could not be delivered. The next section details some of the data about the game play as gathered from the system logs and integrated reporting in the game engine authoring/orchestration interface.

7.8 Data from Final game trial logs

The total number of messages sent by the game engine was 1448, and 645 were received by the game engine from the players from game play time of 1800 to 2140 hours as explained in the above section. Throughout the game 18 missions were allocated, of these 7 were completed and 6 timed out. In the game 8 dilemmas were sent, none were recorded as being responded to and recorded as timed out (although players mention accomplishing them at evaluation interview. This might be due to technical faults). The maximum number of messages sent by a player was 52, the minimum was 1, and the average was 19.35 messages. The figures are given in detail in Table 7.4 and Table 7.5. The total sent messages by players include 1-2 update messages sent to the game engine on behalf of the players by the researcher.

Total Number of Messages Sent:	1448
Total Number of Messages Received:	645
Missions:	
Number of Missions Allocated:	18
Number of Missions Completed:	7
Number of Missions Timed Out:	6
Dilemmas:	
Number of Dilemmas Allocated:	8
Number of Dilemmas Responded To:	0
Number of Dilemmas Timed Out:	0

TABLE 7.4. GAME STATISTICS AS GIVEN IN THE ORCHESTRATION INTERFACE

P568_Rick	20
P569_Suro	8
P570_samy	12
P571_Jenet	52
P572_Puchun	42
P573_Tina	17
P574_Dona	33
P575_Janam	13
P576_sSrilekha	25
P578_Ritesh	33
P578_Ritesh	20
P579_Romen	19
P581_Rakshanda	17
P582_Babo	9
P583_Lily	2
P584_Juthika	1
P585_Abhradeep	6

TABLE 7.5. TOTAL NUMBER OF MESSAGES SENT PER PLAYER (ANONYMOUS PLAYER NAME SHOWN IN THE TABLE ABOVE)

The most used action in the game was ‘SAY’ with a total of 157 instances. The next most used action was ‘GO’ with 57 uses, and ‘FIND’ with 43 uses. Totals for all actions are given in Appendix 6. Appendix 6 shows records of which player are at the PARK, DIC, RAILWAY STATION or RS and TOILET through the hours of the game. In conclusion, it can be said that the players did play the game in spite of the technical problems. Some of the missions were completed but none of the dilemmas were responded to; the dilemma responses were not logged in as responded to although the total number of messages received from all the players were 645 messages. Given that the most used action was SAY it can be said that players conversed more than they performed action although they went around destinations by using GO which is the next most used keyword and looked for people or objects as justified by their use of the keyword FIND as the third most used keyword.

7.9 Conclusion and Discussion

This chapter has described the deployment and evaluation of the final game that was trialled with a group of sixteen peer educators in Kolkata, India. The details of the final game deployment were given, outlining the technical and logistical set up required and the problems encountered experienced during the process. The planned schedule of the trial was outlined and the actual events that took place were also described and explained in this chapter.

The technical set up provided for SMS messages to be sent and received from the game participants in Kolkata, India to a server located at the University of Nottingham, UK. This required messages to be passed via an SMS Gateway provided by a company called Esendex also based in the UK and the Indian mobile phone network. An Indian mobile phone distributor added credit to participants' mostly pay as you go phone accounts in order to send messages. Problems were experienced due to Indian telecommunications regulations that required that SMS 'reply to' number be altered when messages were delivered using this method, meaning that participants' reply messages were being misdirected. Having discovered this, the participants were asked to send reply messages to a given number directly rather than using the 'reply' functions on their phones. There were also delays in the distributor adding credit to the phone accounts. These technical problems contributed to the playing of the game and participants' feedback.

The schedule for the trial allocated time to register participants and familiarise them with the rules of the SMS game. On the day these activities exceeded the time set aside as participants required a greater level of familiarisation than anticipated and technical problems slowed the registration process. This included parts of the game software crashing and difficulties using international SMS with the participants' individual mobile phone providers. This impacted upon the amount of time the game was played for, as did an additional problem whereby SMS messages were not sent during the last few minutes of the game play time.

This chapter showed that the game actually worked intermittently from 1800 to 2140 hours on the day of the game play instead of working from 1400 to 2200 hours as planned. There were technical problems that the researcher had not anticipated such as breakdown of the SMS proxy, traffic on the SMS network locally and internationally causing delays in receiving/sending messages and the SMS credit running out on the bulk SMS provider by which time it was midnight in the UK and the account notification was sent to a UK technician. Literatures say that SMS is ubiquitous, low cost and easy to use but this only relates to delivery medium. More interactive systems such as this game requires additional infrastructure, resources and support and it can be seen that it can be hard to implement in a resource constraint setting. Researchers are faced with a choice of locating all infrastructure locally in the area of their research or splitting the infrastructure between the area of research and a location with more readily available facilities. Finding local support includes that they might or might not be reliable, might have a language barrier, supporting staff might not have

technical competence to support such a game or hiring skilled people might not be cost effective.

As a counter point to the problems experienced being attributed to the international nature of the deployment, the Day of Figurines as an entertainment game has already been successfully deployed internationally in its original form showing that such enterprise is feasible. Simply the difference here is in resourcing as in those cases a production team was in the field providing significantly more support. But this brings in another dimension to this argument from the perspective of M4D (Irani et al., 2010) and its debates on bringing a western technology to the global south for use locally without any local involvement in its creation and then leaving once the deployment is over.

Recalling the objective of this study, the aim was to generate knowledge about the value of a SMS game to support a marginalised group of peer educators in a resource constrained setting. The next chapter will perform a detailed evaluation of this from the participants' feedback as well as using data from the game logs as stated in this chapter. But to conclude here, it can be said that the game was sufficiently played to generate data for evaluation bearing in mind that this is just a pilot trial and also that limitations imposed by the problems as described in this chapter. The problems contribute toward the evaluation as well as providing an account of the deployment which can be of use to future or similar work.

In light of what is known now, decisions made in deploying the trial mostly still stand justifiable though it can be seen that more time should have been invested on familiarisation and registration for the game to the participants but that meant using more of their already over burdened time as a peer educator as MANAS Bangla employee having other commitments as well. Thus being in a resource constraint setting these factors add additional constraints to a technical deployment and should be considered while evaluating or planning such a project.

The next chapter will analyse the findings from the evaluation and give the evidence to show whether this intervention achieved its objective or not. Whilst this chapter has been more descriptive in nature, what follows will do the bulk of the analytical work.

CHAPTER 8. Evaluation of the Game

8.1 Introduction

This chapter describes evaluation of the SMS game. This includes in majority evaluation of the final trial deployed in Kolkata, India but also includes references to the design process as some of the participants were involved and referred to it in the follow up evaluation. The last chapter detailed the final game trial describing the process and the issues encountered in its execution. An evaluation of the final game trial was conducted with the participants after the game play involving focus group discussions the day after the game was played in Kolkata. Follow up interviews were conducted three months after the game play to assess long term effect of the game, if any. An analysis of the evaluation is captured in this chapter.

8.2 Aim of the Evaluation

Recommendations from literature in Chapter 3 Section 3.3 have provided the aims of the intervention where the needs of the peer educators are:

- a. To develop a wider knowledge base than just imparting HIV/AIDS information, that is, more collaborative and dialogic approach in the way they impart knowledge.
- b. To focus on risk behaviour change than HIV/AIDS facts and critical thinking power.
- c. To develop confidence and technical competence as mentioned in (b).
- d. To develop communication and group work skills.
- e. To share experiences and pass on lessons learnt.

The aim of the evaluation was to gather evidence to show whether the participation in the game had any effect in relation to these recommendations. It should be noted here that the baseline and the game design also touched upon these issues. This chapter will only look into the evaluation data after the final game play. A wider view will be taken in the next chapter that concludes this thesis.

8.3 Method of Data Collection

The methods used for evaluation data collection are focus group discussions and follow up interviews. As mentioned in the previous chapter there were sixteen participants playing the final game from zone 2 and 3 of MANAS Bangla. The details

of the participants are given in Chapter 7 Section 7.5. The following gives a rationale to why the methods were chosen.

8.3.1 Focus Groups

Two focus group discussions were conducted the day after the final trial with eight participants in each group. The game participants were selected in two groups of those who previously have been involved in the iterative game design process in part or full. The focus group was divided mostly based on where the participants were coming from that is the zone 2 or zone 3 of MANAS Bangla programme intervention in West Bengal. The grouping according to zones was in keeping with the participants' convenience to attend the focus group and the time schedule. There were eight participants from zone 3 and eight from zone 2. Participant P13 from zone 2 attended zone 3 focus group. This did not have significant impact on the discussions. The focus groups were voice recorded upon informed consent.

Focus groups capitalise on group interaction as part of information generation (Kitzinger, 1995). As referred in Chapter 4 Section 4.5.4 participants are owners of their own knowledge (Barbour, 1995, Cornwall and Jewkes, 1995, Freire, 1996). This knowledge is important to capture especially because this project is limiting the participatory approach by using an already existing game as mentioned in Section 4.4.4. Thus the participants were not able to design their own solution but going through the process it is now possible to gather an insight into what this game did not achieve as well as what was. The use of focus group discussion as a research tool has already been discussed in Chapters 4 and 6. This will not be re-iterated here but this section will look into the rationale for using focus group for the evaluation.

Mitchell and Branigan (2000) explain how focus groups can be used for evaluation to

- (i) Explore changes in attitudes following an intervention
- (ii) Evaluate the perceived effectiveness of an intervention and suggestions for improvement by those participating in a programme
- (iii) Discuss intended behaviour changes among the recipients.

Attitude change was a key element in meeting the objectives of the intervention given above. This includes changes in attitude toward the delivery of the health information and peer education approach (toward a more dialogic practice), improvement in

confidence, attitude toward mutual support and the feeling of being supported in the field.

Perceived effectiveness was of particular interest. Following the participatory nature of the work, providing an intervention seen to be effective by those involved was a key element, as this validates the value of the input and cooperation of the peer educators throughout the research and gives an indication on how well the participants were engaged and their input translated into a practical, effective reality. Further to this, as mentioned above, suggestions for improvements by participants is also of importance in understanding how suited an SMS based game is to meet the needs of the peer educators.

Finally the focus group provided the opportunity for the peer educators to reflect and develop opinions enabling them to reflect upon issues they might have not had the confidence to give. It can also be mentioned here that most of the players of the game played the game on their own after registering for the game and once it was running. The focus group feedback allowed reflection on the objectives of the research and to create an understanding on how well the identified needs reflected the peer educators reality in practice, whether they were appropriate or not, considering the previous literature and baseline study. Reflecting on the whole project is reserved in the most part for the following chapter, where the intervention in its entirety will be discussed.

8.3.2 Follow-up Interviews

Follow up interviews were conducted three months after the game trial with the intention to evaluate lasting effects of the game. Of particular interest were (i) community building – that is friendships and relationships formed through the game, and (ii) peer education practices, whether the game had a lasting effect on the way the participants conducted their work.

The interviews were semi-structured interviews conducted as per the baseline study (Section 5.3) and mentioned in methodology (Section 4.5.3) but conducted over phone with hand written notes. Interviewees were made aware of this and were requested to speak slowly in order to be able to write what they said. The follow-up interviews were used to gauge the lasting effect of the game on the participants from MANAS Bangla. In this instance the scale of the trial combined with the timescale of the thesis determined the follow-up interval of 3 months and not later.

8.4 Method of Analysis

Material collected through qualitative methods is invariably unstructured and unwieldy. A high proportion of it is text based, consisting of verbatim transcriptions of interviews or discussions, field notes or other written documents. Moreover, the internal content of the material is usually in detailed and usually are accounts of experiences, descriptions of interchanges, observations of interactions et al. The qualitative researcher has to provide some coherence and structure to this cumbersome data set while retaining a hold of the original accounts and observations from which it is derived. All of this has implications for the methods of analysis (Bryman and Burgess, 1994).

Qualitative data analysis is essentially about detection of evidence related to the aim of the research and the tasks of defining, categorising, theorising, explaining, exploring and mapping are fundamental to the analyst's role (Bryman and Burgess, 1994). Qualitative Data Analysis thus is the range of processes and procedures that takes qualitative data (such as interviews, focus group discussions etc) and translates them into explanation, understanding or interpretation of the people and situations being investigated. The objective is to examine qualitative data by looking at the meaningful and symbolic content, that is, by analysing a data a researcher may be attempting to look at:

- Why people have a point of view,
- How they came to that point of view
- What they have been doing
- How they conveyed their view of their situation
- How they identify or classify themselves and others in what they say

The process of analysis usually involves writing, identification of themes, coding of themes (applying labels to them that indicate they are examples of some thematic idea), interpreting (applying meaning/logic to the categories as stated in the bullet points above)¹⁶. Each participant is given a code name in order to maintain anonymity and addressed to with their code names in the analysis.

8.4.1 Analysing Focus Groups and Follow up Interviews

Focus group methods evolved out of research methods designed by Paul Lazarsfeld, Robert Merton and colleagues at the Bureau of Applied Social Research at Columbia University to gauge audiences response to propaganda and radio broad cast during World War II (Merton, 1987, Bertrand et al., 1992, Kidd and Parshall, 2000). Merton

(1987) maintained that group interviews could either release or increase inhibitions among group members depending on the topic and group composition. Advantages of group interaction were viewed as broader range of responses and elicitation of details that might otherwise be overlooked and disadvantage included side tracking to irrelevant issues, competition for dominance among group members. The most salient feature of focus group interviews/discussions as opposed to more conventional interviews was that interviewees were known to have experienced some particular concrete situation which became the focus of the interview (Merton and Kendall, 1946). In this case the game experience was the particular situation experienced by the participants and this was the focus of the interview.

In this project the feedback focus groups were audio taped and transcribed. On the day of the data collection, following each focus group the researcher captured debriefing notes to identify issues that may affect analysis (e.g. domineering or quiet members), note what went well and what did not. A major difference between individual interviews and focus groups is that in interviews it is clear who is speaking. In focus group it is often easier to audiotape and easier to transcribe than videotaping but this does leave room for doubt about who said what or audio might be sometimes inaudible. But regardless of recording method, if a discussion gets lively and everyone talks together, even the best transcription will not reproduce a session completely (Bertrand et al., 1992, Kidd and Parshall, 2000, Smithson, 2000). Denzin and Lincoln (1994) add that reconvening a focus group at a particular time might often be impractical and even when done the group dynamics might not be the same thus the moderator should present any tentatively identified issues to the members of the focus group for confirmation and clarification. This was practiced by the researcher in the focus group and in turn validated the data. Denzin and Lincoln (1994) also add that the researcher should discuss with the research team these issues and the impressions of agreement, expressed or nonverbal dissent or coercion during post session debriefing. As part of the project the researcher debriefed back to the three supervisors over skype shortly after the focus groups were conducted.

There is a controversy about whether the individual or group is the unit of analysis in focus groups (Carey and Smith, 1994, Carey, 1995, Morgan, 1996). Kidd and Parshall (2000) suggest neither as the unit of analysis but either or both might be the focus of analysis. They add that the best strategy is to devise analytical approaches sufficiently flexible to identify any if the group is unduly influencing individual or vice versa before drawing any conclusions.

The aim of the analysis is to identify areas of agreement or disagreement and how those opinions are derived or changed during the discussions. It is important for the researcher/analyst to identify where the view points are given because of bias or coercion by the group process (Carey and Smith, 1994). Giving a result of a discussion often comprise of a narrative built from several statement from members of the group in agreement or in contradiction. Understanding the viewpoints can be done through broad-brush (wider level) coding of main themes combined with more fine-grained coding of pertinent statement. This allows the researcher to assess individual's contribution in the group for coerciveness versus spontaneity of agreement (Kidd and Parshall, 2000, Smithson, 2000).

The focus group and the follow up interviews were thematically analysed using framework as a data management tool (Ritchie and Spencer, 2002b, Spencer, 2012, Ritchie et al., Forthcoming, from Personal Communication with Spencer, L.). Framework was developed in the context of conducting applied qualitative research. It was initiated at an institute of social research but has been refined and developed over the years. Framework involves in distinct but interconnected stages. (Ritchie and Spencer, 2002b, Spencer and Britain, 2003). The five key stages involved are (a) familiarization of data, (b) identifying thematic framework, (c) indexing, (d) charting or sorting, (e) mapping and interpretation (Bryman, 1994, Pope et al., 2000, Ritchie and Spencer, 2002a, Srivastava and Thomson, 2009). Although the process is presented as following a particular order indeed some stages do logically precede others there is no implication that Framework is a purely mechanical process, a foolproof recipe with a guaranteed outcome. On the contrary, although systematic and disciplined, it relies on the creative and conceptual ability of the analyst to determine meaning, salience and connections. Real leaps in analytical thinking often involve both jumping ahead and returning to rework earlier ideas. The strength of an approach like Framework is that by following a well-defined procedure, it is possible to reconsider and rework ideas precisely because the analytical process has been documented and is therefore accessible. The approach involves a systematic process of sifting, charting and sorting material according to key issues and themes¹⁶.

Familiarisation includes reading through transcripts or listen to recordings; reviewing all data; identifying recurrent or interesting topics in passages; list recurrent topics, deciding when to add new topic or treat as an example of topics already listed (Spencer, 2012). *Construction on initial thematic framework* can be done by comparing list of topics/sub-topics with initial research problem and questions, and

with themes in the literature, compare with topic guide; group data under themes and subthemes; keeping theme labels descriptive ('low inference') at this stage; if concepts are introduced from the literature, ensure that data support them. *Indexing* includes reading through each phrase and sentence; deciding which part or parts of the thematic framework apply to the text; indexing by highlighting text and clicking on subtheme or writing reference in the margin of the transcript (Word document or hard copy); checking indexing. Several different themes or sub-themes may be found in one passage. *Sorting* means searching for similarly indexed data throughout the whole data set; re-group and display labelled data extracts; cut and paste text into new Word document (but keeping links to original context); view data extracts highlighted in original context. Once data extracts is reviewed data may be reduced through summarising and synthesising data under revised thematic framework: Framework (Huberman and Miles, 2002).

The data for the present analysis, both focus groups and interviews, was analysed following the five stages mentioned above while it was managed using theme and case based approach¹⁶.

8.4.2 Thematic Analysis

The data were analysed using thematic analysis as explained in the baseline chapter. In brief, thematic analysis is a method for identifying, analysing and reporting patterns of meaning (Braun and Clarke, 2006). It illustrates which themes are important in the description of the phenomenon under study (Daly et al., 1997). The end result of the thematic analysis reveals the key constellations of meanings present in the dataset. 'A theme refers to a specific pattern of meaning found in the data. It can contain manifest content that is something directly observable such as mentions (a phenomenon) across a series of interview transcripts. Alternatively, it can contain more latent (implicit) content'. 'A further important distinction in terms of the demarcation of a theme is whether it is drawn from a theoretical idea that the researcher brings to the research (termed deductive) or from the raw data itself (termed inductive)' (Spencer, 2012). The 'keyness' of a theme is not simply a matter of recurrence but of relevance to the research question (Joffe, 2011). One approach to thematic analysis is that it should be substantive, cross-sectional, systematic and comprehensive, data-driven or inductive

¹⁶ OnlineQDA, 2012, Framework, available online at URL> http://onlineqda.hud.ac.uk/Intro_QDA/index.php

(giving importance to emergent themes), and outputs are qualitative and meaningful without enumeration, though simple counting may be used. The key analytic process includes data management (including 'Framework as a data management tool in this case'); abstraction and interpretation. Abstraction includes description, categorising and linking of data. Interpretation includes explanation and accounting for patterns (Ritchie and Spencer, 2002b, Spencer and Britain, 2003, Spencer et al., 2003, Spencer, 2012, Ritchie et al., Forthcoming, from Personal Communication with Spencer, L.). Using framework as a data management tool one brings in a set of questions or objectives to the abstract set of data¹⁶. The data analysis using thematic analysis mainly looked at the predetermined themes as per the objective of the project stated earlier in this chapter.

8.4.3 Validity and Reliability of Data

The basic strategy to ensure rigour in qualitative research is systematic and self-conscious research design, data collection, interpretation and communication. In addition, the researchers would seek to create an account of method and data which can stand independently so that another trained researcher could analyse the same data in the same way and come to essentially the same conclusions; and to produce a plausible and coherent explanation of the phenomenon under scrutiny. This research noted the limitation of the design at multiple stages throughout the studies that were undertaken. In addition the method was thoroughly documented and critiqued.

Secondly, qualitative raw data are in relatively unstructured form such as audio recordings or transcripts of conversations. Reliability of analysis will be ensured by maintaining records of interviews or observations and by detailing the process of analysis (Breitmayer et al., 2007, Duffy, 2007). In addition to detailing the process of analysis, this research maintained records of interviews and focus group discussions which were transcribed and analysed.

With regard to validity, within focus groups concerns relate to the reliability of the opinions. This can be examined by asking similar questions at different times and comparing the stability of the group (Kidd and Parshall, 2000). The researcher ensured this happened during the focus group.

Triangulation also helps in validating findings (Patton, 1980, Patton, 1999, Patton, 2001). There can be different ways qualitative data can be triangulated such as data triangulation (using different sources of information), investigator triangulation (using

several different investigators in the analysis process), theory triangulation (use of multiple perspectives to interpret a single set of data), methodological triangulation (use of multiple qualitative and/or quantitative methods to study the program) and environmental triangulation (use of different locations, settings, and other key factors related to the environment in which the study took place) (Mays and Pope, 1995, Patton, 1999, Leech and Onwuegbuzie, 2007, Guion et al., 2011). Collecting data through focus group discussions, interviews and game logs did data triangulation in this research.

Purposeful selection of participants allowed sources with different backgrounds to contribute as varied sources. Focus group and interviews were also used, providing multiple data collection methods, with appropriate weight being placed on recurrent opinions (Kidd and Parshall, 2000). Findings were discussed with supervisors providing an element of analyst triangulation in addition.

Patton (1999) notes that the credibility of the researcher in the context of the work is also important in assuring the credibility of the findings. It is to be noted that the researcher has several years of experience working with MSM in India and thus has an in depth understanding and appreciation of the group dynamics of MSM and an appreciation of their concerns. This has influenced the facilitation of the focus group and interviews and has been drawn upon in interpretation of the data.

8.5 Findings from Focus Group Discussions and Follow Up Interviews

Following is the findings from the two focus group discussions conducted the day after the final game play in Kolkata, India and the follow up interviews conducted three months after the final game play over phone from Nottingham. Each participant is given a code name in order to maintain anonymity and addressed in the data with their code names. The following data is presented according to themes and are thematically analysed after presenting the findings. This chapter does not discuss the findings with reference to broader literatures and the other chapters in the thesis. The next chapter on discussion will capture the final debates.

8.6 Findings from Focus Group Discussions

8.6.1 What did the participants' think of the Game

The participants explained the aim of the game in a number of different ways including that the game was about developing skills, about understanding peer education and about how to approach clients. In details, they said that the game was about 'developing a good communication, rapport and understanding with others'; 'approaching new HRG (High Risk Groups)'; 'having a new taste of our own work'; 'how to solve a sudden problem and knowing quick solution to the problems'; 'it is not fully clear to me but you have come to us at MANAS Bangla and known about us and then gone back and talked to your supervisors. Not everybody can come to us and know about us. This was a reflection of us in their [your] world'; 'how peer educators' works'. Other participants added that aim of the game was 'to teach peer educators about a SMS game about them'; 'peer educators' work is field based...it was about setting up a networking between peer educators from field to field'.

The second focus group participants felt that the game was a good way to orient peer educators towards events in the field. Participants felt that the orientation of events in the field is good for not just the peer educators but senior staff working in the field as well, more so because a site or field is always dynamic and experiences of new peer educators might not be available to experienced staff who then might need re-orienting.

8.6.2 What the Game is not

One of the participants from the second focus group added that the game 'would have been better if when the peer educators [participants/game players] were chatting to each other, there was no scope for the peer educators to discuss their problems online as and when they face it like online chats that is they would be better able to conceptualise their problems, others' problems and would have got an opportunity to discuss as well...if there was a scope for discussing peer educators' problems between themselves it would have been better'. He hinted that rather than having simulation of scenarios an instantaneous online discussion board would have been better. The opportunity to chat was part of the game by using the command SAY. In addition, the focus group during game design provided the opportunity to discuss problems especially because different peer educators from different DICs were involved and mentioned different ways to solve a particular problem. These discussions were also

sometimes a cause of tension in the game design focus groups. This participant was not a member of game design process; this indicates that participation in the process had an element of dialogic learning.

