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Funds of knowledge 2.0: Towards digital funds of identity?

This article builds on the author's previous work on Funds of Identity by offering a more robust conceptualisation of identity in relation to Vygotsky's concept of *perezhivanie* which is then situated within the discourse on digital identities. I also suggest how teachers and researchers could use avatars, digital representations of online users, as an identity text for drawing on and constructing students' *funds of identity*. In order to illustrate this approach, I briefly sketch an ongoing class-based research project called The Avatar Project. Overall, this article reaffirms and develops the argument that the Funds of Identity approach is an evolution of the Funds of Knowledge. This thesis is encapsulated in the phrase, *digital funds of identity: funds of knowledge 2.0* which makes the connection between Funds of Identity and new technology explicit.

Keywords: funds of identity; digital identities; funds of knowledge; avatars.

1. Introduction

This article builds on two previous papers (Poole, 2016b; Poole, 2016c) which explored how the Funds of Knowledge¹ concept could be implemented in the People's Republic of China. In the first article (2016c), I identified a number of logistical and cultural constraints that might problematise the implementation of the Funds of Knowledge concept in the Chinese context. In so doing, I briefly explored the role that new technology might play in furthering social justice and the opportunities it might give researchers in accessing minority households. I noted that, increasingly, young people interact and communicate with each other via portable online devices which suggested that a household investigation as the main unit of analysis might overlook *funds of knowledge* in digital contexts. I developed this idea further in a second paper (Poole, 2016b) in which I explored the role that avatars, virtual learning environments, and hypertext could play in the development of online identities and their pedagogical application within the classroom. This article draws on and develops both of these ideas by offering a more robust conceptualisation of identity and a more developed explication of how avatars could be used as identity texts in the Chinese context. In so doing, I reaffirm the case for considering Funds of Identity as an evolution of the Funds of Knowledge concept by dialoguing with the literature on digital identities and literacies. My thesis is encapsulated in the phrase *digital funds of identity: Funds of knowledge 2.0*. This phrase underscores the connection between Funds of Identity and Funds of Knowledge, but also emphasises that Funds of Identity is a significant evolution of the former concept because it is epistemologically commensurate with 21st century ways of knowing which are increasingly mediated by new technology.

As my thinking is predicated on the contentious view that digital devices increasingly mediate young people's social interaction with each other and their perceptions of reality (Miller, 2015), some explanation is required in order to make my position more explicit. I make a crucial distinction between what I call *analogue social interaction*

¹ When discussing the brand or the concept of Funds of Knowledge it is customary to capitalise the phrase. However, when discussing the bodies of knowledge and skills that individuals possess (their *funds of knowledge*) the phrase is written in lower case. I have also chosen to italicise the latter in order to make the difference more explicit. I have chosen to capitalise or not depending on how the phrase is being used. The same logic stands for the concept of Funds of identity and an individual's *funds of identity*.

and *digital social interaction*. Analogue social interaction refers to theories of social interaction and identity, such as Vygotsky's *perezhivanie* (1998), that were formulated within pre-digital social contexts that took by face-to-face communication as the paradigmatic form of social interaction. In relation to classroom pedagogy, analogue social reality is characterised by 'technocratic notions of literacy' that emphasise the development of decontextualised skills which could be likened to '2-dimensional' literacies that are linear and paper based (Lotherington & Jenson, 2011). In contrast, the rise of new technology has led to what I call *digital social interaction* in which individuals increasingly interface with each other via hybrid learning spaces that allow for the embodiment of myriad identities, often in the form of avatars.² This is not to suggest that face-to-face social interaction is obsolete, but rather to underscore the fact that social interaction and identity formation have been significantly transformed by new technology. While there has been a move to explore students' *funds of knowledge* in relation to new literacies, such as digital practices, spaces and artefacts (Schwartz, 2015), the discourse on Funds of Identity has yet to fully capitalise on these digital methodologies, remaining largely committed to an *analogue* conceptualisation of social reality. I hope to add to the literature by suggesting that identity should be situated within the discourse on digital identity, thereby ensuring that the Funds of Identity concept is conceptually and epistemologically commensurate with 21st century social interaction as a digitally mediated experience.