The participants observed a lack of enough options to the dilemmas especially as new peer educators were concerned who might mistake the options given in the game as the only possible options. There is a code of conduct for approaching the Chibri community which new peer educators might not be aware of and may blindly follow after playing the game and offering tea in ignorance of the code of conduct would be problematic.

8.6.3 Experience of Playing the Game

Describing how they felt about playing the game, the participants reported that the game was 'very good', 'interesting' but 'very slow'. Some detailed comments included, 'very good but wasn't so interesting as the responses were so slow'; 'very good especially because this is the first time anyone thought of doing something with MSM'; 'learnt a lot from playing the game' as well as added that the game is very much related to their real life 'highly connected'; 'highly associated' referring that 'the game is an exact copy of the peer educators' life that is reality based by illustrating examples such as 'the game showed that the participants such as us [meaning MSM] like to spend a lot of their time with other males...that we propose to and approach a lot of people, has come through from the SMS'. The indications was that the majority of the participants found the game content interesting or relating to peer education but the pace of the game was too slow or not 'instantaneous'. This was in part due to technical problems in sending and receiving messages. However, the game was parallel to real time, that is, 1800 hours in the participants real life was equivalent to 1800 hours in the game. The storyline and response rate was developed accordingly, that is, if a player types GO park the response will come later reflecting that it will take time to move from one destination to another. This was the same with responding to dilemmas or missions.

This had been contradicted by another participant from focus group 2 where he articulated that 'many of the SMS were boring to read, looked irrelevant and were unnecessary like walking down the streets, a protest march is on its way, these were completely superfluous'. This participant was in particular a Parikh or non effeminate MSM and can be interpreted as having a different view point to an effeminate MSM who aspire to adopt feminine mannerisms in this case of requiring protection and

support. As a more masculine oriented personality he may not have felt the need for such security. An overview of different MSM categories are mentioned in Chapters 2 and 4. However this thesis does not conduct an in-depth critical analysis of MSM identities.

The participants reported that receiving proper replies while playing the game and playing over longer period would have helped them further. The game was disrupted heavily by technical problems as reported earlier. Receiving too many messages was also reported to be problematic in understanding a coherence of messages. A proper reply meant a coherence of responses on time to messages they have sent rather than receiving too many messages from any and every player at the destination. The keyword FIND was viewed as problematic especially at the beginning of the game as typing FIND at a destination at an absence of other players gave responses such as 'there is nobody here' or 'you have typed the wrong name'. This frustrated the players to a great degree as they were always looking for instructions/messages that would aid playing the game.

The fluidity of the game has been criticised by a participant independent of the technical problems and it was reported that the scenarios were not strongly tied into the narrative.

Game play was not fully clear to the participants from the beginning. It took quite a while to get the hang of the game and game play.

A participant reported that it was 'very confusing yet exciting to understand a game that too on a mobile phone. Knowing it I felt better'. Another participant added that he was apprehensive about playing a game on mobile phones and went on to say that he appreciated that he could read the Bangla in English characters and felt better after playing.

They also mentioned that otherwise the game did provide an effective way to orient people to events in the field, both to new peer educators and more senior staff who do not regularly do fieldwork as the peer educators.

8.6.4 Ethics of the game

Ethical issues mentioned by the participants' related to how inexperienced peer educators might place too much weight on aspects of the game in their real work, for example, responding to requests for help without considering their own safety, or by

following options given in the game without thinking whether they are actually appropriate or not knowing codes of practice.

Following the schedule of the focus group discussion as mentioned above the players were asked if following the scenarios, dilemma choices and missions in real life would get them into problems, i.e. was the game promoting actions that would be inappropriate or unsafe. Participants replied that it could in as much as time is concerned such as if someone is asked for help over SMS by another peer educator to distribute condoms at the end of the day when they are readying to go back home, that might create a problem especially if it is a new peer educator who will perhaps try and do what has been asked of him even at twelve in the night. In as much as new peer educators are concerned they might as well go and offer tea to a Chibri (the third gender) as might be a scenario in the game. There is a code of conduct for approaching the Chibri community which new peer educators might not be aware of and may blindly follow after playing the game and offering tea in ignorance of the code of conduct would be problematic. This was observed by the participants as lack of enough options to the dilemmas especially as new peer educators were concerned who might mistake the options given in the game as the only possible options. The second focus group participants felt that the game was a good way to orient peer educators towards happenings in the field. Most peer educators are adults and they would know how to behave. They felt the game language was neither forceful nor persuasive, nor was the game didactic. There were four peer educators in the second group who had worked less than a year as peer educators, and they agreed to the argument. Participants felt that the orientation of happenings in the field is good for not just the peer educators but senior staff working in the field as well, more so, because a site or field is always dynamic and experiences of new peer educators might not be available to experienced staff who then might need re-orienting.

8.6.5 Effect of the Game on

8.6.5.1 Community building

Most players knew each other before the game play or at least were aware that they worked at MANAS Bangla. Playing the game gave them an opportunity to get to know each other better especially because it was around the time of the main festival in West Bengal, 'Durga Puja' (worshipping of the Goddess Durga) which gave them the opportunity to talk about their plans, new dresses et al. It was mentioned that they

always look forward to catching up with each other through such workshops and the game play was not a unique case.

Participants who were involved in the game design process reported that they learnt to ‘develop better friendships’; ‘develop interpersonal and communication skills’; ‘better conversation skills by playing the game’; ‘developing capability to answer during interviews (referring to the one-to-one interview during baseline data collection)’ but they emphasised learning to develop communication skills more through playing the game.

Participants also formed relationship between themselves such as becoming daughter and mother as is the custom in the MSM community.

8.6.5.2 Lack of Trust in Community

As well face to face discussion is not so easy for example ‘If you complain about your Outreach Worker at your DIC to another Outreach Worker or to another DIC they will report back to your Outreach Worker that you complained...there’s no trust. SMS gives the opportunity to talk over a solution with another like mess up with the Outreach Worker or apologize to the Outreach Worker’. SMS refers to using SMS in playing the game where players were anonymised.

8.6.5.3 Collaboration

The participants build a community between themselves during the game design process and the game play process, both socially by talking about everyday events, and the game play provided a catalyst for a more colligate and collaborative interaction in talking about the game, how to play and in solving each others’ problems.

Game play was not fully clear to the participants from the beginning. It took quite a while to get the hang of the game and game play. Participants reported of learning from each other and not just through the workshops about how to play the game: ‘I was taught by my friends how to play the game. I also saw what they were doing, you [the researcher] also taught me, I took help from everybody and there was no problem about that’. Helping each other also encouraged a sense of friendly rivalry between players, ‘Four of us were playing at our DIC... I was worried I wouldn’t be able to play. I asked all of them to inform me just as they received any messages...and replies (from the game)...one of them asked me to help him with his. I did and just as he sent

it, it came to me and I knew who he was in the game'. This has also been emphasised by the fact that particular participants use particular terms of language which makes it obvious who is who. This can also be related to the discussions in the baseline study which shows that MSM peer educators come from different identity groups and thus have different ways of speech/terminology too.

The participants appreciated the use of mobiles phones to play the game, recognising the potential for allowing the peer educators to communicate with each other to discuss problems, to allow them to take part outside workshops and enjoy the challenge of learning to use the phone in a new way.

8.6.5.4 *Networking and Communicating Skills*

As mentioned above, the participants appreciated the use of mobiles phones to play the game and the networking communication advantages they bring, even without the game the use of phone and SMS improved the participants communication skills, giving them insight into a new communications medium.

Another participant mentioned that playing via mobile phones was the best way to play the game. He added that it is not possible to do the same in a workshop or another media as it is difficult to know the whereabouts of others all the time.

Participants who were involved in the game design process reported that they learnt to 'develop better friendships'; 'develop interpersonal and communication skills'; 'better conversation skills by playing the game'; 'developing capability to answer during interviews (referring to the one-to-one interview during baseline data collection)' but they emphasised learning to develop communication skills more through playing the game.

8.6.5.5 *Building self efficacy, confidence*

Continuing with what they felt about the game, participants reported that the game was relevant and gave them some feeling of security and support. One participant added that the game 'took care of even the mental welfare of the players' as shown in the example message from the game describing the player's state of mind at a destination. The example is 'Nobody's around. You are feeling better now' as translated from Bangla. This message was sent when a player was at a destination. The participant was implying that by mentioning how they feel in the game it shows that the game recognised the MSM's feelings as being relevant and important. Adding to

the argument, another player adds that as MSM one feels lonely and neglected in society therefore the game saying how they feel made him feel 'secure'. This was important to them as they otherwise felt neglected and ignored, especially if they are effeminate in a society which expects the sex man to be masculine (perhaps with characteristics such as paying less attention to feelings).

Helping each other also encouraged a sense of friendly rivalry between players, 'Four of us were playing at our DIC... I was worried I wouldn't be able to play. I asked all of them to inform me just as they received any messages...and replies (from the game)...one of them asked me to help him with his. I did and just as he sent it, it came to me and I knew who he was in the game'. This has also been emphasised by the fact that particular participants use particular terms of language which makes it obvious who is who. This can also be related to the discussions in the baseline study which shows that MSM peer educators come from different identity groups and thus have different ways of speech/terminology too.

Playing the game most of the participants reported that they learnt well how to approach people at first, meaning, how to break the ice at a first encounter. It was reported that the SMS game taught them that communication is also possible without a face to face interaction and bonding can be built and formed over SMS as well by wishing someone, complementing someone or asking after someone. These are also mentioned in the interview feedback where individual quotes are given for clarification.

8.6.5.6 Learning Other Skills

Being through the process a participant added that he learnt about what involves a research, problems encountered such as technical faults that hindered game play during the fourth iteration in Kolkata. He added that being in the process he had better understanding of focus group discussions as stated by his comment: 'Also learnt what happens in a group discussion'. Mentioning his engagement with the game he added, '...also about what is an object, a dilemma, a mission and that information is gathered from us, it felt uncanny, what will happen with this?'. He '...also felt overwhelmed with so many people and so many opinions, that each one have different perspectives...playing the game clarified these', that is he was overwhelmed by the game process and possibilities of multiple ways of resolving a dilemma. Being a participant involved earlier in the development process as well, he went on to say that

he had impressions about the game. Playing it matched some of those impressions and did not for others.

8.6.6 Entertainment and Engagement

Helping each other also encouraged a sense of friendly rivalry between players, 'Four of us were playing at our DIC... I was worried I wouldn't be able to play. I asked all of them to inform me just as they received any messages...and replies (from the game)...one of them asked me to help him with his. I did and just as he sent it, it came to me and I knew who he was in the game'. This has also been emphasised by the fact that particular participants use particular terms of language which makes it obvious who is who. This can also be related to the discussions in the baseline study which shows that MSM peer educators come from different identity groups and thus have different ways of speech/terminology too.

8.6.7 Game Complementing Training

Another participant mentioned that playing via mobile phones was the best way to play the game. He added that it is not possible to do the same in a workshop or another media as it is difficult to know the whereabouts of others all the time. As well face to face discussion is not so easy for example 'If you complain about your Outreach Worker at your DIC to another Outreach Worker or to another DIC they will report back to your Outreach Worker that you complained...there's no trust. SMS gives the opportunity to talk over a solution with another like mess up with the Outreach Worker or apologize to the Outreach Worker'. SMS refers to using SMS in playing the game where players were anonymised.

8.6.8 Game Changing Practice

In as much as the new peer educators were involved going to the game destinations and meeting other players made them realise that going to the sites they can meet not only their clients but other potential ones as well. Also that previously they would have just said 'no' to clients if they did not have condoms with them at a site. Playing the mission condom distribution taught them (either by completing the mission or sharing of experience after game play) that they can always go and collect condoms from the DIC as in the game or ask other staff working at the site via SMS to help out if they are absent at the field at that moment. New peer educators also added that before playing the game if they were unsure of a situation they would just ignore

them, after playing the game they have realised they can SMS their Outreach Worker and ask for a course of action.

Participants reported that those who could not SMS earlier have now learnt to SMS efficiently and fast. The SMS game has taught them to use SMS during crisis management in the field.

8.6.9 Value addition of the game to peer education

Writing SMS in short was also cited as an advantage gained from playing the game especially with a previous habit of 'we write a lot of details!'. In addition the SMS game taught them to use SMS during crisis management. Earlier they would make telephone calls to get help and this added to field harassment, that is, abusers seeing they are seeking help. Using SMS provided a secretive and safe space to ask for help. This is discussed further by interview participant P9 later in this chapter.

It was also reported that the peer educators are not able to visit all the work sites every day which confirms the baseline findings. The fact that they were being informed of what is happening and where, gave them the confidence that they can transfer the same skill in their real life work. This was also viewed as the potential benefit of the intervention.

Playing the game most of the participants reported that they learnt well how to approach people at first, meaning, how to break the ice at a first encounter. It was reported that the SMS game taught them that communication is also possible without a face to face interaction and bonding can be built and formed over SMS as well by wishing someone, complementing someone or asking after someone. These are also mentioned in the interview feedback where individual quotes are given for clarification.

In as much as the new peer educators were involved going to the game destinations and meeting other players made them realise that going to the sites they can meet not only their clients but other potential ones as well. Also that previously they would have just said 'no' to clients if they did not have condoms with them at a site. Playing the mission condom distribution taught them (either by completing the mission or sharing of experience after game play) that they can always go and collect condoms from the DIC as in the game or ask other staff working at the site via SMS to help out if they are absent at the field at that moment. New peer educators also added that before playing the game if they were unsure of a situation they would just ignore

them, after playing the game they have realised they can SMS their Outreach Worker and ask for a course of action.

8.6.10 Where did learning happen – in the process or during game playing

Participants who were involved in the game design process reported that they learnt to ‘develop better friendships’; ‘develop interpersonal and communication skills’; ‘better conversation skills by playing the game’; ‘developing capability to answer during interviews (referring to the one-to-one interview during baseline data collection)’ but they emphasised learning to develop communication skills more through playing the game.

All participants mentioned that communication with other participants ameliorated even if in the slightest degree after playing the game. Participants also part of the design process mentioned that their relationship deepened especially across DICs as they met each other before as well through the design process and now ‘catch up and hang around together’. This also includes participants who were not part of the final game trial but were part of most of the design process. Participants also formed relationship between themselves such as becoming daughter and mother as is the custom in the MSM community.

Being through the process a participant added that he learnt about what involves a research, problems encountered such as technical faults that hindered game play during the fourth iteration in Kolkata. He added that being in the process he had better understanding of focus group discussions as stated by his comment: ‘Also learnt what happens in a group discussion’. Mentioning his engagement with the game he added, ‘...also about what is an object, a dilemma, a mission and that information is gathered from us, it felt uncanny, what will happen with this?’. He ‘...also felt overwhelmed with so many people and so many opinions, that each one have different perspectives...playing the game clarified these’, that is he was overwhelmed by the game process and possibilities of multiple ways of resolving a dilemma. Being a participant involved earlier in the development process as well, he went on to say that he had impressions about the game. Playing it matched some of those impressions and did not for others.

8.6.11 Recommendations from Participants

Participants added that the SMS network connection needs to be improved in order to better the game. Also an SMS pack needs to be set up in order to make it cheaper for the MSM groups to play unless it is always sponsored as in this project. Also a workshop needs to be conducted to familiarise the peer educators about the Bangla written in English which made it difficult for some of the participants to read and comprehend the messages.

8.7 Findings from the Follow Up Interviews

8.7.1 Relevance of the Game

Ten participants said that the game scenarios helped them to deal with scenarios in the field. This included participant P3 who used to be a peer educator but is now a Shadow Leader. A few participants added that the language of the game was completely at par with the language used by the MSM community while one particular participant P2 added that the language of the game was too much at par with the Koti culture and that excluded much of the larger MSM community who he worked with, 'game has a lot of ulti language [MSM code language] and they are mostly used by those working at or frequenting MANAS Bangla. But there's a larger community beyond this who does not understand this language and if they were interested in playing the game they would not have been able to do so'. The game was mainly intended for the peer educators working at MANAS Bangla and as baseline study in Chapter 4 described MANAS Bangla is mostly Koti based and the game was developed in participation with MANAS Bangla members. This was also seen as the possible challenge at baseline in Chapter 4.

The participants commented further on the relevance of the game scenarios. It was mentioned that scenes of violence especially towards the Koti which are frequent occurrences at the sites was not part of any of the game scenarios. Further, referring to descriptions in the game P2 said that 'walking through the streets or the Chibri, putting up make up in the 'toilet', these are things that I see every day! I have encountered some of the missions or dilemmas as was in the game but not all'. P7, P8 and P10 all mentioned that experiencing the game scenarios were a help in understanding more effective ways to deal with circumstances. For example P7 reported, 'previously wouldn't have known what to do when I clocked the Koti shagging...whether to give condoms or to talk or to leave them alone. Now after

playing the game I know what my first job is for him and the first job is to give condom and to say use a condom and when you are free come and have a chat with me. I am waiting for you and then gradually talk about STI/HIV'. P11 additionally commented on getting useful feedback from the game play 'Plus the questions [referring to dilemma] that were given in the game were quite relevant because what I do or do not do at work/in the field, I am getting a feedback of that and that is helping me towards self development'.

Eight of the game players said that the game was useful for outreach work. Their descriptions varied from using game rules or keywords to learning to deliver information via SMS or making new friends after learning how to talk to unknown people over the SMS game which was anonymous and players had to introduce themselves to each other. P2 added, 'Did know how to deal with them but having a shared experience through this process have helped me know better. Have not gained any new insight as such but I enjoyed the 'imagined scenes very much' like the drizzles [of rain], rustling of the leaves...like when I was walking through the 'ROAD', I enjoyed that part thoroughly' referring to the descriptions of the road as was in the game. P2 not only enjoyed the shared experiences but the relevance of the game through expressions replicating real life.

Some participants did not immediately see a direct relevance or usefulness of the game to their peer education work, such as P4 who said, 'No the game had not been that much useful and I did not get any mission or dilemma [as in the game]' but they often highlighted individual examples of where the game had been useful and relevant, such as P7 'No [the game was not useful] but previously I would have written a long SMS now I can complete an SMS in just three lines. Yes, the game was relevant to work...situation of mission/dilemma known but not all options...had been helpful..'. P14 added that 'it's made things easier with members of my own DIC but not with members from the other DIC'. P6, 'I had been an Office Assistant for the past three years, now I am an Outreach worker. The game had not been as much useful for my work...don't I already do all this anyway everyday!'

Contradictions were found in participants' feedback when P5 added that the game made him aware of scenarios in the field but upon further enquiry with P5 it was understood that s/he was talking about 'the scenarios did not come when playing the game but when you [researcher] were explaining to us [referring to the workshop about how to play the game before the final game play]'. Such revelations made the

game analysis quite difficult as it was not clear always which incidence they were referring to.

The game also relevant in building confidence through players becoming able to SMS as reported in the focus group feedback. P14 reported, 'Using SMS more after playing the game'. On the contrary, P10 added that, 'Most TG [Transgenders] are illiterate so playing a SMS game can be encumbersant or difficult for them, a lot of them do not know how to SMS. So if a workshop on how to SMS can be held it will be quite useful because the game is confidential so if you are asking for help all the time that can mar the confidentiality; or have an operational guideline or a trainer'. Again, because the game was recognising their lives not ignoring it, the participants felt confident in being who they are as MSM which otherwise they often perhaps thought is not right although they accepted their sexual preferences. This has also been mentioned in the focus group feedback by participants. Participants also showed confidence in being able to read and write in English, that is more specifically English alphabets as the game was in Bangla written in English alphabets: P10, 'really liked it because could use English as mother tongue'.

8.7.2 Usability of the game in relation to outreach work and peer education

Most participants found the game to be usable in relation to game play. Participants such as P2 reported that, 'Yes the game was usable, the process [referring to game rules] of where am I, 'GO' PARK', 'SEARCH FRIEND' [referring to the commands in the game such as using 'GO' to go to a destination or 'FIND' to find/search others at the destination in the game] – the game told me who all are there [at the destination]'. Other usabilities of the game in relation to outreach work are listed as follows:

Ten of the participants said that the game was of use for peer education. This included one participant who was no longer a peer educator but mentioned it to be useful for peer educators. Throughout the course of the game development process he had progressed to become an Outreach Worker. As mentioned before, this was the case with many of the participants who took part in the process. Others who were recruited as game players but were not directly a peer educator at the time of the final trial had still been selected for their opinion of the game as they were members of the MSM "community" and worked at the DICs around outreach work with or without peer educators, such as P6 who added that, 'We receive a lot of training but the peer educators do not have as many, so if they could have played the game via mobile

phones, it would have been much useful' referring to other non game player peer educators.

The participants mentioned the fact that being shown options through the game dilemmas taught them that there could be more than one way to resolve a problem. P5 added, 'I was choosing the options [referring to the game dilemmas] according to my opinions but when I saw the responses to be nothing of what I expected it to be, I realised that there can also be a different way... previously, I wouldn't have given a condom, would have rather said 'hey - how come you are having sex without condoms?' but now after playing the game I try and build a rapport with them [clients], talk to them first at that moment or the next day'. This was the same for P1 who learnt that he should leave when someone kicked off an argument or fight. P11 learnt 'how to get introduced' as well he added that, 'if I play the game again in future, have learnt how to play the game'. P6, P7 and P10 agreed that playing the game has also helped them to understand that 'situations vary according to places' (P10) so should they be handled differently.

Many of the participants who were not peer educators anymore such as P3 commented that the way the game recognised that 'not everything is within their control. Playing the game will make them understand that it is not necessary to bring everything under their control. They will learn this from the game'. He also recognised that the SMS game filled a training niche by saying that 'It is not possible to have self development workshops or trauma counselling frequently neither is it available. So the game will help towards self development and capacity building'. As an experienced field worker he added that, 'The game made me aware of possible scenarios. Imagination was kept at par with reality as if the game has merged the difference between real mother and ideal mother [to be noted here that the game had a description of the road where a mother was waiting at the street corner for her child to return home]'

The game was an aid especially to a new peer educator P8, helping him/her get acquainted with more experienced peer educators who helped him/her to get familiarised with the job. Other participants such as P13, 'Earlier I did not know how to SMS, now I can SMS quite fast'. P9 learnt to inform via SMS, 'previously went to the DIC picked up condoms, if they were not there would have just left. Wouldn't have known to use SMS to inform others or do my job nor did I know that informing others before or after would have helped working'. P1 informed of learning to keep in touch via SMS while P1 and P5 reported of learning to SMS in short which helped them to 'talk well and convincingly within a short time' (P5). P5 also reported

learning to ‘respect others’ opinions, not to thrust self opinion onto others’. Learning to SMS also helped them to coordinate work as reported by three participants. Example of which is P13 saying, ‘Earlier did not know that I could meet with the friends [other MSM] and work together, now I call them over SMS and work [together] like calling them over to the station [rail station] to do condom demonstration or come here there will be Khajra [in MSM language it means sex work] or works’ over come over for adda [informal chats]’.

Participants like P3 refreshed skills like rapport building. One of the experienced Outreach Worker added that being an experienced person in the field he had forgotten the little things that happen in the field and ways of doing them. Playing the game helped him refresh his memories. On the other hand, P7 was a new peer educator during the time of the game play. He added that ‘I was completely new therefore got to know what happens in the field, how to handle situations’.

8.7.3 Game as catalyst to discuss issues related to peer education

Players talked about different things after playing the game, including ‘bhelki’ (MSM ways of cross dressing for cruising), parikh (clients/lovers of especially effeminate MSM), khajra (sex work), chamachami (sex), relationships, family and personal problems and future hopes and fears. Accounts of which are as follows:

P6 said, ‘talk about work, about bhelki, about parikh, current rate [payment for sex], how much do you charge, passing clients to each other, family problems, food/cooking, daily meals, about personal life’. P9 added, ‘Most conversations with most of them are about parikh – the good and bad bits of how they behave, our future, if we can stay like this, frustrations about this and so on’.

A participant P13 who no longer worked at MANAS Bangla mentioned that the other participants ask him about ‘programme’ or his/her new work and ‘I ask them about their work at MANAS Bangla’. Also P15 talked about how they played the game, ‘Talk about how the game was? What did you do? Who did I talk with? Did you know who was who? Did you know whose birthday it was?’.

The conversation between players after the game involved not entirely but in some degree about the game. When asked, ‘What about the game did you talk about?’ they added, ‘How we thought it was’, ‘How could we communicate in short (referring to SMS text speak)’, ‘Talk about our (MSM) life’s pains, joys, mine-his (referring to the person s/he talks to) both, about job (peer education), family’.

P13 said, 'Would have talked during the two days of the game play, about the game, where would you have gone [referring to the destinations in the game], whose name have you come to know about [referring to the anonymous game players, where did you go [destination] – the toilet or the station?'].

Eight participants reported of discussing the game with others. P2 said he talked to, 'one of my peer educator [himself being an Outreach Worker]' and P3 said, 'Some of them where from the DIC and some from the Koti community in my locality' while P6 said, 'Talked to others about 'how' playing the game would have helped'. P7 added that 'I tried to tell about these scenarios to different people. Some thought I am lecturing and stopped talking to me, others thought well of it and are continuing the work'. Four players reported of not discussing with others about the game while three responses were missing. In addition P2 said, 'Did know how to deal with them [scenarios in field] but having a shared experience through this process have helped me know better'.

8.7.4 Interaction mediated through the game

The participants described the game interaction was the same as their real life interactions during training programme especially in 'The way you get to know others in a training programme, it was the same with ones I played with' as reported by P1. Here the interaction is mediated through the game but the similarity was in terms of the conversation they had and the way they would usually introduce each other face to face. In contrast two participants critically assessed that they are interacting with a simulation game and real life is very different. In essence they are emphasising that it is not easy to translate a real life into a game. Though again P9 gave evidence showing how playing the game had transferred into everyday skills: 'Me, you know, did not know how to SMS but knowing how to do the SMS had been a bonus for me as it helps me to make friends with new friends at the spot [meaning the sites he works at]'. Having played the game, P14 described how he understood the more personalised nature of SMS, 'Even when someone I am not much friendly with suddenly sends a SMS, I can understand that he needs me'. He meant that even though he might not be in touch with someone or chat with someone over SMS, messages from them can be personally significant.

8.7.5 Effects of Game on

8.7.5.1 *Introduction and Friendship*

Twelve players said yes to knowing the other game players before playing the game with comments such as, 'Knew them, more or less before', 'Knew everybody', 'had more or less a good relationship before', 'Knew by face but did not have deep conversations', 'Previously knew them but did not know them deeply', 'only knew two of them', 'Knew that he worked in an NGO'. Two of the participants did not know the players before playing the game: 'No, came to know them after playing the game. Surely playing the game had mostly helped the knowing'.

All responding participants reported to getting introduced to some new face/faces through playing the game or the process of playing the game which included two introductory workshops on how to play the game, playing the game and two focus group discussions for evaluation. The game players included eight players who had been involved in the game design and development process and eight completely new users to the game. Thus reporting includes references to developing bond during the game development period as well. Of the sixteen game players, ten participants formed some kind of friendship or bond. Three reported developing friendship 'no more no less' after playing the game while P6 reported 'Knew almost everybody. Do SMS to wish' and P11 reported of developing no friendship. The examples of developing friendship/bonding are ranged from a minimal bonding such as P1 who said, 'I would get introduced and exchange phone numbers and call, there's no such friendship beyond that' to a close friendship as described by P9 who said, 'also I've been successful in making new friends at the spot through this game. Total intimacy friendship with about ten people, five while playing the game and the rest five through the game playing process... have developed friendship with ten participants – through the SMS game and meeting them in the field at the same time'. P9 met the participants in the game process spanning two years and developed a friendship with others when he met them during outreach work in the two year period. He hinted that he would not have developed a friendship with them otherwise.

In describing how these friendships developed an example can be cited from P12, who mentioned, 'Got into deep friendship with some and with some others a hi-hello how are you relationship. In these last two years have developed a deep friendship with six of them, started from the initial focus group [after baseline]. After the focus group it was like how are you, etc. chit-chats and thereafter contacts through SMS and

arranging times to meet up or what are you doing, what are your day's activities, work related conversations, mostly about daily activity and what are you doing tomorrow'.

A few participants also reported, before playing the game they would go for training programme with 'Members of my own DIC' (P1) but after playing the game they would contact other players not only from their own DIC but the other DICs as well such as P7's example, 'yes with three from different DICs after playing the game, [keep in touch] via phone. Did not know them well [before playing the game], did not know them much either during the game, [knew] after playing the game... yes still contact all three of them about twice weekly'. Some participants reported talking to each other during the game but not after or having the same amount of friendship as before and after the game play. Examples of these are from P5 who said, 'Friendships same as before playing the game as after playing the game. There has been no, impact on the frequency of phone calls'.

8.7.5.2 *Getting to Know Others*

Greeting via SMS became a well practiced phenomenon after playing the SMS game even if strong friendship or bond was not developed between the participants. Small talk involved talking about work as exemplified by P8 '...still in contact like if there's an event like happy new year... mostly on purpose phone calls or SMS, on average once in a month about how's work going, how is his work going, ICTC [blood testing counselling] , RMC [regional meetings], mostly work related'. The same was also said by P14.

8.7.5.3 *Game Development/Trial Process as Catalyst for Building Friendships and Relationships*

The participants' involvement in the game design process developed reasons to talk to each other and helped build 'very well developed friendships' (P15), and personal relationships, such as mother-daughter as customary in the MSM community. P10, '(Gives name of the participant) have a formed a mother-daughter relationship', and professional relationships such as 'would be contacting on work purpose' (P15). Some participants reported that the design process facilitated talking about the still so sensitive MSM issues, such as P15 who said the game had 'helped talking at home [about MSM], with other game players, other peers at the DIC', while P6 reported that, 'Talked to others about 'how' playing the game would have helped... No the game hasn't worked as a catalyst to discuss the dilemmas/missions/problems'.

When asked if playing the game helped knowing the other players six players reported that it did, adding that ‘Knew only half of those who had played, got to know two/three more...knew about three or four before playing the game from my DIC’; ‘...now my bio data [CV] is with him and vice-versa [referring to the participant he got along with from another DIC]’. Five participants reported that the game play did not help knowing other participants. Two did not reply and one said ‘same type and number of contacts before and after the game’.

8.7.5.4 Communication and Networking

The game had not only helped dealing with scenarios in the field, it had also added value to the participants’ networking skills as P4 elucidates, ‘...because of the game a good bond has developed between the DICs and the community and therefore had made it easier for work’. He was part of the complete two year process.

8.7.5.5 Community Mobilisation

As explained by P10, ‘The game had been useful for community mobilisation and this is a new type of research and I found its novelty in the fact that it thought about the peers. In so far as community mobilisation is concerned I think it is that the game is about the community. Destination, missions, dilemmas are about the tales of the community and where they frequent. The destinations or dilemmas will be very much appreciated by the community in as much as the missions are also about what the community do. In other words you can just say that the game is about the daily life of community people’. Community mobilisation in this case referred to the peer educators working together to overcome shared problems in the community.

8.7.5.6 Game Giving Community Identity

The following example described by P10 shows how the MSM community was identifiable in the game. P10, 'the game had been useful for community mobilisation and this is a new type of research and I found its novelty in the fact that it thought about the peers. In so far as community mobilisation is concerned I think it is that the game is about the community. Destinations, missions, dilemmas will be very much appreciated by the community in as much as the missions are also about what the community do. In other words you can just say that the game is about the daily life of the community people'. This shows that the game has helped the participants to identify themselves in the game scenarios. Or in other words the participants were able to associate themselves with the game scenarios and recognised that the scenarios are what they face in reality. Thus, because the game is a shared experience and the peers are identifying to the game, they are realising that they are part of the same community. In essence this can be viewed as the game helping to build a shared community identity.

8.7.5.7 Does the Community Still Exist after Game Play

Thirteen of the players reported that they are still in touch with others after playing the game during the follow up interviews which were conducted three months after the game play with participants like P5 adding that 'the regularity of the contacts haven't increased or decreased as such...' and P13 adding that, 'contacts have decreased, I do not live here anymore'. P14 said, 'They know my routine at my DIC but the other DICs do not know it, therefore the communication is dwindling like this with other DIC [members]' and P2 said they '...chat on yahoo messenger'. Two participants said that they are 'not as such in touch with anybody'. Thus, it can be said that the majority of the participants are still in touch after playing the game. Earlier twelve players reported knowing, at least by face, other game players before playing together but the game helped bonding. Players like P9 hinted that s/he developed 'intimacy friendship' because of the game. Thus it can be said that the game had an impact on developing a sense of community.

8.7.6 Bridging Gap between Training and outreach Reality

A constant theme has persisted in the thesis that training received by the peer educators were not adequate. Mention of this has been made in the literature review and in Chapter 4 where among others baseline interviewee IP1 mentions that, 'I joined

on 21st December, went out to work on 22nd December. I had no training. My supervisor...told me, my first field was at a zigzag bathroom cruising site...Gave me some leaflets...condoms...I was told that I should go there, try and build a rapport with the people there, build a friendship, try and learn about their problems and they gave me some papers...Basically, I myself also did not know much about HIV, STI. But at first I worked based on my basic knowledge on HIV and common sense. Gradually, MANAS Bangla gave me lot of trainings. Other than that the counsellors, supervisors who work at MANAS Bangla gave me information on HIV, STI'. This was re-emphasised by a different participant from the follow up interview, P6 who mentioned, 'We receive a lot of training but the peer educators do not have as many so if they could have played the game via mobile phones it would have been much useful [to note here that the peer educators did play the game but he/she was an Outreach Worker not a peer educator]'. This supports the research aim that the SMS game provided in being a learning support for the peer educators.

Some participants expressed their opinion that there is a definite distinction between game and real life. Although they acknowledged that scenarios in the game are verisimilitude of their real life experiences they added that 'game is after all a game' hinting that real life risks are greater or that emphasising that it does not represent real life. The correspondence to real life appears to be problematic in this case. P11 said that, '...there can never be any connection with real life. To pickup condoms or do something else with SMS is only in the game that has no connection with field work or reality. It's only when you go to the cruising areas to cruise and then you chat that's when it's like the chatting in the game process and also when you talk to someone for the first time in the field, is same as in the game [referring to introducing themselves to the other anonymised players in the game]'. P8 added that, 'It is not possible to play over SMS at home something that you do in the field'. P2 distinguished between the game and real life but said that 'the question-answers [referring to dilemma-feedback were embedded in real life and therefore have been useful'. He also added that he knew about the situations as exemplified in the game scenarios but 'maybe didn't pay attention while playing the game and realised its significance later' meaning after playing the game.

8.7.7 Changing how they work

The SMS game changed to a large extent how the game participants undertook their work. This included adopting SMS as a predominant means of communication as told

by P14, ‘members of my DIC do send SMS to me, previously they would have called, usually about where are you, what are you doing, now that has transferred to doing SMS. Previously it would have been out of ten, nine phone calls and one SMS, now it’s like eight SMSs and two calls’. P9 described a unique perspective to SMS use, during crisis management. This has been mentioned earlier in focus group finding for Value of the Game. He said, ‘I am involved in politics, so often there’s a risk of political clash or other dangers [it is a typical scenario in the city of Kolkata that the political parties hold public meetings and often end up in clashes needing police involvement]. From that point of view, I use SMS to inform and alert the political leaders or the local police station and it has been very helpful. It’s much cheaper and then again you need to explain too much over phone. And also in a dangerous situation nobody knows that I am the informer and I can maintain my security’.

SMS was also a popular means of coordination for field work as described by P4, ‘now the condoms are kept at a spot where they can be picked up from and this information is delivered by SMS to the clients. This planning already existed but after playing the game the planning became even stronger, now most of us do this including those who were not even game players. This initiative had been taken by the game players together’.

SMSing in short was mentioned in particular as being beneficial by two participants. P1 said that, ‘can do outreach (work) via SMS...how to speak in short and SMS just like the way I did while playing the game. SMS in short without having to utter every word and making people understand or know, this has helped me a lot in my outreach work’. He is referring to rapport building or communication during outreach work where he has now learnt to be precise and to the point, as his skill developed for using SMS. Even though P7 did not find the game particularly useful, he still commented on SMSing in short as being beneficial, ‘No [the game was not useful] but previously I would have written a long SMS now I can complete an SMS in just three lines. Yes, the game was relevant to work’. The above examples show the benefits of the game to the participants.

8.7.8 Appropriation of game as reported by the participants

8.7.8.1 Appropriating Game Ideas in Real Life

The participants have re-used or adopted some of the game ideas in their real life circumstances after playing the game. The following explores these avenues with

some examples and they are indicated in bold. Firstly, SMS was used for **Information delivery**. P4 reported that, ‘previously we would have distributed the condoms at the DIC but now the condoms are kept at a spot where they can be picked up from and this information is delivered by SMS to the clients... This initiative had been taken by the game players together’. P14 also reported similar ideas, ‘suppose someone is not coming to the field would inform via SMS or vice versa’. This was not the case prior to playing the game. P14 also reported of ‘Using SMS more especially after playing the game’. SMS was also used for **Crisis Management** as reported by P9, ‘When there’s a problem in the field like from the police or harassment from the local club hoodlums, or those that pick pockets in the field, I SMS the crisis management team or those that I have come to know from playing the game, know that they are in the field and thus contact them quickly with the help of SMS. This game has helped a lot in this crisis management’. P9 was unable to use SMS before playing the game though he was one of the most educated participants showing education and ability to SMS are not always co-related in the low literate marginalised MSM groups. Also, showing that the game helped learn to SMS and use it.

Another aspect of the game that has been used by the participants was transferring the **Game keyword FIND** for their own purpose. P2 explained that the, ‘process of where am I, ‘GO’ PARK’, search friend – the game told me who all are there [at destination], I use this process to know who’s where with friend’s/other MSM using the phone’. P2 was referring to using the keywords and the game rules GO and FIND in the game in order to go to a destination and find a friend. He has translated the idea of finding who is in the field perhaps by asking who is at the field by texting.

Participant P6 who was an Outreach Worker or supervisor to a group of peer educators reported that playing the SMS game gave him/her idea to **use cards** and **games using missions and dilemmas** with clients. This idea is further explained through his/her account as follows: ‘I have made my peer educator understand the game, now I use cards with them’ referring to the cards distributed to the players with game keywords and rules shown in Figure 6.27. He continued, ‘The idea of making a card came from the game. The peers [peer educators] use these cards in the field to make people understand about our work, information about it, STI [Sexually Transmitted Infections], HIV etc. The leaflets [referring to Behaviour Change Communication leaflets provided by HIV prevention projects] are usually written words; the illiterate clients cannot read them. The card that was given to help play the game, I used that idea with my peer educators under me and created cards the size of the playing cards.

We put picture on one side and written words on the other and we distribute them to our clients for their convenience like if they cannot read they can understand through the pictures. Now that the card is well known of, they called a meeting at the DIC and now together with the ZPM [Zonal Project Manager], ORW [Outreach Workers], Shadow Leaders it has been decided that all peer educators [from both the zones 1 and 2] will use the cards and play the games. Games meaning sensitising people by showing [the cards] and making them understand and like have a quiz about it later. Playing a game also came from playing the game [referring to the SMS game]. First it was trialed and feedback taken and then only it is used by everybody now’.

Anonymity had been uniquely used by P9 to contact people of interest to her/him without them knowing who he is, ‘These people will previously not speak to me in the field or even if we met in the street perchance, would have walked away avoiding me but I did not declare my phone number to them, just got their phone numbers [from someone else perhaps]. And I introduce myself as ‘R’ as my name. Now I have deep friendships with them but they don’t know when I go to the field that I am this person R...now that I’ve learnt to do SMS I keep in touch by SMS. For the rest-five the contact started by SMS and now they know me as ‘R’. P9 is referring to the people he would fancy and get in contact anonymously by SMS by getting their number from someone else.

The **description of the road** in the game had been adopted by P9 again, as explained in the following quote, ‘In the game there was description of the road, that has helped me a lot. Because when I have to call someone for crisis management or otherwise I tell them where to come but it’s not enough to just mention the name of the place. People might have heard about a place not know them, and then I use descriptions of the road as was in the game’. These examples show that not only did the game help in building skills pre-empted at the beginning at the project but they also adopted game ideas and used them further.

8.7.9 Entertainment and Engagement

Participants found the game creative, multiplayer, entertaining and the content engaging because they could chat, through using game keywords, revealing anonymous names of players the day after during evaluation where they came together P6 said, ‘would have been fun is game was still on, would have enjoyed [chatting] through the game... I have very much enjoyed chatting with them during the game play’ adding ‘Had a lot of fun through ‘FIND’ friend [meaning finding friends during

the game play using the key word 'FIND']. While playing, went to destinations and got engaged in chats with other players'. Using the keyword 'FIND' has previously been found problematic by the players. It can be said that this was more the case at the beginning of the game when the destinations would have been rather empty. Thus using FIND would have not been useful until other players have arrived at a destination.

P7 'Struck a friendship while having so much fun while revealing the names of the game players [referring to unravelling the real people behind the anonymous characters in the game]', so was added by P6. Participants who played and enjoyed the game stated that they would want the game to run for a longer period of time and to a larger audience.

On the other hand P2 added that the 'the game is mostly about HIV intervention and it's not for chatting [for example yahoo messenger] or networking or friendship building and therefore not so interesting' that is criticising that the game was too work related. So also P11 added, 'but distributing condoms etc. [referring to the mission condom distribution in the game] were neither relevant nor interesting or might have been that the tower connection that affected my ability to do the tasks on time'.

8.7.10 Anonymity

The intention of the game was to have the players anonymous as experienced by the players 'I knew the participants in the game but I couldn't make out who's who in the game'. Anonymity has acted in different ways throughout the game. Following are the details:

ANONYMITY AS POSITIVE INFLUENCE/USEFUL Participants mentioned enjoying and building friendship while revealing player identities at the end of the game, or trying to find out the real identities during the game.

P7 said, 'Struck a friendship while having so much fun while revealing the names of the game players [referring to unravelling the real people behind the anonymous characters in the game]'.

P6 said, 'So I liked getting to know [knowing the real people behind the anonymous characters in the game] and therefore I started it off, the friendship'.

ANONYMITY AS FUN Helping each other encouraged a sense of friendly rivalry between players in as much as it encouraged fun and revealing player's anonymity 'one of them asked me to help him with his (reply). I did and just as he sent it, it came to me and I knew who he was in the game'. This has also been emphasised by the fact that particular participants use particular terms of language which makes it obvious who is who. But the players reported that they preferred to act ignorant to understanding who's who by how they spoke. Playing at close proximity to each other helped players to ask for help in as much as it disclosed their anonymity by their sending of messages could be readily seen by the other players.

ANONYMITY AS PROBLEMATIC A player added that no matter how you make them anonymous [referring to players], people working in close contact can always detect one's way of speech and thus anonymity is not worthwhile. P2 added, 'Some terms [referring to SMS text message terms] they use always, therefore I can make out who they were [referring to the fact that he got to understand who the players were, in spite of their anonymity in the game'. Such interactions makes the role of anonymity problematic especially for participants who said that the anonymity of the game made it easier to ask/speak freely in an otherwise tensed environments around the participating MSM.

8.7.11 Problems encountered

8.7.11.1 Technical

The game server failed to connect the game as desired. Nonetheless the participants showed enormous enthusiasm in playing the game. They though mentioned about the troubles they faced due to connectivity which led to unseemliness and further confusion in sending, receiving and understanding the messages which had an impact on how they played the game. P6 categorised the problems as receiving messages late, too little time to reply to the messages, unable to play as and when he wanted and very little time to play the game '...the message replies were coming very late and I did not like that at all and the time was too little, could not play as and when I wanted. Would have liked it better if the time was more'.

8.7.11.2 Time

The players enjoyed playing the game though messages were not delivered on time as described by P12, 'I met two [game players] after playing the game, really got into a chat with one as his game play went on very well and I was receiving replies to the messages I sent nearing the end of the game'.

8.7.11.3 Relevance of SMS Messages

Too many messages as well as too many messages from too many players appeared to have been problematic. The game had too many messages coming at the same time and players found it difficult to handle. This also made them unsure about what to do. In addition the game mechanism was set up in silos, that is, a particular destination could have a maximum of 10 players and everyone present in the destination would get messages from all the players present there. Receiving messages from too many players present at the destinations confused the players as they did not know who to reply to and who not to as elucidated by P12, ‘The game had problems. The question-answers [dilemmas and feedback] or whoever I was chatting with...the answers were not coming back immediately. And then again suppose I was trying to talk someone particular, everybody else except him was replying and that was a setback as well’.

None of the players mentioned the following theme but talking about another player P12 added that, ‘The other one, he was getting the same replies over and over again, so he left the game after sometime, so not much chatting happened with him’ indicating that confusion in messages led to the other player leaving the game play. This has not been reported by any player other than the mention by P12. Other problems mentioned included P1 reporting, ‘It’s not that I have encountered all the missions or dilemmas but got only two questions in the game but feedback to none’. This may have been caused due to technical problems or the dilemma time running out (each dilemma and mission were allotted one hour as mentioned in the previous chapter) but the game mechanism was not set up to tell players that the time ran out or if any other player had left the destination.

8.8 Interpretations

8.8.1 Introduction

This analysis draws together the findings into interpretation from the focus group discussions and the follow up interviews. The purpose is to relate the finding to concepts that are closer to the research aim and also to find phenomena that were not part of the research aim. This analysis does not go directly to the research aim as stated at the start of the chapter but it does draw together conceptual interpretations that will be used to answer the questions asked at the beginning in the next chapter.

8.8.2 Participants' Opinions of the Game

The participants found the game to be relevant about peer education and mirroring outreach reality of the MSM peer educators. In as much as the game reflected the peer educators' world the participants felt that the game was also a medium to promote MSM to the larger society in an otherwise marginalised MSM existence.

The SMS game was described as a good way to orient peer educators towards happenings in the field. Participants felt that the orientation of happenings in the field is good for not just the peer educators but senior staff working in the field as well, more so, because a site or field is always dynamic and experiences of new peer educators might not be available to experienced staff who then might need re-orienting.

The content of the game was described, as being a verisimilitude of the peer educators' life as MSM and work as peer educators but playing the game was not similar to doing peer education or being an MSM. The feedback about the game content confirms the hypothesis that the game is closely conforming to the profile of MSM peer educators and the features of the game correlate with the needs of the MSM peer educators and their environment.

8.8.3 What the game was not

It was commented that the game did not allow peer educators to raise topics and to discuss them like an online discussion board. The relevance of the simulation was also questioned in part in as much as "a game is a game" and could not truly represent the reality of the outreach work.

8.8.4 Relevance of the game

As noted above the participants did find the game relevant to their work and to their lives and problems as MSM and per educators. Of particular note was a comment made by one participant who mentioned that the game 'took care of even the mental welfare of the players', where the messages in the game made reference to how the player was feeling 'Nobody's around. You are feeling better now', this it added a sense of validity to how the participant felt in real life.

8.8.5 Experience of playing the game

The participants reported that playing the game was enjoyable and interesting, but also found it slow, and in places frustrating or boring/irrelevant. The participants used the 'SAY' feature most heavily, as mentioned above indicating they communicated a lot with each other during the game.

The game experience described as “too slow or not instantaneous” shows that although the players experienced the game as their real life experiences and were briefed about the game time being kept similar to real time, their expectations were that technology gives instant results and works quickly.

8.8.6 Ethical Issues

Ethical issues were raised about the game, encompassing the literal interpretation and scope of the game play. First, that new peer educators might take the game too literally, and in their real work follow only the options given in the game or ignore factors such as their own safety (i.e. working late at night) which were not encompassed in the game. Second, the game did also not cover certain codes of practice and so participants may also be led into making mistakes and acting without reference to these rules.

8.8.7 Usability of the Game

Apart from the technical issues as described previously the participants did say they found the game difficult to use at first, it took some time to get the hang of the game play, through asking for help from the researcher and the other players. The parts of the game that were found to be frustrating were dead-ends, such as receiving messages like “there is nobody here” and “you have typed the wrong name”.

8.8.8 Game helped community building, mobilised community, sharing of experience, community mobilisation, communication and networking skills and some other skills.

Involvement in the game was reported as helping participants get to know each other by breaking the ice. Most participants already knew each other but involvement in the game gave opportunities to chat and greet each other, such as during the Durga Puja festival. Whilst participants mentioned they always looked forward to meeting during workshops, the game and workshops in the design process helped them to further

develop friendships, further MSM relationships such as mother and daughter and communications skills.

The game also created a recognisable identity to the participants – that is recognising their problems as shared by other peer educators, thus helping them identify with and ‘belong’ to that community.

As participants got to know each other and chat, they shared their experiences of the game, and especially during the development process (discussed more in the next chapter). From getting to know each other, it was mentioned after the game play took place, that participants had remained in contact and among the things they talked about was their own MSM problems and experiences.

Mentioned again in other points, communication and networking skills were something that the participants recognised had improved a lot during their involvement. This varied from being able to communicate ‘in short’ i.e. through short messages, using SMS to keep in touch with each other, and on a larger scale coordination of tasks and mutual assistance through SMS. One participant mentioned actually learning to use SMS to take part in the game.