1.2. Methodology

The literature search for this article was carried out using Google Scholar and ERIC and was supplemented by UNNC's library's "NUsearch" tool which provided access to library collections and articles not available via Google Scholar and ERIC. The following search terms were employed in the initial round of review: "Funds of Knowledge" and "Funds of Knowledge and the household". This search did not set any parameters in terms of year of publication as I wanted to get as broad a picture of the literature as possible. I also performed a second literature search using the same search terms, but focused on literature produced since 2012 in order to identify developments in the literature on Funds of Knowledge. As this round of review highlighted the emerging concept of Funds of Identity, I performed another search using "Funds of Identity" and "Funds of Identity and digital literacies". As this article makes use of secondary data in lieu of primary data, the literature search focused primarily on journal articles published in international peer-reviewed journals in order to ensure that the data appropriated was both valid and reliable.

2. Funds of Knowledge

Because the reader may not be familiar with Funds of Identity or Funds of Knowledge, I offer a short literature review of the two approaches. I have chosen to review these two approaches in the form of a narrative in order to show how Funds of Identity developed from Funds of Knowledge.

2.1. Definition of funds of knowledge

² Defined as "a perceptible digital representation whose behaviors reflect those executed, typically in real time, by a specific human being" (Bailenson & Blascovich, 2004, p 65).

Within the Funds of knowledge literature, students' *funds of knowledge* are taken to be "historically accumulated and culturally developed bod[ies] of knowledge and skills essential for household or individual functioning and well being" (Moll, Amanti, Neff, D & Gonzalez, 1992, p. 133). The Funds of Knowledge concept is predicated upon a sociohistorical approach to culture that highlights the way people live culture in a 'mutually constitutive manner' (Gutierrez & Rogoff, 2003). This dialectical approach to culture enables educators to become conscious of, and subsequently transform, their deficit thinking about minority students who in fact possess ample amounts of skills and out-of-school knowledge that possess exchange value within the mainstream classroom.

2.2. Household funds of knowledge

Within the discourse of the Tucson scholars, (Gonzalez, Andrade, Civil & Moll, 2001; Gonzalez, Moll & Amanti, 2005; Gonzalez, Moll, Floyd-Tenery, Rivera, Rendon, Gonzales & Amanti, 1993; Moll & Greenberg, 1990; Moll et al., 1992) students' *funds of knowledge* are conceptualised as an essential part of the survival of the household and the local community. The household is seen as the main unit of analysis and the skills and knowledge therein are taken to be representative of the whole family. As part of a collaborative relationship between academics and educators, teachers receive training in ethnography and interviewing as prelude to visiting students' households in order to identify and document household *funds of knowledge* from a historical perspective (Gonzalez et al., 1993). The collected data is then used to construct units of work that help to bridge the gap between home and school.

2.3. Alternative sources of funds of knowledge: Towards funds of identity

Although this approach has been greatly influential in popularising the Funds of Knowledge approach, the emphasis on a single methodology has been critiqued for creating dependence on 'adult' household practices as the main unit of analysis (Esteban-Guitart & Moll 2014; Hogg, 2011). While children are an integral part of the household, they also create their own social worlds which are independent from adults' social life and their shared home environments (Moll, 2005). Moje, Ciechanowski, Kramer, Ellis, Carrillo & Collazo (2004) identify family, community, popular culture, and peer group, as alternative sources of *funds of knowledge*. Similarly, Hattam, Brennan, Zipin & Comber (2009) suggest that *vernacular literacies*, informal out-of-school knowledge such as rap music, dialects and vernacular languages, are significant sources of *funds of knowledge* that are often devalued and considered to have no place within the formal curriculum. Zipin (2009) goes so far as to identify 'dark' lifeworld knowledge as a potential source of funds of knowledge. In so doing, he critiques Gonzalez et al. (2005) for focusing almost exclusively on 'light' or positive topics that paper over disadvantaged students' often violent lifeworlds. Zipin (2009) also extends the term *funds of knowledge* by suggesting that teachers and researchers should consider how students learn in out-of-school contexts, including the household. He refers to these out-of-school pedagogies as *funds of pedagogy*. Johnson & Johnson (2016) build on the concept of funds of pedagogy by showing that *scholastic funds of knowledge*, defined as the accumulated set of skills, aptitudes, and habits students draw on when faced with accomplishing academic tasks, can increase students' engagement in academic contexts.