8.8.9 Develop self-Efficacy and Confidence

The participants gained confidence by playing the game in the short span that it could be deployed for in spite of the technical faults. Given their challenging monthly/work targets, this experience gave them confidence in their abilities to quickly achieve goals. They appreciated the attention of the research project, which gave them confidence in themselves as MSM and being worthwhile. They mentioned confidence to transfer the skills they learnt (such as communication by SMS) into their own work, and also to overcome difficulties in their work as well, having seen different ideas and tried different options in the game.

8.8.10 Marginalisation of MSM

Participants’ response confirmed the marginalisation of MSM as reviewed in the literatures. The game content being about the MSM, the participants reported, it gave them confidence to be who they are as MSM in an otherwise extremely marginalised environment in India. But the game content has also been criticised as being too Koti based. MANAS Bangla being a majority Koti based organisation the participants who developed the content in the iterative process were also majority Koti based MSM.

This did not allow much scope for opinions from other categories of MSM such as the Parikh et al. This confirms the conflicts within MSM groups as mentioned earlier in the Background chapter and the Baseline where an anecdote states that MSM discriminate against each other. This problematizes the concepts of ‘community’ which is perceived to be a tighter and more cohesive social entity (Kachappilly, 2011) where people become free enough to share and secure enough to get along and there is a collective value of all social networks or in other words social capital (Putnam, 2001, Putnam, 2002). Conflicts between MSM groups do not show them as a cohesive community. To this one can also add that MANAS Bangla being a majority Koti based MSM organisation draws question the organisation in general, whether it is representative enough of the vulnerable MSM population.

8.8.11 Bridging gap between training and practice

The participants did find a strong link between the scenarios in the game and their own practices. They also mentioned that the multiple choices reinforced the idea that problems could be approached in different ways and does not have to in a particular set way which they otherwise practiced. The anonymity element of the game was seen as useful to approach problems where they could not do so directly (such as how to deal with a problem with an outreach worker). It was also mentioned that using the game through SMS allowed training to take place outside of workshops, as was one of the intentions of the game.

Whilst the scenarios were closely matched to the peer educators’ experiences, it was also commented that actually playing the game “to pick up condoms” with SMS had no resemblance to doing it in real life, although the chat element was very similar to what was done in the field.

8.8.12 Value addition to peer education

The game provided the participants with a range of skills and experience that they have found useful for the peer education work. Use of the mobile phone/SMS as a communication and coordination tool was a significant part of this, though this was combined with the fact that the participants were better acquainted through the game and was more able to work with each other to help and support.

The game was also reported to have given them a better understanding of solving problems and in techniques to build rapport in the field.

8.8.13 Learning

The dialogic learning happened more in the game design process than the game play. Feedback from the game play though reflected the participants' desire for dialogic learning - *'there was no scope for the peer educators to discuss their problems online as and when they face it like online chats that is they would be better able to conceptualise their problems, others' problems and would have got an opportunity to discuss as well...if there was a scope for discussing peer educators' problems between themselves it would have been better'*. The aim of the project was to develop critical thinking among peer educators through dialogic learning. The above information show that the design process was critical in developing dialogic learning (will be discussed in detail in next chapter) but in spite of the desire to develop critical thinking power while playing the game, the game failed to support that. This could be due to technical faults, the way the game mechanism was and the content was written (lack of fluidity of the game play was mentioned by the participants) or expectations of participants that the game would be like instant chat. It has been mentioned earlier that this project was limited by the fact that the peer educators were not designing their own solution but an already existing game with set rules and game mechanics was used. The rationale for this has already been mentioned earlier that restricting the design scope was a strategic decision to provide a scaffolding upon which the participatory design process can work as a catalyst to help the participants think critically where otherwise they may struggle. Freire also adds that the highly oppressed find it difficult to think critically and propose alternatives to bring about change. Thus we can conclude that the game was developed on a premise but failed to be as dialogic as desirable. Thus future work might look into making the game more dialogic and fluid.

Secondly, the researcher experienced that it was hard to teach the participants how to play the game and it took longer than expected. But the participants themselves said that the best way they learnt how to play the game was by talking to and watching each other about how to play the game whilst the game was running which shows the dialogic and experiential learning is more effective than didactic ways.

8.8.14 Participation

One of the participants said that he learnt that 'information is gathered from us (peer educators), it felt uncanny, what will happen? Also felt overwhelmed by so many people giving so many opinions'. Participatory research is a growing trend to bring forth participants' voice in the research but in cultures, subcultures or contexts where

especially the subordinates are not used to giving opinions or are not comfortable with, the theories of participation might be problematic. Also, participation can be problematized in research such as this where participants do not have full control of the information they give, it can either be lost in translation or the context – that is translating to game content, rigidity of 160 characters of SMS et al.

8.8.15 Entertaining and Engaging

As mentioned, the participants did find the game interesting, fun and engaging, though in some areas this was not so successful and messages were considered boring or pointless. Playing the game also acted as a focal point for other activities, that is once they were together to play the game or were later chatting about the game they started to chat about other things such as their career, personal problems or collectively attended programmes, discussed problems in peer education in an endeavour to solve them.

8.8.16 Anonymity in Game

Anonymity was the subject of several comments as an enjoyable element of guessing who was who, and finding out after the game play. This has revealed some issues for consideration relating to the game since it was intended that anonymity would help provide a safe environment for peer educators to talk openly and to venture into acting outside group norms without concern of being mocked or standing out.

The feedback showed that anonymity could be a charade because most research promise anonymity of participants but revealing the participants identity to each other the day after the game play that anonymity is not easy to maintain in every context. The game mechanism which is supposed to maintain anonymity can be questionable especially when players are in small groups and known to each other or conversing about what to write as a reply to the game content.

8.8.17 Recommendations

Recommendations and suggestions from that participants included needing more time to play the game and more opportunity raise their own problems as per a discussion board. On the technical side it was suggested that an 'SMS pack' (i.e. bulk deal for sending SMS on a mobile phone account) would be needed if the costs would not be subsidised.

8.8.18 Problematising Critical thinking

The game dilemmas give multiple choices. The participants reported that there were not enough choices in the game but at the same time it can be argued that multiple choices are still giving pre-determined solutions to a context. This can limit the scope for participants to devise or consider their own solutions/practice. This is especially relevant where concerns were raised about inexperienced or new peer educators might follow game option blindly without thinking.

The players were frustrated by repeatedly reaching 'dead ends' in the game for example, when they keyed FIND to find someone at a location often the game replied 'There is nobody here' or 'please check your spelling'. This did not encourage the players about what to do next leaving them with a sense of frustration for not knowing what to do. The game showed scope for developing critical thinking but in cases such as this players needed more prompting.

8.8.19 Appropriation of Game Elements

The participants mentioned appropriating elements of the game into their work practices in addition to the skills and experience developed by the game play itself. SMS as a communication and coordination tool was adopted more widely, for example to coordinate distribution and collection of condom to MSM directly in the field, by notifying clients of nearby -up spots, and to help peer educators in the field for crisis management. Gathering information about who was at a location through SMS was also mentioned (analogous to the GO/FIND function in the game), and reminder cards, missions and dilemmas had also been integrated into the existing training programme for peer educators. Finally, as mentioned above, one participant mentioned exploiting anonymity over SMS to engage with clients and build up rapport.

8.8.20 Experience of Problems

The participants made some mentions to their experience relating to the problems experienced during the trial as previously described. They mentioned that they had a short time to play but rather than this being a major problem they reported this gave them a sense of achievement that they still managed to play. There were some comments about the coherence and timeliness of the messages (where messages were delayed in being processed or received) making them hard to follow or frustrating.

This may have also combined with the expectation that the game would be more responsive (like instant chat) adding to the game being described as slow as above.

8.9 Conclusion

The evaluation of the game encompassed the focus group discussions conducted on the day following the final game trial and the individual follow up interviews taken three months after the final game trial conducted over Skype internet telephony. The evaluation used thematic analysis with framework as a data management tool, allowing predetermined themes to be interpreted alongside emerging themes also noted.

The participants had to use SMS to interact with the game. All but one was not familiar with using SMS, this participant learnt from another participant how to SMS and played the game. Preparation workshops had been undertaken to familiarise the peer educators with SMS rules specific to the game and during the game the participants were successfully sending and receiving messages after the initial problems had been overcome. The learning of and adoption of SMS as a communication method was therefore a distinct success in the trial, and had wider implications such as using SMS for crisis management, for communicating in short, coordination of outreach work and logistics, information delivery and for informal communication for building friendship. These showed the impact of the game on their learning and the way they did outreach work after playing. This can be viewed as instances where the game had an effect on bridging the gap between training and outreach reality. The specific technical problems that occurred affected the success of using SMS for the game on the day. Thus, the use of SMS in general can be perceived as successful with caveats relating to these problems as documented earlier in this chapter.

The game content was designed to be relevant, engaging and entertaining and this objective was met. The majority of participants enjoyed the game, though some reported that they found the language too specific to Koti MSM rather than more diverse MSM. This was true as the MANAS Bangla is predominantly Koti based project in as much as HIV prevention is concerned and the game was developed in a participatory process. Other views of the game were that the messages were repetitive and unnecessary and this detracted their experience. Participants reported being engaged with missions and dilemmas, though the game server logs did not indicate any completed dilemmas and almost as many missions timed out as completed. This

discrepancy could be due to the technical problems that occurred which prevented messages from arriving in a timely fashion, but based on the participants' reports the use of the missions and dilemmas appeared to be successful. Evidences from this evaluation show that the participants had received Dilemmas and responded to them especially P12 who mentioned not receiving any feedback to the Dilemmas s/he responded to. Thus it is difficult to say if the Dilemmas were responded to or not. Confusion was also added by the researcher's realisation during the follow up interviews that some players were talking about the Dilemmas given to them as examples in the workshops. Another explanation might be, because some of the participants were involved in the game design they related to the discussions of constructing dilemmas. Additionally this can be attributed to the two workshops held prior to the game to familiarise participants with the game and its rules and the participants may not have made a clear distinction between the two. So the events of the game play and the participants' comments on the game are not viewed in isolation but as a whole. Whilst participants found the content relevant and representative of their experiences as MSM peer educators, some still drew a distinction between the game play and real life outreach work and according to them a game cannot truly portray the full reality.

In addition to the missions and dilemmas, the game was designed to foster communication and collaboration between the players. The 'SAY' command that was used to chat with other players was the most used command and was also commented on during the evaluation feedback. The 'SAY' command allowed one participant to create a role play that is, organise their birthday celebration with the other players in the game. This shows the diversity to which communication and collaboration took place.

Anonymity in the game was not experienced as originally anticipated, that is, they would not be comfortable disclosing their identity to other players allowing them to freely express themselves in a non judgemental space. The participants described their maximum enjoyment in finding out or revealing true identities during the focus group the day after the trial. They either found out during the course of game play within the group, or at the end of the game when discussing it with other players. Anonymity was described positively in enhancing the game experience, so despite it being not used as intended it did not have a negative impact. This was another feature of the game that was appropriated into the participants' outreach work. One participant in particular

commented in detail how s/he exploited his anonymity through SMS in his/her peer education work.

Participants commented on a number of frustrations or complications with the game, particularly the problems as described above that affected the delivery times of the SMS messages. This coupled with the built in features of the game, for example, allowing time to pass for players to move from one destination to another, or that all players in a destination received all that was said in the 'SAY' messages from other players at the destination. This led to reports of slow responses, being overwhelmed by too many messages, not getting a reply from the intended players and messages that did not follow from one to the next. The command 'FIND' was also confusing and frustrating especially at the beginning of the game as they did not find anybody at the destinations and the response did not incorporate what was happening but rather gave an error message.

The participants commented on their desire to play for longer although the technical problems limited the time available to play the game. However, during the time when the game was operational it was played enthusiastically.

In summary, the deployment of the game for the final trial with the peer educators in Kolkata, India was successful in many areas, allowing the participants to take part in the SMS game, experience missions and dilemmas and the other game content, to be entertained by it as well meeting the learning outcomes. A number of problems affected the duration of the game and the delivery of the content however the game was received enthusiastically and played well.

Also the reader is reminded that this is qualitative research and in any qualitative research the findings relate to the context in which the research takes place and may not be generalisable. This is often a critique of qualitative research that it lacks reproducibility and a different researcher may come to different conclusions. It is also argued that qualitative methods tend to generate large amounts of detailed information about a small number of settings (Mays and Pope, 1995, Payne and Williams, 2005). It is also argued that all research is selective and the literal truth of events is difficult to decipher by any researcher.

All research depends on collecting particular sorts of evidence through the prism of particular methods, each of which has its strengths and weaknesses. For example, if one is using a quantitative method it is difficult for the researcher to ensure that the

questions, categories, and language used in the questionnaire are shared uniformly by respondents and that the replies returned have the same meanings for all respondents. Similarly, qualitative research conducted by a single researcher is limited by definition to the perceptions and interpretations of the investigator and by the possibility that the presence of the researcher may have influenced the behaviour and speech of the participants (Mays and Pope, 1995, Poirier and Ayres, 1998). Thus it is important to note here that the findings of this study are not generalisable and they only relate to the context in which this research took place. Having emphasized this, the next chapter will next iterate the research questions to understand if the findings show evidence to answer them. The final chapter will go on to critically discuss the outcomes of the final game trial and evaluate its success as a learning intervention and the broader implications for peer education and mobile game based learning.

CHAPTER 9. Discussion and Conclusion

9.1 Introduction

This chapter concludes the thesis by considering all the work done so far in relation to the original research question and the wider literature in the related fields. This chapter will examine to what extent have the research questions been answered, what elements of the intervention had positive impacts, what problems were experienced and where further issues and challenges remain. The work undertaken is reviewed in relation to the initial objectives and examined in relation to the related literature. The discussion section will examine the research question and ask if it was an appropriate premise to start this work. The chapter will summarise the main contributions of this thesis and conclude with further suggestions and possible directions for future work.

9.1.1 Aims & Research Questions

The background and literature review in Chapters 2 and 3 identified several current issues within the fields of peer education and mobile for development. The final section of Chapter 3 summarises these and introduced the aims of the thesis, relating them to those research areas. The aims were:

1. To explore peer education and identify their learning and support needs.
2. To design and evaluate an innovative approach to support the MSM peer educators, which is done by re-appropriating an already existing technology.

These aims were pursued by asking the research question:

Can a SMS based game provide the learning and training support to marginalised MSM peer educators in a resource poor setting?

Based on the theoretical basis of peer education and recommendations from existing literature, specific points of focus were identified. The main question was broken down into the following sub-questions:

Can the learning tool (i.e. the SMS Game being developed and trialled):

- a. Help to develop a wider knowledge base for the peer educators than just imparting HIV/AIDS information, that is, a more collaborative and dialogic approach in the way they impart knowledge?

- b. Help focus peer educators' work on risk behaviour change rather than HIV/AIDS facts alone and develop their critical thinking power?
- c. Develop the peer educators' confidence and technical competence as mentioned in (b)?
- d. Develop the peer educators' communication and group work skills?
- e. Help peer educators to share experiences and pass on lessons learnt?

The thesis now concludes by first reviewing the findings from each of the main activities undertaken: the baseline study, game development process and final game trial. The specific sub-questions above will be examined and discussed considering the findings, feedback and reflections from each of the studies. Whether the game achieved its objectives and to what extent the overall research question has been answered will be discussed. Finally whether the work has met its initial aims, the main contributions to each of the relevant fields and implications for further work will be described.

9.2 Did the Game Achieve its Objectives?

This section looks at the evaluation of the game in combination with the baseline and the game design process. The objectives for the game, as given above, will be considered using the findings and experience from these chapters.

9.2.1 Did the game developed in this project help the peer educators' to:

9.2.1.1 Develop a wider knowledge base than just imparting HIV/AIDS information, that is, more collaborative and dialogic approach in the way they impart knowledge?

The baseline study confirmed that the MSM peer educators needed a broader knowledge base than just imparting HIV/AIDS prevention information (use of condoms, etc.) in order to effectively engage with their clients/peers who are often depressed or suicidal or think of them as “blood suckers” (because they want to motivate clients for blood tests) among others (see section 5.5.3). It was revealed that the MSM peer educators need to understand the contexts of their different categories of MSM clients as well how to impart knowledge to them. The intervention aimed to provide this knowledge through established adult learning strategies that emphasised experiential learning, that is learning based on experience and observation (Family Health International, 2008a).

The scenarios in the game introduced peer education related tasks beyond imparting HIV/AIDS information. For example, a dilemma as shown in Chapter 6 Section 6.13 was “It is 9 O’clock already. You are rushing to finish off work. Suddenly a client pops up and says he/she will put him/herself in front of a train. You: (a) Pacify her, (b) taunt by saying what’s the point in Koti’s staying alive?”

Choosing (a) the response message was ‘The Koti was distraught, wouldn’t listen to anything. You say, “Your whole family relies on you. Who is going to take care of them if you die?”. Listening to you he calmed down’. Upon choosing option (b) the response message was ‘Talking nastily at the fag end of the day made you feel horrible. Hearing you the Koti just disappeared. Now you feel troubled worrying what if something happens to him/her. You are trying to call him/her’.

An example of mission as in Chapter 6 Section 6.13 was “You are at the Park now. It's time for CONDOM Demonstration now. Distribute some CONDOMS”. To accomplish the mission the player would have had to PICKUP a CONDOM (from DIC or wherever there is a CONDOM) and USE it at a destination.

Going through these dilemmas and missions helped the peer educators develop peer education experiences and knowledge as the participants reported that they would previously go back home if they did not have condoms but after being part of the project they coordinate between themselves to accomplish their work such as condom distribution by requesting someone to bring condoms from the DIC if they are coming to the area or borrow from other peer educators in the area to give to their clients (see section 8.6.8).

With reference to building a more dialogic approach to the peer educators learning experience Chapter 2 Section 2.6.2 shows that game based learning is an opportunity to enhance levels of interactivity to stimulate learners’ engagement, combine knowledge from different areas to choose a solution or a make decision so that learners can test outcomes based on their decisions, get encouraged to contact other learners and discuss subsequent steps (Pivec et al., 2008) thus providing learners opportunity for reflection. The experience of the peer educators with this game based learning supports these assertions and demonstrates that the learnt skills in the game can be transferred to reality, addressing the one of the underlying problems faced in peer educators’ training, that is, they find it difficult to transfer their training to situations in the field (Walker and Avis, 1999). Findings in Chapter 8 Section 8.6.7, 8.8.11 and 8.8.13 relate evidence of this; the simulation element of the game

complemented the participants' existing experience and allowed them to engage in experiential learning. The findings in Chapter 8 Section 8.7.2 showed that playing missions and dilemmas either in the actual game or designing them during the game design workshops enabled them to reflect upon their own practices and critically analyse them (e.g. Chapter 8 Section 8.6.8). The ability to chat with other players in the game provided the ability to discuss each other's actions, this further expanded on the players' learning experience by sharing experiences, discussing and knowing others experiences or way of doing things. This came about through game play, involvement in workshops or just chatting about it between themselves during the time of the project) as shown in Chapter 8 Section 8.8.8 and 8.8.13.

As introduced in Section 2.6, mobile game based learning provides opportunities for dialogic learning, engaging users by appealing to their experiences and developing in flow activities (Dziorny, 2008). Kam et al. (2009) describes that games have immersive properties, such that the player experiences themselves as being "inside" the game, Kam also suggests that games have the capacity to recreate virtual environments with rich backgrounds where players participate actively. This immersive element was developed in the game by using the peer educators' experiences to create scenarios for the game. This necessarily did not always engage the players rather at times they were bemused why their life was on a phone or why were they not physically travelling to the destinations that they were typing to GO to on the SMS game. This game was only text based unlike other projects using games on mobile phones for development projects in the developing countries where the games usually had a visually rich virtual environments (Kam et al., 2008, Kam et al., 2009, Tian et al., 2010, Kumar et al., 2012).

Kam et al. (2009) add that games can continually challenge players to develop new skills and reward the acquisition of these skills, especially when they spend hours playing the games. Due to technical faults this game could not be played for hours, and disruptions in the regularity of messages may have been detrimental to the flow effect of playing the game, but the game mechanisms of performing a task or mission or undertaking a dilemma presented challenges to the players thinking and raised their critical thinking power. This was achieved not just through playing the game but being part of the design workshop as well (reported in Section 8.6.10). These findings support the argument of Kam et al. (2009) that games can be social experiences that create a shared context for social communication, in this case not necessarily through the game itself (though this did play a significant part) but in the shared activities

surrounding the designing and playing of the game. On the other hand it can be questioned that, as mentioned in Chapter 2 Section 2.6.2, why did the game lack elements such as conflict/competition/challenge/opposition, fantasy, and curiosity which are primary elements of motivation and engagement (Malone, 1981, Prensky, 2001, Malone et al., 2005). It can be argued that the game comprised of other elements such as rules, outcomes and feedback, interaction, representation or story (Prensky, 2001) as well as curiosity (wanting to know the results of their choice among others) but lacked conflict/competition due to the power dynamics observed between the MSM peer educators and the underlying hierarchy in their relations also reported in literature (Khan, 2004). It was observed during the workshops that often peer educators asked the researcher if what they said was right or not despite briefing them that the game is about their peer education experience. On a particular occasion, during one of the first game trail (using the phone) one of the participants felt less about himself for not being able to understand and play the game like the other as mentioned in Chapter 6. Also the baseline Chapter 5 Section 5.5.4 reports that during training peer educators reported being reluctant to answer question in fear of being laughed at. Thus the completion/conflict element was not brought into the forefront of the game design to avoid demotivating the players. Dziorny (2008) also added that a 'flow' is essential to the design of engaging games and refers it to the mental state of being absorbed in a task. Due to technical faults and the game mechanism of SMS responses not being on time it can be questioned whether the game was capable of absorbing the participants. It can be argued that it did from the anecdotal feedback from the participants to the researcher who said he/she was so engrossed that she/he did not look where they were going (when walking in the street) while playing the game while others reported they overstayed at the DIC to be able to play the game and another that his/her boyfriend got jealous that she/he was paying more attention to the game than him. Also the follow up feedback showed that the peer educators in their life appropriated elements of the game. Nonetheless not much negative feedback was received. This could be due to as Dell et al. (2012) mentioned be respondent bias especially in underprivileged groups.

Again despite ascertaining the advantages of using a game, this study also found that the users were confounded by the fact that they were playing their life on a mobile platform, the complex rules of playing the game, presence of the board (which was later removed as it was increasing players' confusion). They also found playability problems due to technical faults as well as unable to understand the rules properly. This echoes other findings by Kam et al. (2007) who tested eight existing mobile

games with rural children in India and found that the users did not find the games intuitive, exciting or free from playability problems. This shows that the concept that games can be fun and motivation is contextual. In another study Kam et al. (2008) found that maintaining a distinction between learning and fun to some extent is necessary for effective designs. There was no such distinction measured in this study.

It was also found that the players' explanation of their understanding SMS is not same as playing an SMS game. To them SMS is used usually for wishing others during occasions and not for communicating. An unexpected outcome of the game was that the intervention taught them that SMS can be used for communication and conversations as well.

The design process included incorporating portion of the baseline interviews, focus group discussions, game design workshops; the evaluation of the final pilot game involved focus group discussions as well. These processes themselves, being dialogic in essence, also contributed towards the peer educators training, in developing critical thinking skills, collaboration, and having the space and time to discuss the problems faced by MSM and peer educators particularly. As there were different DICs (Drop In Centres) around Kolkata some of them were surprised to know that in the north of Kolkata the cruising sites and way to approach the MSM were different from the south of Kolkata which was less conservative. The design workshops also witnessed their change in attitudes. Initially for deciding the destinations of the game as seen in Chapter 6 Section 6.8 and especially Figure 6.22 the peer from the south of Kolkata who seemed to be more assertive took over the decisions but over time as they understood the game is not about winning or losing or reflecting their abilities they became more flexible. As the design process, game play and evaluation were tightly coupled, it is difficult to establish the effects of the game play only, but the evaluation does indicate both parts contributed toward the peer educators' learning and support needs.

9.2.1.2 Help focus peer educators' work on risk behaviour change rather than HIV/AIDS facts alone and develop their critical thinking power?

In addition to sharing experiences, discussing and knowing other peer educators' experiences or ways of doing things through the game play, involvement in workshops as shown in Chapter 6 Section 6.4.3 and Chapter 8 Section 8.6.10 or just chatting about it between themselves (during the time of the project) were also ways to raise critical consciousness as shown in Chapter 8 section 8.7.3 and the participants

reported doing things differently after being involved in the project or game play, again as mentioned through the multiple findings in the previous chapter.

The evaluation (Chapter 8 Section 8.6.10) indicated that playing missions and dilemmas either during the game or during the game design workshops enabled the players to reflect upon their own practice and critically analyse them. The literature said that sensitisation, critical consciousness and empowerment of peers can be a first step in the mobilisation of collective action with regards to HIV/AIDS problems (Asthana and Oostvogels, 1996, Beekera et al., 1998, Campbell and MacPhail, 2002, Population Council, 2002, Parker and Aggleton, 2003, Laperriere, 2008). Contrary to this project experiences such as Population Council (2000) showed that peer educators focused more on HIV facts and not enough risk behaviour change.

The different workshops enabled participants to express their own as well as listen to different points of view which they otherwise were not used to, especially as observed during the initial focus group workshops where power dynamics prevented peers to either express their views vehemently or otherwise be dominated by others as seen in Chapter 6 Section 6.14 Initially in the focus group discussions in the game design process, participants who mentioned behaviours that were not viewed as good practice by others (e.g. by enticing clients through seduction) were quickly talked down by the other participants. As the game development progressed the participants allowed discussion of different practices and way of doing things through their enthusiasm to develop the game, as observed by the researcher. These accounts are documented in Chapter 6 Section 6.15.

Through the feedback of the final game it appeared that participants were able to critically analyse a situation in their practice and conclude a course of action for themselves, for example one of the participants reported that before playing the game if he would see a couple having unsafe sex in a toilet he would 'have a go at them', but after playing the dilemma in the game and seeing the different options and feedback, he realised he could intervene later, at a more appropriate juncture having considered the situation. This not only showed that the participants raised their critical thinking powers and were able to analyse a situation and not just use the same approach every time, and also that they had acquired an understanding that peer education is not just about passing on HIV/AIDS facts.

This project showed an increase in critical consciousness among the participant peer educators, nonetheless at the same time the process brought into question the need for

critical consciousness among the MSM peer educators. It was observed especially in the group workshops as well as during the game play that the participants often expected to be told what to do. During the game design sessions in Chapter 6 Section 6.15 it was observed that securing participants collaboration could be challenging, often participants were more keen on flirting with each other than the task at hand or would come back with the same example as given by the researcher to them rather than attempt to develop their own ideas. This leads the researcher to question the effectiveness of importing a western exercise to the social and cultural setting of a marginalised group in a developing country perhaps without a tradition of participation and where individuals' opinions are not appreciated or sought especially in marginalised existence. Other, more culturally located approaches may be more successful, which contradicts the need for raising critical consciousness, as mentioned in the project objectives as in and literatures (Freire, 1970, Freire, 1973, Putnam et al., 1994, Campbell and Williams, 1999, Putnam, 2001, Campbell and MacPhail, 2002, Campbell, 2003). Cultural dialogue is required in this need to understand and raise critical consciousness in this setting.

9.2.1.3 Develop the peer educators' confidence and technical competence as mentioned 9.2.1.2?

The evaluation showed the positive effects of the game by it being about MSM peer educators, who feel doubly marginalised as MSM and additionally the bottom ranking staff in HIV prevention programmes as peer educators. Incorporating MSM context and language also reinforced the participants' confidence about their MSM identities and work as peer educators or outreach workers (also seeing that other peer educators face similar problems).

Secondly, the project failed in anticipating the complexity of using SMS by the peer educators, and the difficulty faced by the participants in understanding the game concept and game play. Section 8.8.9 notes that in spite of facing these difficulties the fact that they accomplished even if partially what they expected or thought was expected of them by the project increased their confidence not only in their own ability but also increased their confidence in accomplishing the workload of their peer education work which often makes them feel negative and overburdened.

Learning through enjoyment (especially caused by anonymity of players during the final trial of this pilot project, in Section 8.6.6) despite technical difficulties gave the MSM peer educators the confidence to reflect upon their work and reshape their

practices (e.g. Section 8.6.9, Section 8.7.9). An example of this was one participant who explained he had got the confidence to approach clients (who he would not have previously approached) by SMS, making his identity anonymous as 'R' (Section 8.7.8.1).

On the other hand it should also be noted that providing support to marginalised MSM peer educators is not just about providing a tool and appropriate content but also about doing capacity building for using that tool (helping them learn SMS even when they are educated) and providing an environment where they can use the tool (so they can ask for help if they need, make sure they are comfortable with how it works and have confidence in using it). It was seen that the use of SMS with the participants within the project did have a positive effect, giving them confidence to SMS more often for their peer education duties and personal use (Section 8.6.9).

9.2.1.4 Develop the peer educators' communication and group work skills?

In addition to the needs for collaborative and dialogic learning as described above, the baseline study identified the difficult work environment of the peer educators, with reference to poor organisational support and collaboration with other peer educators (Section 5.6.4). The peer educators felt supported by having the opportunity, space and platform for sharing their experiences, and their practices being reviewed/discussed in an unthreatening environment.

The process showed that the peer educators developed community feeling through interaction, building friendship/bonds, sharing experiences and collaboration (described in Section 8.7.5). This cannot be attributed solely to a SMS based intervention but the opportunities provided by the intervention. SMS acted as a cost-effective medium to continue this bond and community feeling. This can be emphasised by the argument that involvement in the design process had a positive effect on peer education practice (for example sharing experiences, building bonds between peers, breaking down barriers), but the difference between being involved in the process and playing the game on its own remains unclear.

Fundamentally, communication skills were improved, at a basic level through the improved confidence and ability to use SMS, which participants mentioned have been transferred to other aspects of their work and social lives (in Section 8.7.8), but on a more general level in improved collaboration and networking skills, which the participants mentioned had improved significantly during the process (Section 8.8.8).

9.2.1.5 Help peer educators to share experiences and pass on lessons learnt?

The baseline and follow up interview data confirmed literature which argues that along with high rates of unsafe sex, low rates of condom use, MSM are also characterised by economic and socio-cultural vulnerabilities, social marginalisation and discrimination (Lenton, 2001, Chakrapani et al., 2002, Mooney and Sarangi, 2005, Chakrapani et al., 2007, National AIDS Control Organisation, 2008, Thomas et al., 2011). This project showed that bringing the peer educators together in an unthreatening environment opened up opportunities for them to share experiences, discuss personal and professional life with each other and eventually bond with each other (see section 8.7.3). This gave them the feeling that they are not alone and they felt being supported in their marginalised existence.

This is in contrast to literature which showed that training of peer educators are often didactic (Evans and Lambert, 2007) and baseline interviews which showed that it is often hard for peer educators to ask questions during workshops due to scarcity of time and fear of being laughed at. In addition, initial group sessions (focus group, design workshops) showed hierarchical relations between peers where they were either aware of presence of others in the group and would not open up or be dominated by others (see Section 6.13). These power dynamics eventually diluted with repeated explanation and assurance from the researcher that there is no right or wrong way of doing peer education and therefore telling their stories for the purposes of designing the game. It was observed that being part of a game and role playing themselves encouraged participants to open up, laugh, make fun at each other, even agree that there are other ways of doing things not just one. This implies that game playing or designing a game has a potential to break down barriers enabling participants to share experiences and bond together.

The anonymity of players in the game play was also expected to help engaging the players in problem solving dialogues due to the status, identity politics between the MSM groups as evidenced in literature review (Naz Foundation International, 2001, Naz Foundation International, 2004, Development Advocacy and Research Trust, 2005, UNAIDS, 2006, National AIDS Control Organisation, 2007) and through the process of the intervention. The short time of the game play could not account for this, nonetheless, the evaluation did highlight that ‘anonymity’ can actually be problematic as MSM is a closely networked group and particular phrases or terms used by individuals make them easily identifiable through SMS chat in the game (Section 8.8.16).

As described above in Section 9.2.1.1 the experiences through the intervention gave the peer educators the opportunity to engage in the problem solving dialogues which ranged from discussing different ways to do outreach work in the focus group discussion in the game design process to discussions even after the game play. Due to unavoidable technical problems, the game itself did not provide as much opportunity as expected through exchange of SMS between players during game play nor was it measurable through the game logs as the server or SMS gateway broke multiple times.

9.3 Discussion

9.3.1 Research Question

The question and the above sub-questions are addressing ‘*Can a SMS based game provide the learning and training support to marginalised MSM peer educators in a resource poor setting?*’ From using the findings it can be said that the intervention had positive impact on the learning and support needs of the peer educators, though the deployment of the game was limited, and the effects of the development process and playing the game itself were difficult to separate. This section looks more generally at the research question, examining the intervention more broadly and issues not covered by the sub-questions above.

By playing the game, the participants learnt to SMS, SMS in short, SMS fast and efficiently especially during crisis management, use SMS more instead of phone calls, coordination of work and training through SMS and learnt to keep up to date with friends and colleagues through SMS, communicate build rapport via SMS. They also learnt to read and write Bangla in English (that is using the English characters for Bangla words), which increased their confidence. This is in contrast to other projects using SMS in developing countries to aid Health Workers or Community Health Workers (Chib, 2010, Ramachandran et al., 2010a).

On the other hand, although using SMS had various positive effects it was observed by a participant that most transgenders are illiterate thus limiting the access of a game such as this to particular audiences. As mentioned earlier that MSM interventions are now called MSM and transgender interventions, there might be a particular need to pay heed to this comment for future development. This also supports previous analysis that there is a need for incorporating needs for different identities, either by developing specific games for specific identity based MSM or by incorporating the

needs of all groups on a shared storyline for richer shared experiences (a panthi based MSM described the game language as too Kothi-based).

The participants also refreshed their skills such as rapport building and handling situations in the field. The peer educators especially learnt anew that going to site is not only about meeting targeted clients but potential ones as well. They also learnt how to approach clients and break the ice. This was seen as a particular problem mentioned in the baseline. They also learnt of new ways of doing outreach work. For example, previously they would taunt clients having sex without condoms. After going through the dilemmas in the game they learnt that they could talk to them about safer sex behaviours after building rapport. This extended to them the learning that solutions to problems vary according to situations and that everything does not need to be under their control. It was reported that the game substituted their need for self development and trauma counselling workshop.

Participants were confused, apprehensive yet excited about playing the game but achieving the ability to play it gave them confidence. Learning to play the game took place not just through the workshops but from other participants and by observing those who were playing. Thus it can be said that they not only learnt new skills but how to work together as well. This is also shown by players gaining confidence to collaborate with other staff in order to get jobs done which they were previously not confident about. They also learnt about research and the problems that can hinder running a research project, learnt better about focus group discussions, and also about what a mission, dilemma, object is in the game which otherwise was not so clear through participation in the design process. They also gained confidence by learning to share information about what was going on at the sites, as they are unable to physically visit all work sites daily. Coordination of sites was possible by learning the benefits of SMS, along with developing bonds with other peer educators. They could now request support from other peer educators over SMS which was not part of their practice previously. For example, if a peer educator would forget to bring condoms to the site, previously he would not distribute condoms and go back to the DIC and distribute them the next time. After their experience in this intervention, they would SMS other peer educators working near or at the same site and either borrow condoms or request them to bring some for them as well when coming from the DIC.

The participants found the game interesting and entertaining, particularly the feature of anonymity which they enjoyed revealing the day after and this provided them the opportunity to make friendships. The majority of the players knew each other at least

by face before playing the game, but the game provided the opportunity to meet each other, gave a chance to talk and know each other, build friendships (though not in all cases), networks and reasons to maintain contact through these introductions. New peer educators also got the opportunity to get acquainted with experienced peer educators and the job. The game was reported as helping develop community mobilisation that is by being about the community, talking about tales of the community and being well appreciated by the community. These relationships were still maintained three months after the game play where thirteen participants reported still being in touch with each other. Kelly (1999) and (Campbell, 2003) stress the importance of community-level interventions, and the promotion of community context within which the marginalised can feel empowered.

Most players reported discussing how the game would be helpful with others from their DIC or Kotis from the locality. Discussions with other players involved talking about how the game was, how they can communicate in short, about which destinations they visited and revealing anonymity. After playing the game players talked about clients/lovers, relationships, family, sex life, sex work, cross dressing, personal problems, and future hopes and fears.

With regard to the game's impact on the process and practices of peer education, it can be said that the participants learnt new things such as knowing new ways to deal with situations. For example, previously new peer educators would leave if they did not know how to deal with situations. Playing the dilemma they now know they can ask other peer educators for help or advice. Playing the mission for condom distribution they learnt that they can now go to the DIC and collect condoms, or coordinate with other peer educators at the same site. Gaining further knowledge about peer education included learning to SMS fast and inform via SMS and learning that informing helps working and talking convincingly and in short after the SMS trials. They also changed their work practices, such as using SMS more after playing and respecting others' opinions. Players also appropriated game ideas into their real life practices by using SMS for crisis management and information delivery, using the concept of game cards as quick reference cards, anonymity to make friends, and using the style of the game description to give direction to locations.

Another dimension to whether a SMS game can provide an effective learning experience is whether the game is appealing and immersive and also allows the gaining of knowledge or skill. Paras and Bizzocchi (2005) highlight the tension between flow activities and the requirement for reflection. In their study the active

reflection was incorporated within the core mechanics of the game by making players sit out of the gameplay (simulating a penalty in a ice hockey match). This forced waiting encouraged reflection on players action in the game. For our study one can argue why were the dilemma and mission responses not prompt and kept to real time responses. The counter argument to this is same as Paras and Bizzocchi (2005) to allow reflection and also finding the same tension between flow activities and reflection as it was observed that the participants expected the responses to be quick although they were made aware that the game time reflected real time. This brings up two contradictory expectations of the players. First, they expected the game response as an SMS response, that is, instantaneous. Second they expected that a game should have a quick response/instant feedback as it is usually in mobile games. But this contradicts their expectation that the game is mirroring reality. For example, they were confused why they will not travel to the destination as they indicated in the game.

In conclusion it can be said that the game helped them acquire skills, gave them confidence, gave them a reason to communicate and collaborate and was in itself as a catalyst for conversation. It also changed their work practices either through using the skills they acquired or appropriating ideas from the game into their work practices.

In addition, this thesis confirmed the real life situation of the peer educators as mentioned in Chapter 3 section 3.3 which mentions that barriers faced by peer educators include poverty, lack of educational opportunities, unemployment which prone them to low self esteem. The theoretical framework of peer education as in Chapter 3 Section 3.3 also showed that peer educators should be knowledgeable, be empowered, be empowering, have the ability to justify and promote discussion and understanding with other peers, be able to mobilise community (Kerrigan, 1999, Backett-Milburn and Wilson, 2000, Campbell and Mzaidume, 2001, Campbell and MacPhail, 2002, Kelly, 2004). This intervention provided the space for peer educators to develop these mentioned skills and characteristics in an unthreatening environment.

This intervention also provided a bottom up approach by incorporating their experiences and undertaking a participatory research where as literature in Chapter 3 Section 3.3 showed that peer education training in practice follows fundamentally a top down approach and fails to reach out to the peer educators themselves or their support and learning needs.

This study succeeded, even though to an extent, to provide a collaborative, dialogic and community based approach to train and support the peer educators which was

otherwise identified as lacking in Chapter 3 Section 3.3. and as shown in the same section, this intervention showed that successful learning can happen from experiential learning and use of interactive methodologies (Rogers, 2002, Kolb and Kolb, 2005a, Family Health International, 2008b). This intervention also affirmed that mobile game based learning is an appropriate tool suited to dialogic, collaborative learning, interaction and conversation offering opportunities for experiential learning.

The hypothesis that SMS offers a low cost and private means to share and access information and communicate with others do not stand completely true for this intervention when the server is based in another country otherwise explained by Curioso and Mechael (2010) as the ‘so called global north’ making the cost of international SMS is high. This study also problematizes the hypothesis that SMS is a private means to communicate as the MSM often asked help from others to read their SMS (from the game) as well as anecdotal observation by the researcher show that they were asking each other ‘what did you get (as a message)’. But this study still stands unique in its attempt to provide learning space using experiential learning as opposed to the growing trend in randomised control trials supporting Health care workers in developing countries (Lim et al., 2008, Ramachandran et al., 2010b). This study also adds knowledge to the field of mobile game based learning especially in the developing countries where its use is rare.

9.3.2 Unexpected Outcomes

Adoption of some of the game mechanisms such as using SMS, the game cards, and the value of anonymity to enhance or better accomplish their work was not predicted. Future research may look more closely into how to facilitate peer educators mundane work.

In this project the use of the game matched well the profile of the MSM peer educators and their need for training and support and the theories associated with these. But in practice the design of technology should have been developed/re-appropriated alongside the intervention. Being a pilot project this was not included within the scope of this intervention. The difficulty in implementation reinforced this argument.

9.3.3 Aims of the Research

As noted above, the two aims of the project were:

- 1. To explore peer education and identify their learning and support needs.**

2. To design and evaluate an innovative approach to support the MSM peer educators.

The baseline study in Chapter 5 addressed the first aim most directly and the main findings are noted in Section 5.8.1. Through interviews with the peer educators at MANAS Bangla it was seen that whilst literature highlights and discusses the problems of peer educators, the messy-reality aspects had not been well documented. Issues of marginalisation and discrimination of the peer educators, difficulties in the relationships between peer educators themselves and the difficulties working as a peer educator within a community based organisation were all new areas revealed. These findings were taken forward to contribute toward the second aim of this project, to design and evaluate the SMS-base game approach to supporting MSM peer educators.

Chapters 6, 7 and 8 detail the development of the SMS based game, deployment and evaluation. The participatory design process concentrated on developing content for the game (locations, dilemmas, missions, game language, etc.) and established some general parameters (e.g. duration and time of play) and some specific changes to enable the game to be understandable and effective for the peer educators. There were many challenges throughout each step which have also been documented within each chapter and summarised in the findings in the sections above. Despite these issues the game was completed and played for a limited period of time, providing the opportunity for the peer educators to play and the evaluation to be undertaken.

9.3.4 Related Findings

This section discusses this work in relation to relevant findings within the literature examined in Chapters 2 and 3. As mentioned in Chapter 3, there is little relevant material that evaluates learning outcomes of mobile game based learning interventions in relation to MSM peer education in a resource constrained setting, it is possible to mention findings of some related work, and review the findings of this thesis alongside existing work, as well as look at wider issues in the related fields as well. This section comprises of three sub-sections, first is related work in mGBL, second peer education and learning and finally mobile communications in developing countries in particular.

9.3.4.1 Findings in Relation to mGBL

Guy (2009) and Shiratuddin and Zaibon (2010) briefly give details of some user evaluation of mGBL applications. Though these were limited in scope, set in high-

tech, well resourced contexts, the evaluations reported enjoyment of playing the games, and that participants reported learning something. This concurs with findings from this project and it is also noted that as mentioned by Shiratuddin, the inclusion of locally relevant and specific content was a fundamental part of the engagement reported by the peer educators, and refers back to theories of adult learning (Rogers, 2002, Jarvis et al., 2003)

Mobile game based learning is particularly suited to dialogic, collaborative learning, interaction and conversation; it offers the opportunities for experiential learning, which matches the need to exploit learners' experience. The experience of developing and trialling the collaborative simulation game has highlighted the strengths of a game based learning approach. The findings in Sections 8.8.2 and 8.8.3 summarise the experience in this project, though the game did not operate as intended, where some successful game play took place there was the opportunity to engage in dialogic and experiential learning. The game development process also provided similar opportunities, and this also highlights the suitability of the approach in these areas.

When designing mobile games in developing countries Treatman and Lesh (2012) highlight the importance of culturally and locally specific media, such as images of clothing and food, and of language. In this project material was developed in participation with MSM peer educators in the area, this ensured that language and descriptions especially used closely reflected that of the participants. However participants noted that it was extremely specific, and might not be appealing to other non-Kothi MSM (one Parikh participant even commented on "repetitive and unnecessary" messages which is conjecturally linked to this, in Section 8.6.3).

Danis et al. (2010) describe the difficulties faced with 'formatted SMS replies' of a similar form used in the Day of Figurines. They highlight a rapid learning period and a requirement for fault tolerant processing of the messages. In this project extensive support was provided to the participants to enable them to send messages correctly, nonetheless many participants still experienced difficulty and ongoing support. This means that familiarisation with the system (in this case a quiz) after some practice enabled the participants to use it effectively nonetheless there were still mistakes. This raises further concerns about the suitability of SMS as an interaction means, though it is noted that in this study issues with SMS interaction was compounded by other technical issues. As Danis et al. (2010) point out, with further technical development (such as improved message interpreting methods) substantial improvements can be made in the usability of the SMS interactions.

9.3.4.2 Findings in Relation to Peer Education and Community Health Work

The literature review indicated that peer educators had problems with poverty, lack of educational opportunities and unemployment (Campbell, 2003) which prone them to low self confidence and sense of personal agency to control their own lives, and that there is no accepted model of good practice and no ongoing support. (Kerrigan, 1999, Backett-Milburn and Wilson, 2000, Campbell and Mzaidume, 2001, Campbell and MacPhail, 2002, Kelly, 2004). The baseline study confirmed this, showing lack of timely and appropriate training (Section 5.5.4), financial difficulties in affording to travel to multiple locations and not getting travel or phone expenses fully reimbursed (Section 5.5.6).

Section 3.2 concludes that the development of knowledge, empowerment, empowering skills, community membership and mobilising skills remain a challenge that has not been adequately met. As mentioned earlier, this thesis aimed to address this, creating an unthreatening space within which the peer educators could develop their knowledge and skills, in this case achieved by mGBL. This was achieved to some extent, in combination with the game development process involving the game design workshops. However there were difficulties faced within that environment. It is difficult to have an unthreatening environment in a workshop because of practicalities as reported in literature and in baseline where peer educators reported it was not easy to ask questions or as the researcher observed in design workshops the power dynamics that made some participants uncomfortable to speak or were dominated by others. The game design incorporated anonymity in order to address some of these issues, and it was found that in some ways it was successful, but also that it was not possible to retain complete anonymity between participants. Rather than create an immediate problem however it was exploited by the players as a way to chat about the game afterwards and build friendships.

Illich (1974) proposes that participation at every stage of the learning process can constitute socially valuable learning. Freire (1973) adds that by asserting their needs, the oppressed, such as the marginalised MSM community, can become the subject of their own development. This is true as the MSM by asserting themselves in the game design process, experiencing the game that related to their lives and issues and expressing their opinions in the evaluation developed a sense of self-efficacy and self worth (Section 8.8.9).

Rogers, in his experiential learning theory, adds that learning happens best when the subject matter is relevant to the learners' personal interest and can get easily assimilated when external threats are minimal. Thus it is important to offer the adults a learning environment with greater flexibility and personalisation (Rogers, 2002, Kolb and Kolb, 2005b). The participatory processes used throughout the thesis took the participants interests and experiences into account and used them to build the learning experience. The use of the game based on the mobile phone provided a flexible and personal learning environment and evaluation revealed this appealed to the participants.

9.3.4.3 Findings relating to M4D and mHealth in developing countries

Han (2012) challenged the optimistic narrative of mobiles for development. This study partially agrees a number of positive effects of the intervention could be associated with the development and evaluation process rather than the playing of the game itself; however the familiarisation with SMS as a communications method in itself provided a range of benefits to the peer educators.

Lim et al. (2008) observe that in published SMS based interventions for HIV/sexual health very few applications had been evaluated. The review of literature within this thesis also confirmed this, and whilst this project does not directly seek to address HIV/sexual health, since the effectiveness of the intervention on the peer educators skills and practices is evaluated, this work partially responds to this.

Repeating Section 2.5, the theoretical framework states that a peer educators should be knowledgeable, a role model, be empowered, be empowering, have the ability to justify and promote their behaviour in discussion with other peers, be able to mobilise their community, be able to promote discussion and understanding among peers in relation to their risk situation and thereby allow empowerment and collective action and should maintain their status as peers especially in a respected and leadership role. It was found that challenges in practice include inadequate training opportunities, a need for a more community based, collaborative and dialogic approach in the way knowledge is imparted and an understanding of peer education in the context of their target group or community (Family Health International, 2008b). This intervention provided the space to address these practical barriers faced by the peer educators by providing dialogic methods for developing knowledge, encouraging and facilitating collaboration, raising critical consciousness, developing communication skills and increasing access to learning opportunities. This study has explored and challenged

these practical barriers, providing evidence on how they can be overcome and what further issues arise or remain. More generally in the scope of M4D Duncombe and Boateng (2009) have argued “research assessing needs or requirements at the micro level of individual users is rare”. This thesis contributes to M4D research in this regard.

In other related work, Rhodes et al. (2007) describe an experience of a peer education intervention among MSM in online chat rooms, based in the USA. The training of peer educators was delivered through two formal training sessions of 8 hours in a 2 week period. Though they shared similar objectives in their training approach, they specifically mention issues in developing dialogic approaches to delivering information and peer educators adopting a more didactic approach. Mentioned under lessons learned is that they had to direct further training toward behaviour change techniques. It is of note that in this thesis the peer educators developed skills to approach peer education in a variety of ways, both through playing the game and through involvement in the design process. Whilst the two interventions differ in setting (USA vs. India) the difference in pedagogical approach stands out.

Other findings corroborate to findings by Anokwa et al. (2012) who also used an existing system for designing a phone based clinical support system for resource constraint setting and also found similar experience with unreliable and disconnected server. Luk et al. (2009) found similar problem with network connectivity including delay in text messages. Tongia and Subrahmanian (2006) also add that the developing world lack the appropriate infrastructure to support ICT solutions. This research did not predict technical problems as faced by the server and the SMS gateway breaking down as well as local traffic and regulations on bulk SMS. Future research should incorporate more substantial feasibility testing for a successful deployment.

With regard to designing in developing countries, Ramachandran et al. (2007) found that the less educated participants preferred to receive explanations on how to use the system from their peers and concluded that the social dynamics of interacting with the technology encouraged teaching and learning between peers. Similar observations were observed in this study when participants sought help from their peers in learning to do SMS or reading the SMS or knowing what next to do in the game from their peers. With regard to participation Ramachandran et al. (2007) added that the environment in which technology is presented should be in line with the local expectations and should not appear foreign, that is, in the way the sessions are conducted making participants feel comfortable. It was observed that this encouraged participation. In this study the

researchers background of working with MSM enabled ease in building rapport with the participants which encouraged their participation especially even when it was difficult for them to conceptualise and use the technology.

It can also be said that this study added to the knowledge of conducting participatory design in developing countries which is otherwise not well documented (Bødker, 1996, Hussain et al., 2012). Chapter 4 section 4.4.2 described participatory design as a Scandinavian design tradition where traditionally the designer team up with the users and some other stakeholders to co-create often in workshops (Hussain et al., 2012). This study showed that participation in a marginalised resource constraint setting requires a different approach. This includes participants' unfamiliarity with giving opinions, unfamiliarity with technology, attempting to give responses that they assumed will satisfy the research than their own opinions, cultural understanding of commitments and obligations such as time keeping for attending workshops, other technical difficulties such as power cuts while deploying a technology, and hierarchy in local community relation.

A substantial part of the aims of this project, based on the understanding of peer education in the marginalised MSM setting in India, have related to the peer educators' abilities and opportunities to collaborate, share information, network and provide mutual support. This comes from (a) imparting knowledge in a dialogic manner, (d) developing communication and group work skills, and (c) sharing experiences and passing on lessons learned. This has been drawn from the supporting theories, as described in Chapter 2 which emphasises the need for peer educators to influence others through their behaviour and interactions, to be empowered and empowering and to create a health-enabling environment. This approach has been referred to as social capital, whereby trust, reciprocal help and support, positive community identity as well as the community's involvement in local organisations and networks contribute to an improvement in health behaviour (Tawil et al., 1995, Baum, 1999, Blaxter and Hughes, 2000, Campbell, 2000). It has however also been pointed out by Gillies et al. (1996) that the primary cause of health inequality is poverty, which also undermines community networks and relationships (Campbell and Mzaidume, 2001).

Though the peer education programme of MANAS Bangla did not specifically seek to address issues of poverty, this project recognised the resource poor setting and proposed SMS as a low-cost, widely available communication medium through which to deliver the intervention. Issues of cost were still raised, such as suggestion of a

bulk-use SMS package to play the game as well as international SMS costs if the project were to be based in India with the server based in Nottingham. Despite this criticism or lacking to address poverty as an important factor for poor health Campbell and Mzaidume (2001) points out a range of literature that links larger amounts of social capital to better health. {Wilkinson, 2002 #1837} points out that social capital approaches are only likely to hold in countries with a prerequisite level of wealth such that the main causes of death have changed from infectious diseases to degenerative disease with a more complex psychological pathway. Relating this to supporting peer educators, the question is asked whether the aim was appropriate to focus on knowledge, communication skills and networking. It can be said that whilst recognising criticisms of social-capital, the aims of the research have been appropriate and justified in the wider context of health-development; the peer educators are being guided to perform their work with a theoretically-backed strategy, though of course other approaches may be also fruitful.

9.4 Contributions

This section highlights the key contributions made by the work in this thesis. At the end of Chapter 3 a number of research issues were highlighted, these are restated below.

In peer education for MSM:

- i. Lack of detailed, theory-based research connecting the practices of peer education with the underlying theories
- ii. Lack of ongoing training and support for MSM peer educators that also relates to their experiences in the field
- iii. Lack of detailed accounts of the problems/challenges faced in practice and thereby the support needs of MSM peer educators

In Mobile Game Based Learning:

- iv. A strong rationale for using mGBL as a pedagogical strategy to support the needs of MSM peer educators in India
- v. Little mGBL interventions have been examined in a resource constrained setting i.e. a developing country.

In Mobile for Development:

- vi. Lack of detailed account of the participants experience in using mobile for development

The most significant contribution of this work has been the design and evaluation of the SMS based mGBL intervention to support MSM peer educators learning needs, contributing toward (i), (ii), (iv), (v) and (vi).

The key elements of peer education were introduced based on the related theories in Chapter 2 and Chapter 3 expanded on this in a critical review of related literature, basing the objectives of the intervention on established theories, accounting for (i). Chapter 4 outlined the methodological approach to undertake this work, using participatory research and design methods to embed the voice and experience of the participants throughout the work. The design process has contributed toward developing training and support representing the experiences of the peer educators as per (ii). Point (iv), that is, rationale for using mGBL as a pedagogical strategy to support the needs of MSM peer educators is noted as a finding from literature, and evidence from the project supports this rationale. Finally contributions toward (v) and (vi) have been made in documenting the design, deployment and evaluation of the SMS based game. These contributions will be discussed below.

9.4.1 Theory-based research connecting the practices of peer education with the underlying theories

This thesis contributes to theory-based research by connecting the practices of peer education with the underlying theories. This is done by using relevant theories relating to peer education and mobile game based learning to guide development of this mGBL intervention. These theories were combined with literature relating to the practices of peer education and the problems as reported by the peer educators in the baseline study to connect the theories to the practices of peer education.

9.4.2 Ongoing training and support for MSM peer educators that also relates to their experiences in the field

This thesis demonstrates how ongoing support can be provided to marginalised MSM peer educators by using a simulation game based on their experiences in the field. The SMS based game developed within this project provides a unique example of a training and support tool for the MSM peer educators. Participatory methods were

used to voice the experiences of peer educators into the content, using a simulation-based game to reflect the real lives of MSM peer educators.

Mobile learning provided any time, anywhere access to the learning support; this project demonstrated the potential for this, highlighting the areas of difficulty as well as the potential benefits.

9.4.3 Account of learning and training needs of MSM peer educators

This thesis contributed to accounting for learning and training needs of the peer educators. The baseline study has provided an exploration of the learning and training needs of MSM peer educators through semi-structured interviews with the MSM peer educators from a community based organisation in Kolkata, India. Having conducted the intervention a more in-depth understanding of the peer educators problems and needs were also accounted.

9.4.4 Evaluation of mGBL as a useful method of supporting training needs of marginalised groups in a resource constrained setting

This thesis contributes to evaluating the use of mobile game based learning to support the training needs of marginalised MSM peer educators in a resource poor setting in Kolkata, India.

9.4.5 Difficulties of Research in a Resource Constrained, Marginalised Setting

This project has informed research in the field of M4D by giving an account of many of the challenges faced by conducting health and technology research in a resource constrained and marginalised setting, many of which have been documented in the findings listed above.

9.4.6 Participants viewpoint of M4D Intervention

Commentary on M4D research has highlighted the need for more detailed accounts of participants' experiences and viewpoints within M4D projects. The game design process and evaluation has provided an opportunity to provide such an account, through the feedback gathered from the participants at each stage.

Whilst many studies have performed technical evaluations, a contribution from this work has not been about how well the technology worked but about how the participants made sense of the technology and how it was useful to them. One can

argue in the strictest sense that the game was not deployed for long enough, nor did it work due to technical problems, however the participants, being marginalised, over-pressured with work and constantly on-the-edge gained self-efficacy toward their work and confidence by being able to achieve something out of a limited opportunity, and the attention from being the focus of the project. (In essence, they get so few opportunities that a small amount still counted for something to them).

9.5 Conclusion

MSM peer education in a resource-constrained setting is one of the less researched areas and exploring the training practices and needs of MSM peer educators was innovative. Research in M4D, HCI4D, ICT4D has looked into imparting information for health and educational settings in developing worlds and more research is ongoing to tap mobile communication for development. The use of a simulation game and its value in providing training and support needs to the MSM peer educators is unique to this project. Moreover, this project identified the relative value of involvement in participatory design of the game and playing the SMS based game in addressing the learning needs identified by the MSM peer educators. This project also documents the design and evaluation of a training tool for peer educators of a marginalised community.

Future work and further directions of enquiry include:

- a. How to make such intervention sustainable – cost, logistic, technical support, funding or how can the community take over the ownership.

The game requires significant input from the community of participants, in gathering background information on their context including language and daily lives, the problems they face and strategies they adopt in order to deal with them. In developing this game further, for example extending to other cities, other groups of participants of peer educator in another setting (maternal health for example), similar exercises would be required. Further work would look into how to simplify and reduce the work required within this process without sacrificing gathering the necessary details needed, and then look at whether technical developments could be made to allow authoring and modification of the game content to reflect this. Other issues would include how to provide appropriate technical support, and how to improve reliability and consistency in the SMS interactions.

- b. Can the game alone have any impact?

The findings of this thesis highlight the effect of the intervention as closely linked with the development process as well as participation in the final game trial. With further work and resourcing, a study could be developed to specifically investigate whether playing the game alone has an impact, and if so, how do experiences differ.

c. Does such an intervention have any long-term impact?

Whilst the period of engagement with the peer educators within this project was over a number of years, through the baseline study, game development process and follow up interviews, the scale was small and the trial of the game was limited in duration. Further work would extend this research to understand if such interventions have lasting impact upon the individuals involved, the organisations they are working with, and ultimately whether there is any long-term impact on the desired outcomes, including the quality of MSM peer education and ultimately HIV/AIDS proliferation.

d. Can replicating the same project have similar impact especially in another resource constrained or marginalised setting or both?

The project was set within a group of MSM peer educators in a marginalised setting in Kolkata, India. The researcher's prior experience and knowledge of this context provided an entry point and inspiration for the work. To take this work to other resource constrained, marginalised settings would provide an opportunity to more generally explore the nature of mobile technology in developing regions and hard-to-reach populations worldwide and understand the generalisability, and challenges faced in transferring technologies between these settings, as well as between more developed contexts.

It is hoped this work can be continued, and continue to find ways and means to further support marginalised communities and inform research in the area worldwide.

CHAPTER 10. References

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APPENDIX 1: Phrases/paraphrases Identified at Baseline Interview

Following are the direct quotes from the twelve participants taking part in the baseline one-to-one interviews. These were read out to the two groups of participants in the focus group discussions. They prioritised fourteen issues relating to their work that had potential to be developed as game scenarios which are shown in Appendix 3.

1. What are PE support groups?
2. What needs to be done at the field to make work easier?
3. Police harassment
4. Office – who would you mingle with and how? Who will solve problems quickly?
5. How to find/capture attention of clients?
6. How to prioritise time?
7. Jobs as PE
8. Who to ask for clarifications during workshops, if things are unclear. As workshops usually have many participants and limited time.
9. What to do when clients ask something we do not know answer to?
10. Harassment by local hoodlums
11. Police harassment – why are you behaving like a girl?
Solution to police harassments – Advocacy. How – You are a social worker, so am I. I work with socially discriminated people and make them understand the situation. Once you finish talking, tell them that this is what your job is about.
12. Theft – pick pocket
13. Harassment from station master and those who work at/are on the railway platforms. These include trades people, beggars, cleaners, people randomly living/cruising railway platforms.
14. People forcing them to have sex.
15. Need to know about:
 - a. Field advocacy – about field harassment
 - b. Field mobilisation – to build a healthy environment. Developing an *Enabling Environment* through advocacy. Advocacy is speaking up for, or acting on behalf of, yourself or another person.
 - c. Family advocacy – when parents are not accepting
16. The MSM face mental harassment from locals, home. It becomes difficult for the PE to motivate the MSM or even talk to them about HIV/AIDS. The situation in India is very tricky. The MSM face constant humiliation from home, locals,

physical harassment from police. Sometimes this result in the MSM becoming suicidal. Thus one who doesn't want to live cannot be motivated to listen about the risks of HIV/AIDS. NACO rightly focuses on raising HIV/AIDS awareness among the at risk groups, however, in reality it becomes essential to not just raise awareness among these groups but also to look after their mental and physical wellbeing.

- The PE work involves handling (i.e. dealing with/managing/treating) those who are tortured.
- Also to handle those who torture!

17. Leadership training

18. Mental support to clients

19. If someone's held by police, the PE job is to release the person out of that situation. For eg. MSM were sitting in a park and chatting, the police will come and harass. Thus one has to advocate that it is not illegal to sit and chat in the park.

20. Resolve fights/scuffles between clients.

21. Resolve problems related to *Parikh* (i.e. partners of *Kotis* or effeminate males)

22. If someone's (indicates MSM clients only) parent's die, the raise funds to help the person in performing the rituals.

23. The MSM seek jobs, the PE often have to advice them to do things such as selling snacks etc. It is to be noted here that it is often believed that the MSM do not get work because they are effeminate along with being poor and illiterate. Refer clients to different kinds of work.

24. Because I am a PE, I am a 'friend'. Because I am a friend, I need to take responsibility of taking my friend to the doctor in case he is sick.

25. Teach MSM how to use condoms. Ensure that those who know how to use condom, uses condoms. It is depressing as a PE when clients do not use condoms even after months of advocacy with them.

26. Often people try to extort INR 5/10 from the PE at the field. Need to convince MB to do advocacy in those areas.

27. In some massage parlours the owners are not concerned about the boy's health. Thus advocating in those parlours as well as the boys outside the parlours when the owners are too adamant.

28. When harassed, PE often feel lonely and helpless if he cannot do anything about it.

29. Due to limitation in Travel Allowance, it is not possible to travel to all the places even if they know that clients need condoms in those places.

30. MB often sets up targets to be reached by the PE. If successful, it feels great otherwise its de-motivating.
31. The local goons threaten the PE, abuse them but still the PE visit the fields.
32. Grouping and competition between PE – results in projecting ‘what is lacking’ in the other PE, dominating other PE, teasing or humiliating another PE, verbal harassment at office (DIC) on a regular basis. This result in PE feeling depressed.
Solution: the PE can be advised on how to behave at office.
33. Do not understand what is ‘education’ in peer education?
34. Clinical support
35. Make friends with people like me.
36. Skills to talk to MSM – eye contact, body movement, what to do for presenting yourself to the MSM.
37. If PE do not know the answer to a question asked by the client, then they do not respond.
38. How to build up the rapport – hoe to establish a friendship.
39. How to motivate MSM to come to DIC (different clients need to be motivated differently). Some of the many reasons why clients need to be motivated are:
 - a. Distance to the DIC is sometimes too much for some of the clients. Thus clients often have expectations especially monetary to travel to the DIC.
 - b. Timing for doctors at the DIC is fixed. If someone works during the same hours it is impossible for them to visit the doctors.
 - c. *Kotis* usually seek advantage. They expect DIC to be near where they are. They also expect refreshments if they do turn up at the DIC.
40. The PE face problems working with solely Male Sex Worker clients as they are often mistaken as MWS themselves.
41. It is important not just to reach the set clients of the PE but also their partners or *Parikhs*. Not just as PE at work but as their friend. It is important to note how the PE specified ‘as friends’ as juxtaposed to their explain PE as ‘someone who is a friend’. If the *Parikh* fancied the PE it is important not to shoo him off because its work but flirt a bit, thus asking him about himself and try to figure out things about him through these chit-chats (i.e. if he practices high risk behaviour etc). It is important to make them feel that you are not talking to them only because you have to reach a target population of clients as a PE.

Thus, (skills to know) how to make clients feel we are friends and its not just for work that the PE go to the field.

Solutions:

- a. Eat some snacks together. Spending some money for clients in doing so.
 - b. If the client is in a bad mood, not to talk about HIV/AIDS straight away but to take him for a walk or have a tea with him and then gently broach the topic.
42. According to new regulations under the SACS/NACO, areas of work for the PE are demarcated. Thus providing services to clients who are registered.
 43. How to counsel clients at the field, motivate them to take services or come to the DIC.
 44. Mental support for PE if target is not reached or if a PE cannot pull out work or to make the PE understand his importance (role).
 45. Clients are often suspicious of the PE – why do they carry files; does that mean they are different from what we are?
Solution: convincing them that we are their friend. I like belonging with you as I am 'like' you. The place where I come from, there aren't people like you, so I come to belong here. This is how they accept you and start sharing personal life anecdotes not just what PE need to know in relation to work. Thus a PE have to be strategic enough to throw in HIV related issues or counsel them while in conversation.
 46. Local 'dada' (macho men) ask for girls (meaning female prostitutes) from the PE. This is because the *Kotis* or *Hijras* often say that they have information about female prostitutes when harassed similarly by the *dadas*. And since the PE reach out to the *Kotis* and *Hijras* they are likewise approached. Thus making them understand that we both are human beings with similar desires and that I am not a pimp. It is a popular belief that *Kotis* have information about female prostitutes.
 47. When another PE come to work in the same area as one PE, the latter explains that the PE can talk to clients but cannot work there as they are the latter's clients. This results in creating completion between two PE.
 - Usually, most clients trust the PE who have already been working in an area. It disheartens PE when other PE come and try to win over their clients.
 48. When clients are aged less than 18.
 49. How to reach out to the hidden population especially when in recent years internet cruising prevents clients to access cruising areas. Thus these groups are left behind.
 50. It is important to convince this stakeholder (MSM) community that the PE are with them not just to get their work done and get paid. Thus it is important to hold out the talents of the community to the general population in order to ensure that

the larger community understands that the MSM community is not about just having sex with another male but they also know how to sing, dance or sew.

51. Sometimes the PE have to go out with the clients to fetes or somewhere on a day out when no one talks about work. Also to convince the clients that listening to each other is a reciprocatory process. The way the clients need to listen to the PE, it is the same way that they give in to their requests of going out together.
52. In the field the clients are more interested in winning clients. It is difficult to make them listen to HIV talks in such an environment. Often one can listen to you but when it comes to using the condom, he doesn't. Usually it is better to observe the clients in the field and note when they solicit and accordingly make a timely approach.
53. It is most difficult to bring them to do blood test. If you try and convince them persistently, they think you are doing that because you will earn money for this job assigned.
54. My friends from my locality do not talk to me because I talk to effeminate males.
55. When clients are harassed they do not frequent the site thus stopping the PE work.
On the contrary the PE cannot travel to visit these clients due to his limited TA.
56. Staff and PE should be treated equally at the DIC. When PE are harassed by staff it depresses the PE.
57. When harassed by the *dadas* to have sex with them, sometimes even if the ORW know about it, doesn't do anything about it. They just come to see if the PE is present in the field. Other than that it is none of their business. ORW/Supervisor often go to field and do not find the PE and viceversa. Even at the DIC, the staff come in late during scheduled meetings, group discussions etc and accuses the PE for not bringing in clients as clients might leave after sometime.
58. If HIV work is field based why is there a hierarchy at work.
59. In the trains people try to lean on you or touch you or push you or tease you. If you react they are more than happy to begin a fight.
60. No to solicit during work. Therefore you can protest to harassments if you do not solicit or flirt (or *bhel kora* as in MSM terminology)
61. How to approach clients for the first time, mostly those that doesn't want to speak at all.
62. Everyone is co-worker at work, even lovers or friends. Thus office relation should be strictly work based.
63. It is important to bring clients to DIC without alluring them or coercing them just because they are your friends.

64. Even if PE have a job description, they have to do work outside their job description.
65. If clients miss a scheduled ICTC appointment, then the PE is shown displeasure at by office staff. They are not told nicely. It is expected that PE should call clients, however, phone bills are not covered under the job. Additionally, taking the blood test reports should not be the sole responsibility of the PE, the counsellors should also be involved.
66. Problems with filling up the monthly report cards.
67. Analyse the risk of clients and distribute condoms accordingly, inform about the locations of free condom outlets. Job also include conducting GD, FGD, do complete BCC, advocacy at the police stations, local clubs and develop a EE in the field, report on own work, submit weekly plan, take the positive people to the treatment centres.
68. How to fill up peer card.
69. Because we work as MSM PE, we face problems elsewhere also. Neighbours do not talk, they think we will transform their sons to effeminate males. Additionally, people tease us as 'buggers', 'buladi' [that is the female mascot for HIV prevention in West Bengal] or physically touching us. Its easier if someone accompanies us.
70. It is not possible to carry condoms at all places.
71. A PE need to know what is going on in the office. Also about the problems other PE face.

APPENDIX 2: A Section Of The Focus Group Discussion Showing How Decisions Were Made

Facilitator: *'Local hoodlum is harassing'* (phrase read out from the interview notes)

Group: [*Local hoodlums harass...*]

[*police also harass. Just say harassment*]

[*we get harassed if we go to the police, we get harassed if we go to the local 'dada' (yob) everybody harass us*]

[*if local dada harasses, then will go to the police*]

[*don't need to say local*]

[*local 'Gunda' (hoodlum)...!!! just 'gunda'*]

Facilitator: *Ok then, one of the topics can be harassment.*

Group: *Yes, a lot of things fall under 'harassment'*

Facilitator: *harassment, so what should we include under it*

[*Police*]

[*Police*]

[*Family harassment*]

[*Harassment from local counsellor*]

[*Social harassment*]

[*Financial*]

[*Everything is coming under social harassment*]

[*Financial.... aye, no increment on salary is in the financial category. there's no increment of salary that is also financial harassment*]

[*how is that an harassment?*]

Yes, it is harassment]

Oh god, look it's a month now and we are not paid our salary

Yes, it is harassment]

Mental stress]

Mental stress and harassment are different

[I want to eat mutton today, I cannot eat it. MANAS Bangla is paying me [Rs 500. Rs 60 to 80 is per kilo mutton]

[Added to that we are not paid monthly]

You think its harassment, then maybe it is.

Facilitator: Therefore, three topics, police, hoodlums and familial!?

Group: another one is... [familial]

[partner]

Facilitator: what is the other one?

Group: partner

Have you written Social?

Facilitator: social means? What do you mean by social?

Group: [Social means, while walking in the streets get harassed]

[People in the streets]

[Yes that is social harassment]

[People on the streets!]

[My partner harasses me]

[Local 'dada' is different and social is different]

[Does your partner harass you?]

Facilitator: Ok! A lot more points will come under harassment. So do tell me if that should be included here.

APPENDIX 3: Focus Group Discussion Themes

Following are the themes prioritised by the participants in Focus Group Discussion 1:

1. Harassment
 - Police, Hoodlums, Family, Partner, Random people from the public on the road, Station master, *General Railway Police* (GRP), Theft in the ‘field’, Forced to have sex
2. Risk Analysis
3. What to do in the ‘field’ that will make work easier
4. Competition and overlapping of area between PE
5. DIC Infrastructure
6. Clients’ asking for work
7. Fulfilling client target (reaching 60 MSM per month) within limited time
8. Issues regarding office staff not being on time. (this was indication to staff superior to the PE not present on time during scheduled meetings/appointments et al)
9. *Integrated Voluntary Testing and Counselling* (ICTC)
10. Knowing about other PEs’ work
11. When PE are mistaken as *Male Sex Worker* (MSW)
12. When ORW goes to ‘field’ (referring to ORW complaining PE not doing their work if they do not meet the PE in the field)
13. Motivating clients
14. When local goons, ‘*dada*’ asks for ‘girls’ (female prostitutes) from the PE

Given the time constraint the group then was requested to prioritise fewer themes from the above mentioned. The PE thus prioritised the following themes in the following destinations:

- Police harassment at railway platform, toilet (public toilet), park, police station
- Harassment from *Rapid Police Force* (RPF), *General Railway Police* (GRP), informer of police, TT (rail ticket checker).
- Problems with other staff (other than PE) at DIC
- Problems in the 'field'

The participants from the second Focus Group Discussions prioritised the following themes:

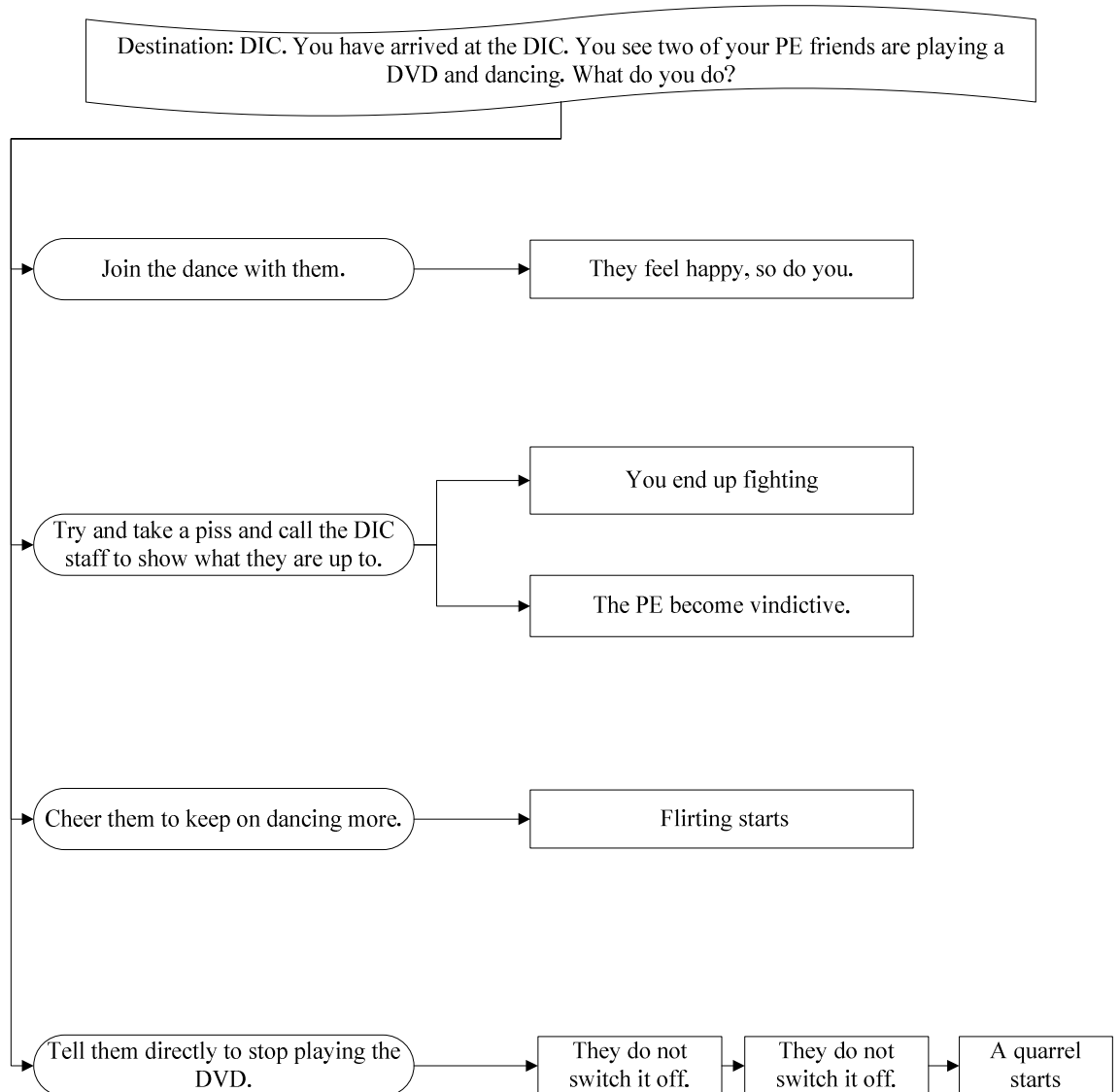
1. How to approach clients:
 - for the first time
 - so that clients do not run away in fear
 - when the clients have been harassed
 - When PE themselves are introverted. It was added here that because a PE was shy to approach clients, being a *Koti* (effeminate male) himself, he would only approach the *Parikh* (masculine males who are usually partners of the *Koti*) in the beginning of his job.
 - who are from the ‘hidden’ population, that is, who do not want to reveal their MSM identity
2. What to do in the ‘field’ that will make work easier
3. What to do when forced to have sex
4. Competition/conflict between clients in the ‘field’
5. How to motivate clients to come to the DIC or put into practice the information provided to them, or provide correct information about themselves. Also, how to motivate clients to do ICTC or follow up treatment.
6. Harassment:
 - From local people when sitting and chatting with clients group in the ‘field’.
 - Police harassment. Where to get support especially from the legislative point of view (referring to the law that illegalises same sex behaviour)
 - Theft in the ‘field’. What to do when theft?
 - From ‘dada’¹
7. Overlapping of PE area, grouping and competition between PE.
8. What should the PE do when he feels lonely or depressed?
9. How to do networking between PE
10. How to mingle and who to mingle with at DIC? At the DIC the DIC Assistant or other staff harass the PE at the DIC.
11. How to do ‘risk analyses of clients.
12. How to deal with clients who are suicidal?

13. What to do when the PE is mistaken as a *Male Sex Worker* (MSW).
14. What to do when clients think that PE will win over their 'Parikh' (lovers of the *Koti* or effeminate males)

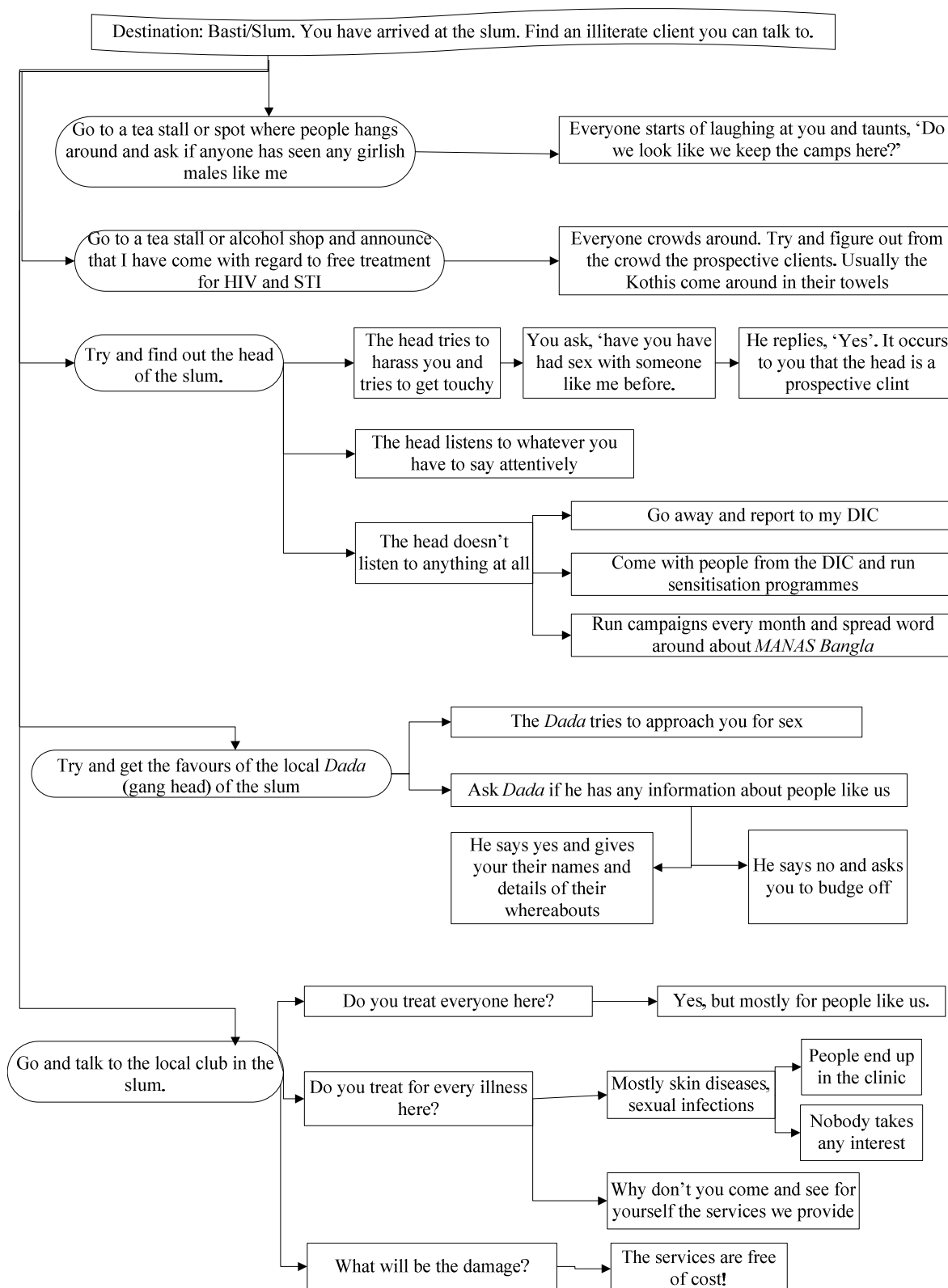
APPENDIX 4: Initial Structure of Dilemmas

FOLLOWING ARE THE INITIAL STRUCTURE OF DILEMMAS WHICH WERE RESTRUCTURED THROUGH THE PARTICIPATORY ITERATIVE PROCESS:

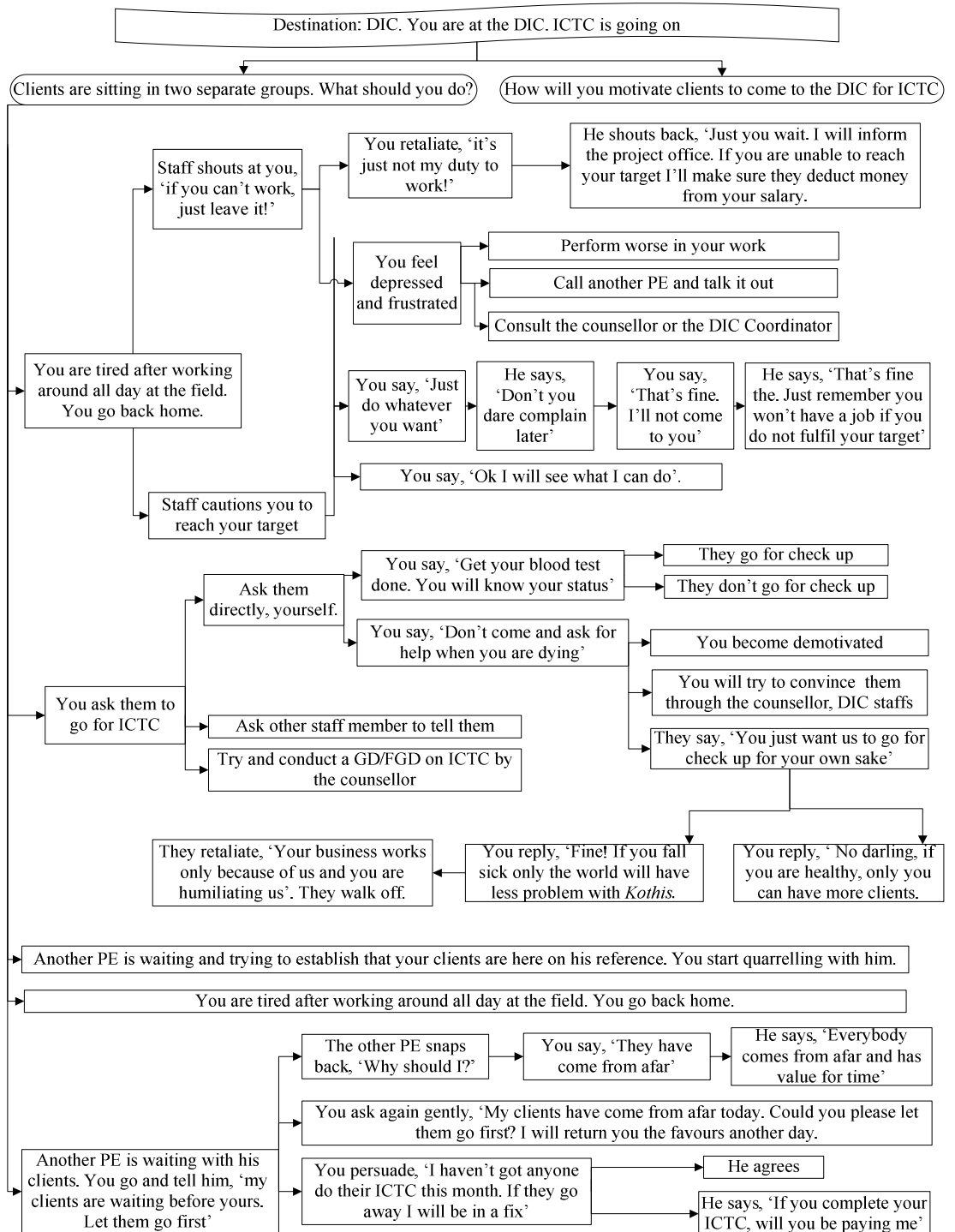
DILEMMA AT DIC



DILEMMA AT BASTI OR SLUM

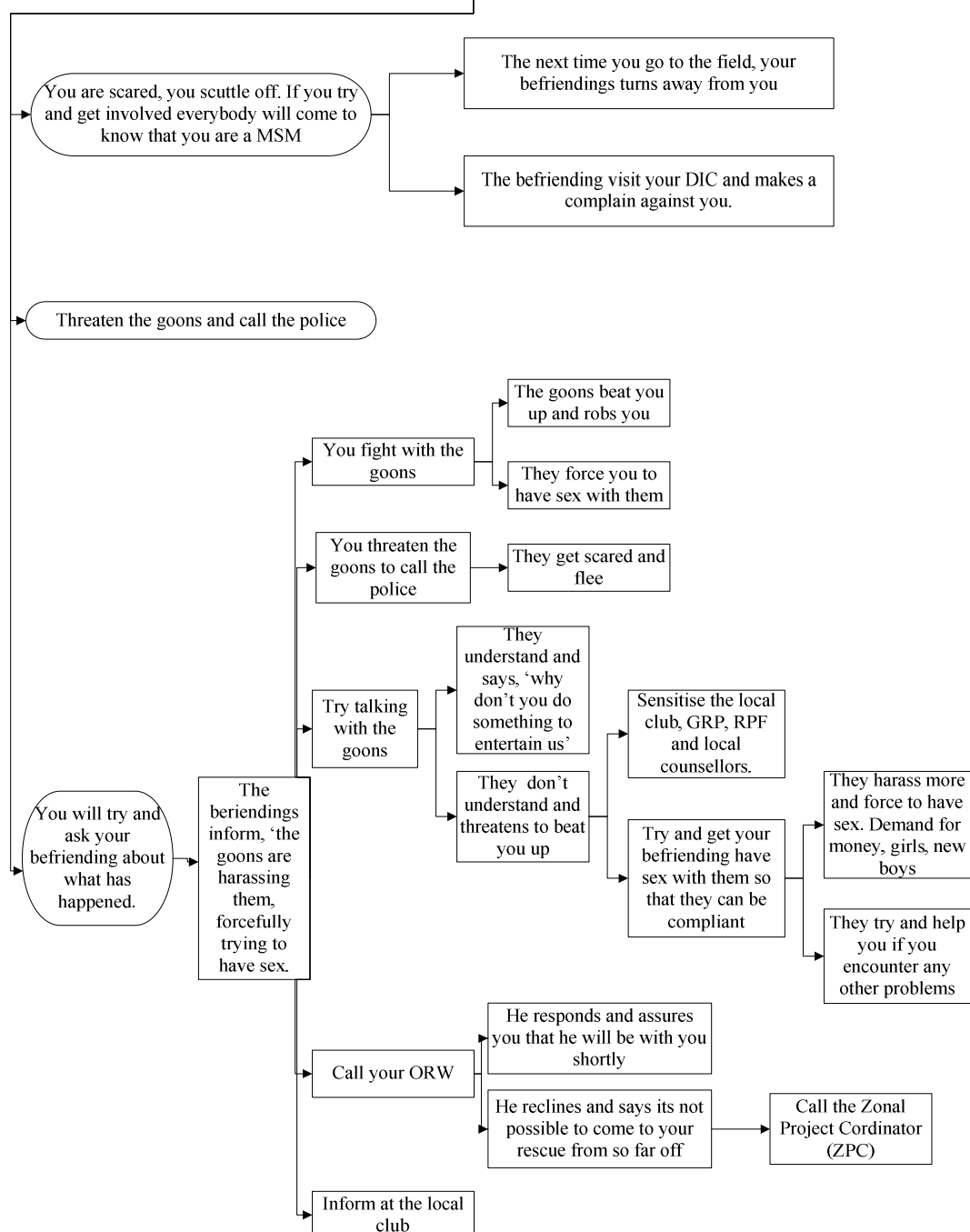


DILEMMA AT DIC

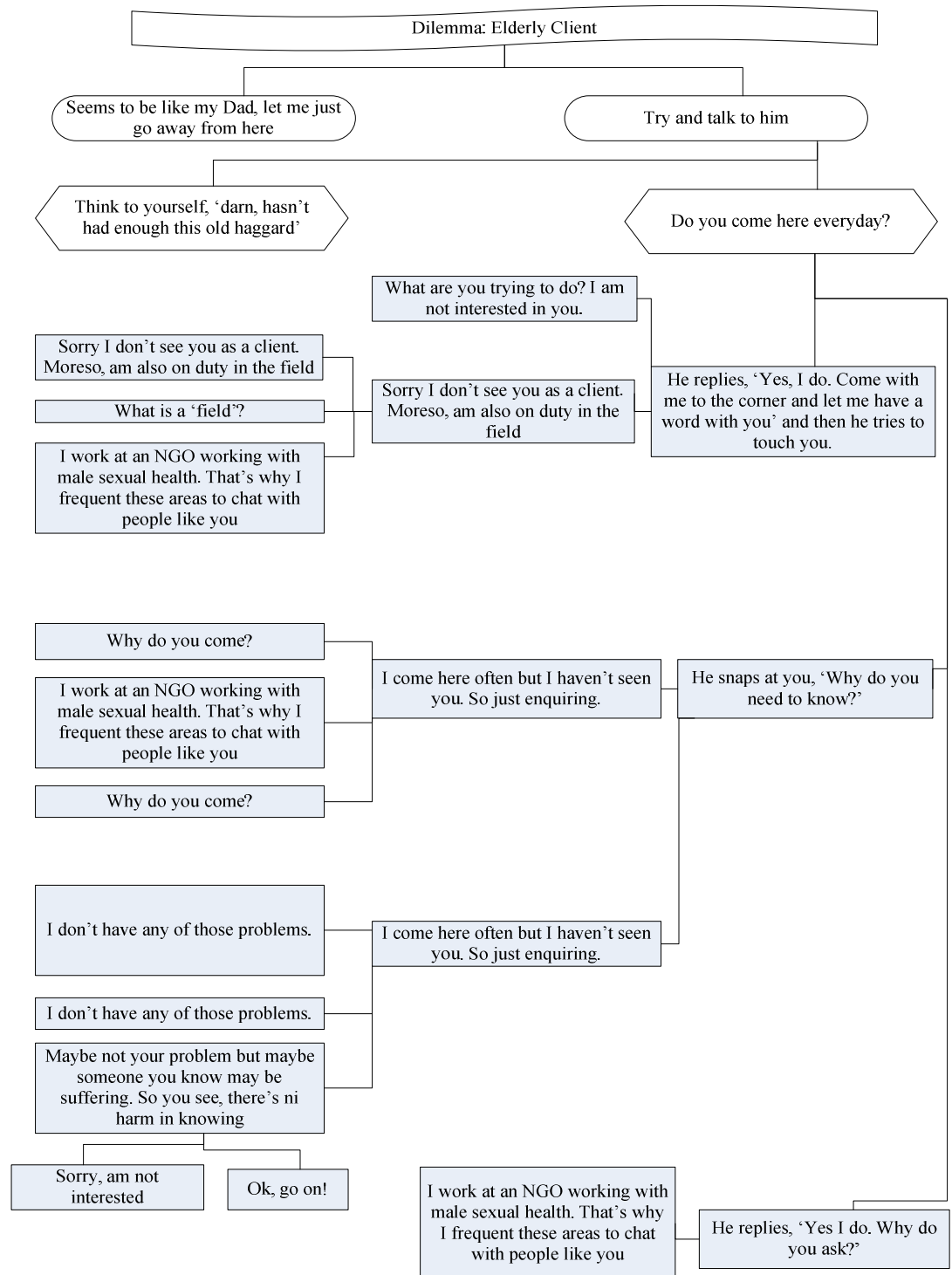


DILEMMA AT STATION AREA

Destination: Station Area. You have arrived at the station area. One of your befriending is getting harassed by the local goons.



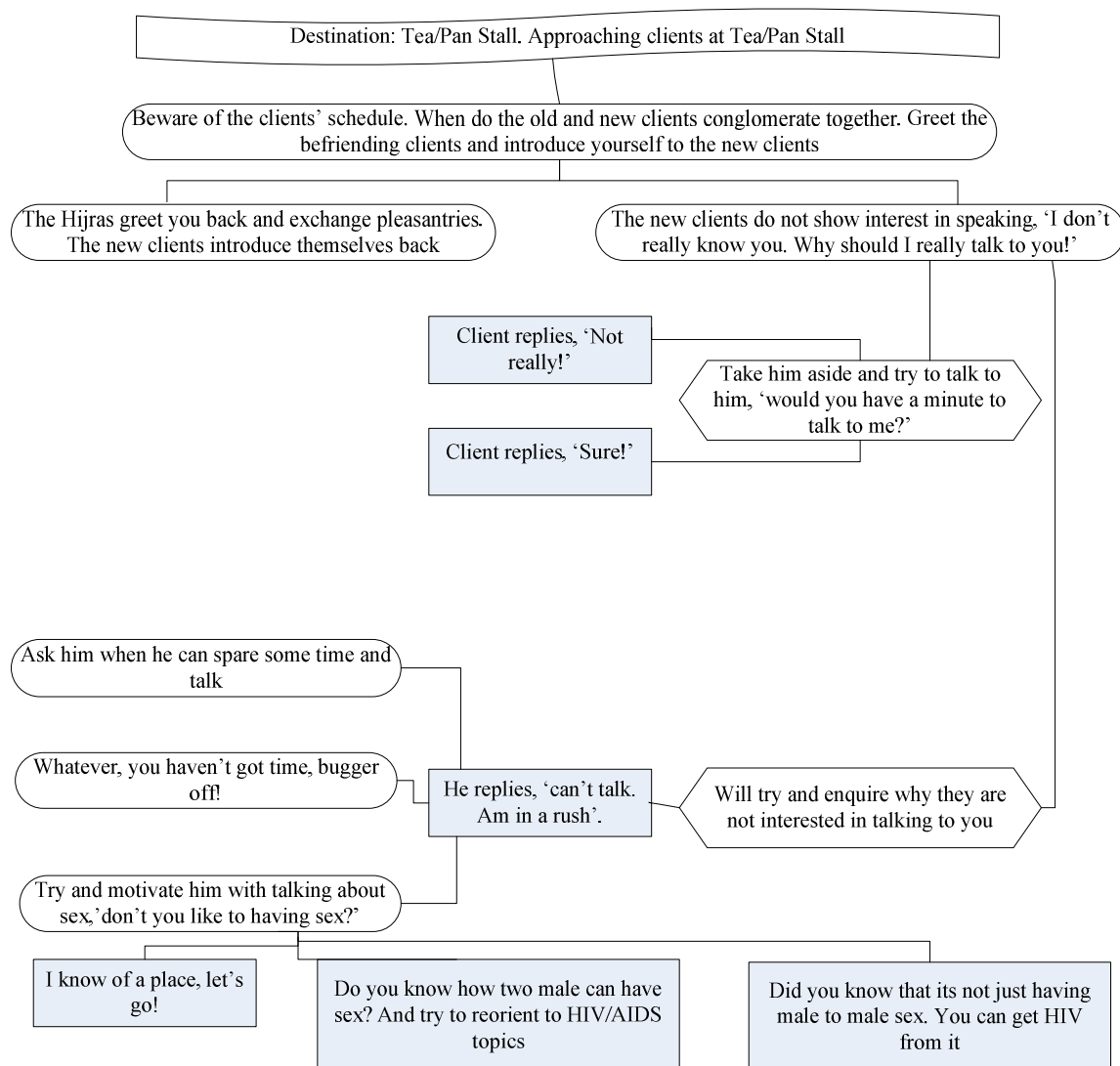
DILEMMA: ELDERLY CLIENT



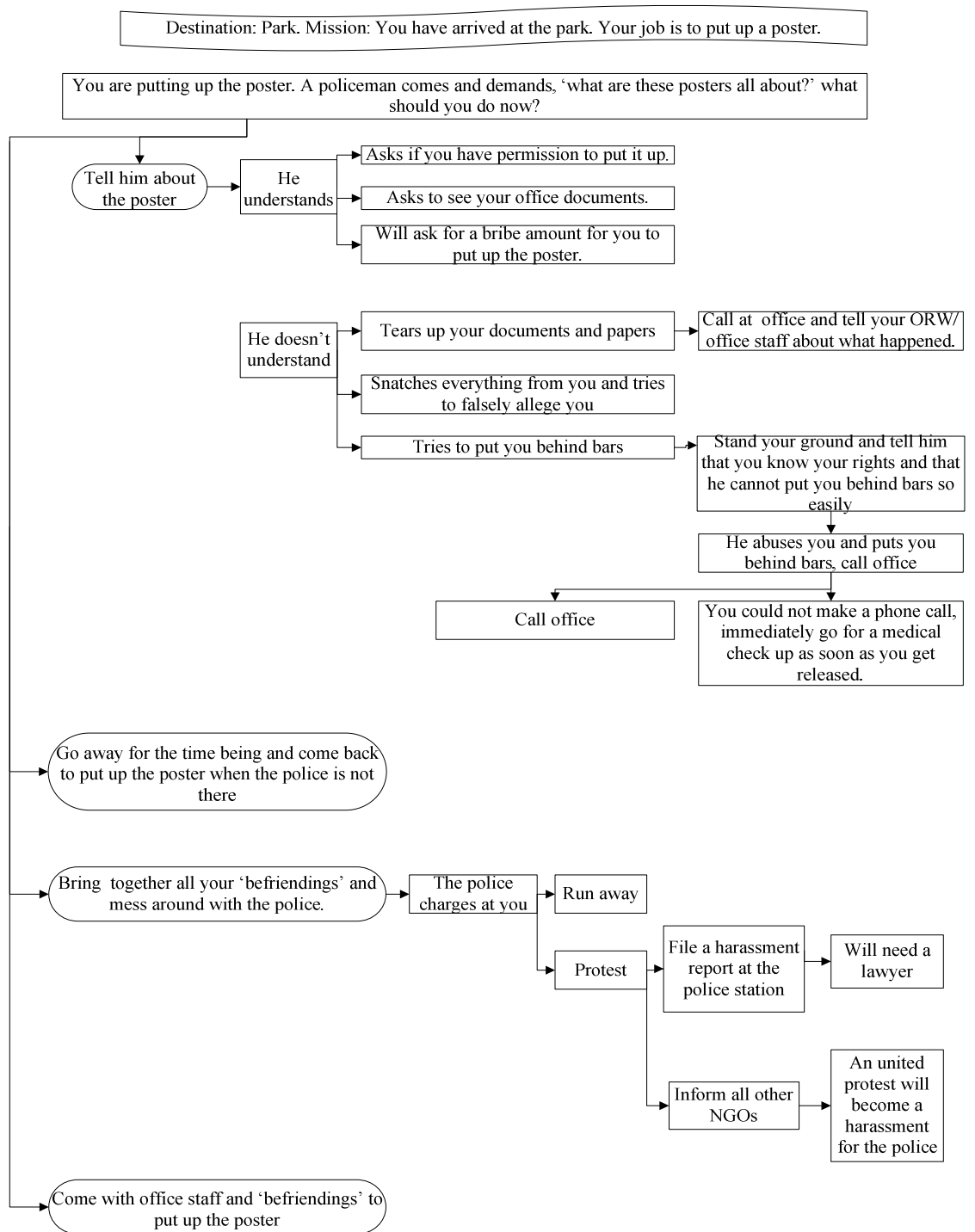
APPENDIX 5: Initial structure of Missions

FOLLOWING ARE THE INITIAL STRUCTURE OF MISSIONS WHICH WERE RESTRUCTURED THROUGH THE PARTICIPATORY ITERATIVE PROCESS:

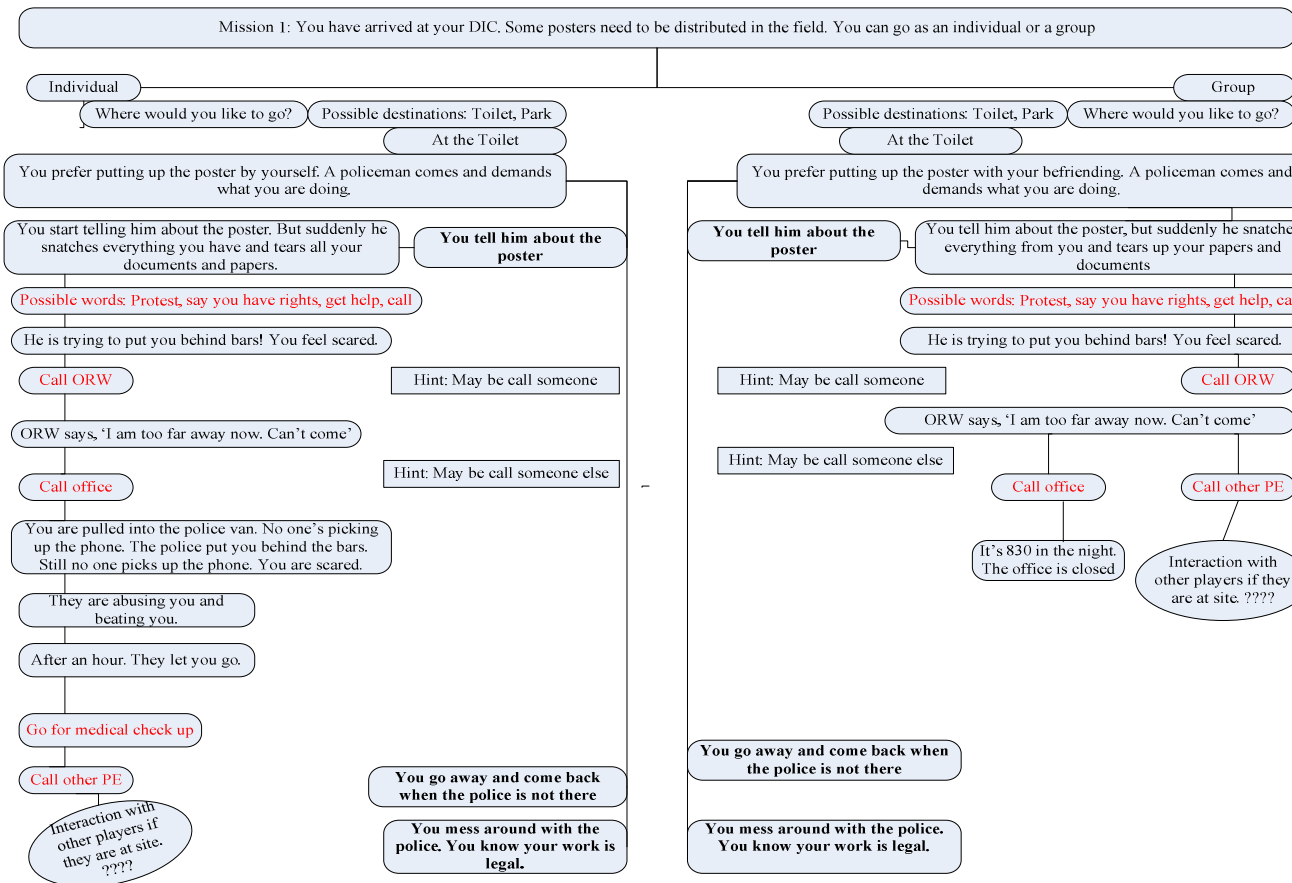
MISSION AT A PAN/TEA STALL



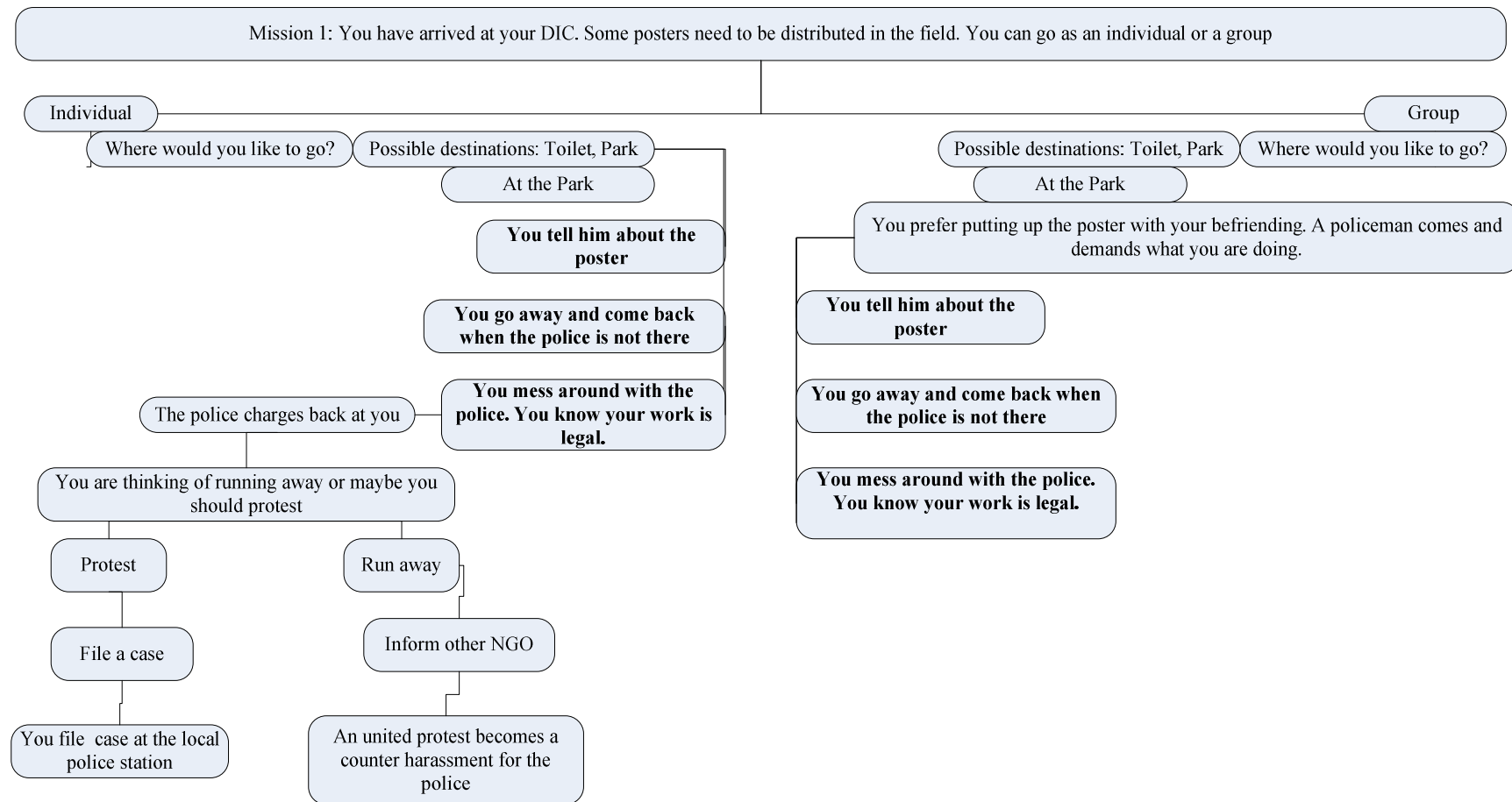
MISSION AT PARK



MISSION AT DIC



MISSION AT DIC



APPENDIX 6: Number of Keywords used

1. Number of each game action undertaken by players (zero where not otherwise indicated):

Player	Actions and totals										
	GO	FIND	PICKUP	USE	DROP	SAY	UPDATE	HELP	Dilemma A	Dilemma B	Dilemma C
P568_Rick	4	8	2			4	1		1		
P569_Suro	1					2	1			2	
P570_samy	1	1				7	2				
P571_Jenet	5	2				34					
P572_Puchun	9	2	4	4	1	16	2			1	
P573_Tina	4	1				10	1				
P574_Dona	2	3	1			24	1	1			
P575_Janam	3	4				5	1				
P576_sSrilekha	5	5	1	1		8	1				
P577_Shilpa	4	6				21	1	1			
P578_Ritesh	4	3				11	1			1	
P579_Romen	3		3			5	1				
P580_Bobbly	1			1			1				
P581_Rakshanda	3	5				8	1				
P582_Babo	3	1				2	2	1			
P583_Lily	1						1				
P584_Juthika							1				
P585_Abhradeep	4	2									

N.B. PLAYER TOTALS MAY NOT REFLECT THOSE SHOWN IN TABLE 7.5 AS SOME MESSAGES SENT WERE NOT VALID GAME ACTIONS.

2. Total number of each action used in the game:

Action	GO	FIND	PICKUP	USE	DROP	SAY	UPDATE	HELP	A	B
Total	57	43	11	6	1	157	19	3	1	4

APPENDIX 7: Logs of players' visit to destinations

The following tables show records of which player are at the PARK, DIC, RAILWAY STATION or RS and TOILET through the hours of the game. The first column shows the time, the second column shows if someone left or arrived at that particular time. The final column shows all the players at that location.

1. Players visiting Park location through the game

System Time	What Changed	Players at location
Start of game		None
2010-10-26 13:25:52	P572_Puchun (Arrives)	P572_Puchun
2010-10-26 13:27:52	P574_Dona (Arrives)	P572_Puchun P574_Dona
2010-10-26 13:28:05	P572_Puchun (Leaves)	P574_Dona
2010-10-26 13:28:53	P581_Rakshanda (Arrives)	P574_Dona P581_Rakshanda
2010-10-26 13:33:18	P577_Shilpa (Arrives)	P574_Dona P577_Shilpa P581_Rakshanda
2010-10-26 13:37:08	P571_Jenet (Arrives)	P571_Jenet P574_Dona P577_Shilpa P581_Rakshanda
2010-10-26 13:40:52	P571_Jenet (Leaves)	P574_Dona P577_Shilpa P581_Rakshanda
2010-10-26 13:45:03	P579_Romen (Arrives)	P574_Dona P577_Shilpa P579_Romen P581_Rakshanda
2010-10-26 13:46:32	P574_Dona (Leaves)	P577_Shilpa P579_Romen P581_Rakshanda
2010-10-26 13:49:42	P582_Babo (Arrives)	P577_Shilpa P579_Romen P581_Rakshanda P582_Babo
2010-10-26 13:50:02	P572_Puchun (Arrives)	P572_Puchun P577_Shilpa P579_Romen P581_Rakshanda P582_Babo
2010-10-26 13:50:41	P572_Puchun (Leaves)	P577_Shilpa P579_Romen P581_Rakshanda P582_Babo
2010-10-26 13:58:50	P577_Shilpa (Leaves)	P579_Romen P581_Rakshanda P582_Babo

2010-10-26 14:01:50	P572_Puchun (Arrives)	P572_Puchun P579_Romen P581_Rakshanda P582_Babo
2010-10-26 14:02:38	P572_Puchun (Leaves)	P579_Romen P581_Rakshanda P582_Babo
2010-10-26 14:15:48	P577_Shilpa (Arrives)	P573_Tina P577_Shilpa P579_Romen P581_Rakshanda P582_Babo
2010-10-26 14:18:31	P580_Bobbly (Arrives)	P573_Tina P577_Shilpa P579_Romen P580_Bobbly P581_Rakshanda P582_Babo
2010-10-26 14:24:28	P577_Shilpa (Leaves)	P573_Tina P579_Romen P580_Bobbly P581_Rakshanda P582_Babo
2010-10-26 15:51:23	P581_Rakshanda (Leaves)	P573_Tina P579_Romen P580_Bobbly P582_Babo
2010-10-26 16:02:55	P578_Ritesh (Arrives)	P573_Tina P578_Ritesh P579_Romen P580_Bobbly P582_Babo
2010-10-26 16:10:19	P572_Puchun (Arrives)	P572_Puchun P573_Tina P578_Ritesh P579_Romen P580_Bobbly P582_Babo
2010-10-26 16:13:05	P575_Janam (Arrives)	P572_Puchun P573_Tina P575_Janam P578_Ritesh P579_Romen P580_Bobbly P582_Babo
2010-10-26 16:15:00	P576_sSrilekha (Arrives)	P572_Puchun P573_Tina P575_Janam P576_sSrilekha P578_Ritesh P579_Romen P580_Bobbly P582_Babo

2010-10-26 16:15:27	P575_Janam (Leaves)	P572_Puchun P573_Tina P576_sSrilekha P578_Ritesh P579_Romen P580_Bobbly P582_Babo
2010-10-26 16:40:07	P578_Ritesh (Leaves)	P572_Puchun P573_Tina P576_sSrilekha P579_Romen P580_Bobbly P582_Babo
2010-10-26 16:40:44	P572_Puchun (Leaves)	P573_Tina P576_sSrilekha P579_Romen P580_Bobbly P582_Babo
2010-10-26 17:24:06	P585_Abhradeep (Arrives)	P573_Tina P576_sSrilekha P579_Romen P580_Bobbly P582_Babo P585_Abhradeep

2. Players visiting DIC location through the game

System Time	What Changed	Players at location
Start of game		None
2010-10-26 13:14:02	P576_sSrilekha (Arrives)	P576_sSrilekha
2010-10-26 13:26:20	P578_Ritesh (Arrives)	P576_sSrilekha P578_Ritesh
2010-10-26 13:27:07	P579_Romen (Arrives)	P576_sSrilekha P578_Ritesh P579_Romen
2010-10-26 13:28:05	P572_Puchun (Arrives)	P572_Puchun P576_sSrilekha P578_Ritesh P579_Romen
2010-10-26 13:41:19	P568_Rick (Arrives)	P568_Rick P572_Puchun P576_sSrilekha P578_Ritesh P579_Romen
2010-10-26 13:43:09	P571_Jenet (Arrives)	P568_Rick P571_Jenet P572_Puchun P576_sSrilekha P578_Ritesh P579_Romen
2010-10-26 13:43:26	P582_Babo (Arrives)	P568_Rick P571_Jenet P572_Puchun P576_sSrilekha P578_Ritesh P579_Romen P582_Babo
2010-10-26 13:45:03	P579_Romen (Leaves)	P568_Rick P571_Jenet P572_Puchun P576_sSrilekha P578_Ritesh P582_Babo
2010-10-26 13:45:15	P576_sSrilekha (Leaves)	P568_Rick P571_Jenet P572_Puchun P578_Ritesh P582_Babo
2010-10-26 13:46:28	P571_Jenet (Leaves)	P568_Rick P572_Puchun P578_Ritesh P582_Babo
2010-10-26 13:49:42	P582_Babo (Leaves)	P568_Rick P572_Puchun P578_Ritesh
2010-10-26 13:50:02	P572_Puchun (Leaves)	P568_Rick P578_Ritesh
2010-10-26 13:50:41	P572_Puchun (Arrives)	P568_Rick P572_Puchun P578_Ritesh

2010-10-26 14:01:50	P572_Puchun (Leaves)	P568_Rick P578_Ritesh
2010-10-26 14:12:50	P572_Puchun (Arrives)	P568_Rick P572_Puchun P578_Ritesh
2010-10-26 16:02:55	P578_Ritesh (Leaves)	P568_Rick P572_Puchun
2010-10-26 16:07:40	P568_Rick (Leaves)	P572_Puchun
2010-10-26 16:10:19	P572_Puchun (Leaves)	
2010-10-26 17:00:28	P575_Janam (Arrives)	P575_Janam

3. Players visiting Railway Station or RS location through the game

System Time	What Changed	Players at location
Start of game		None
2010-10-26 13:28:46	P571_Jenet (Arrives)	P571_Jenet
2010-10-26 13:37:08	P571_Jenet (Leaves)	
2010-10-26 13:55:16	P573_Tina (Arrives)	P573_Tina
2010-10-26 13:57:50	P573_Tina (Leaves)	
2010-10-26 13:58:50	P577_Shilpa (Arrives)	P577_Shilpa
2010-10-26 14:15:48	P577_Shilpa (Leaves)	
2010-10-26 15:51:23	P581_Rakshanda (Arrives)	P581_Rakshanda
2010-10-26 16:05:43	P576_sSrilekha (Arrives)	P576_sSrilekha P581_Rakshanda
2010-10-26 16:07:40	P568_Rick (Arrives)	P568_Rick P576_sSrilekha P581_Rakshanda
2010-10-26 16:15:00	P576_sSrilekha (Leaves)	P568_Rick P581_Rakshanda
2010-10-26 16:40:07	P578_Ritesh (Arrives)	P568_Rick P578_Ritesh P581_Rakshanda
2010-10-26 16:40:12	P581_Rakshanda (Leaves)	P568_Rick P578_Ritesh
2010-10-26 16:40:44	P572_Puchun (Arrives)	P568_Rick P572_Puchun P578_Ritesh
2010-10-26 16:54:27	P568_Rick (Leaves)	P572_Puchun P578_Ritesh

4. Players visiting Toilet location through the game

System Time	playerID - Who moved	Players at location
Start of game		None
2010-10-26 13:10:46	P576_sSrilekha (Arrives)	P576_sSrilekha
2010-10-26 13:14:02	P576_sSrilekha (Leaves)	
2010-10-26 13:26:06	P583_Lily (Arrives)	P583_Lily
2010-10-26 13:29:01	P573_Tina (Arrives)	P573_Tina P583_Lily
2010-10-26 13:33:25	P568_Rick (Arrives)	P568_Rick P573_Tina P583_Lily
2010-10-26 13:40:52	P571_Jenet (Arrives)	P568_Rick P571_Jenet P573_Tina P583_Lily
2010-10-26 13:41:19	P568_Rick (Leaves)	P571_Jenet P573_Tina P583_Lily
2010-10-26 13:43:09	P571_Jenet (Leaves)	P573_Tina P583_Lily
2010-10-26 13:45:15	P576_sSrilekha (Arrives)	P573_Tina P576_sSrilekha P583_Lily
2010-10-26 13:46:28	P571_Jenet (Arrives)	P571_Jenet P573_Tina P576_sSrilekha P583_Lily
2010-10-26 13:46:32	P574_Dona (Arrives)	P571_Jenet P573_Tina P574_Dona P576_sSrilekha P583_Lily
2010-10-26 13:55:16	P573_Tina (Leaves)	P571_Jenet P574_Dona P576_sSrilekha P583_Lily
2010-10-26 13:57:50	P573_Tina (Arrives)	P571_Jenet P573_Tina P574_Dona P576_sSrilekha P583_Lily
2010-10-26 13:58:50	P577_Shilpa (Leaves)	P571_Jenet P573_Tina P574_Dona P576_sSrilekha P583_Lily
2010-10-26 14:02:38	P572_Puchun (Arrives)	P571_Jenet P572_Puchun P573_Tina P574_Dona P576_sSrilekha P583_Lily
2010-10-26 14:12:50	P572_Puchun (Leaves)	P571_Jenet P573_Tina P574_Dona P576_sSrilekha P583_Lily
2010-10-26 14:15:04	P573_Tina (Leaves)	P571_Jenet P574_Dona P576_sSrilekha P583_Lily

2010-10-26 14:24:28	P577_Shilpa (Arrives)	P571_Jenet P574_Dona P576_sSrilekha P577_Shilpa P583_Lily
2010-10-26 16:15:00	P576_sSrilekha (Leaves)	P571_Jenet P574_Dona P577_Shilpa P583_Lily
2010-10-26 16:15:27	P575_Janam (Arrives)	P571_Jenet P574_Dona P575_Janam P577_Shilpa P583_Lily
2010-10-26 16:40:12	P581_Rakshanda (Arrives)	P571_Jenet P574_Dona P575_Janam P577_Shilpa P581_Rakshanda P583_Lily
2010-10-26 16:50:19	P585_Abhradeep (Arrives)	P571_Jenet P574_Dona P575_Janam P577_Shilpa P581_Rakshanda P583_Lily P585_Abhradeep
2010-10-26 16:54:27	P568_Rick (Arrives)	P568_Rick P571_Jenet P574_Dona P575_Janam P577_Shilpa P581_Rakshanda P583_Lily P585_Abhradeep
2010-10-26 17:00:28	P575_Janam (Leaves)	P568_Rick P571_Jenet P574_Dona P577_Shilpa P581_Rakshanda P583_Lily P585_Abhradeep
2010-10-26 17:24:06	P585_Abhradeep (Leaves)	P568_Rick P571_Jenet P574_Dona P577_Shilp P581_Rakshand P583_Lily