3. *Funds of identity*

In response to the critique of overreliance on a single methodology (Esteban-Guitart & Moll, 2014) the concept of Funds of Identity has started to gain traction in the literature (Joves, Siqués & Esteban-Guitart, 2015; Nogueira, 2014; Subero, Vujasinović & Esteban-Guitart, 2016). This section explores the concept of Funds of Identity by offering a definition of the term, its conceptual underpinnings in relation to Vygotsky, strategies that have been employed to detect funds of identity, and pedagogical uses of the concept. It then explores Nogueira's (2014) critique and extension of the concept, arguing that while Nogueira significantly contributes to the development of the concept, her conceptualisation of identity is still informed by what I term an *analogue* version of social interaction.

3.1. *Definition of funds of identity*

Whereas *funds of knowledge* are taken to be the resources, skills and bodies of knowledge of adults, *funds of identity* are constructed and appropriated by individuals in the construction of their identity (Esteban-Guitart, 2012). Therefore, individuals accumulate not just household *funds of knowledge* but also life experiences that help them to define themselves (Joves, et al., 2015). These life experiences, it is argued, may or may not be in continuity with the *funds of knowledge* available in the family home (Subero et al., 2016) as children also create their own *funds of knowledge* (Esteban-Guitart & Moll, 2014; Nogueira, 2014). Although there can be discontinuity between household knowledge and an individual's experiences, the two approaches are seen as complementary because 'funds of knowledge are funds of identity when people use them to define themselves' (Esteban-Guitart & Moll, 2014, p. 37).

3.2. *Strategies for uncovering funds of identity*

In order to detect students' *funds of identity*, researchers make use of visual methods, such as self-portraits (Saubich & Esteban-Guitart, 2011) and a 'significant circle' which is defined as a graphical representation based on relation mapping which involves participants writing down the people and activities or things that are most meaningful to them in a big circle (Joves et al., 2015). Subero et al. (2016) also suggest the use of symbolic artefacts as vehicles for students to bring aspects of their out-of-school lives into school. Researchers have also made use of identity texts for detecting and creating new funds of identity (Subero et al., 2016). An identity text can be any artefact produced by students who have invested some of their identity in them. Identity texts are also well suited for bilingual learners. As Subero et al. (2016) explain, 'connecting to English what students know in their first language is a strategy that helps to affirm and recognise their identities and to foster biliteracy development in an effort to expand pupils' thinking' (p. 9).

3.3. *Defining Identity*

The concept of identity within the Funds of Identity discourse is predicated upon sociocultural explanations of interaction and identity formation. Esteban-Guitart & Moll (2014), for example, conceptualise identity from a Vygotskian perspective, highlighting the role of lived experience or *perezhivanie* in the process of identity construction. I situate the concept within the work of Esteban-Guitart & Moll,

Nogueira (2014) and Blunden's (2014). It is beyond the scope of this article to provide an exhaustive account of what is a highly ambiguous term; therefore, readers are directed to Vygotsky (1978, 1998) for a more sustained and nuanced explication of *perezhivanie*.

3.4. *Vygotskian perspective on identity*

For Esteban-Guitart & Moll (2014), identity is empirical, embedded in cultural and historical factors such as schools, artefacts and cultural beliefs which are inextricably linked to a person's actions. In order to illustrate this, the authors draw on Vygotsky's concept of *perezhivanie*, or *lived experience*, which has been used to explain how environmental conditions can differentially affect each person (Negueria, 2014). The authors explain that lived experience is a result of interaction between people and the world. Identity becomes a cultural artefact that facilitates reflection over the emotional and cognitive processes of self-defining. This interpretation of identity continues to be foundational in the Funds of Identity discourse. For example, Joves et al. (2015) quote *verbatim* from Esteban-Guitart & Moll (2014) while Subero et al. (2016) appropriate Esteban & Moll's (2014) definition by explaining that 'identity does not exist solely within the mind of the individuals, but rather is distributed among persons, artefacts, activities and settings' (p. 6). In both cases, the authors accept Esteban-Guitart & Moll's conceptualisation of identity without critique or qualification. This may be because the authors consider Esteban & Moll's definition to be foundational and are therefore more concerned with presenting strategies for detecting funds of identity.

3.5. *Alternative interpretations of perezhivanie*

Negueria (2014) has expanded the conceptualisation of identity within the Funds of Identity discourse by drawing on Bakhtin's notion that intersubjectivity (the psychological relation between people) always proceeds personal subjectivity which she considers to be in accordance with Vygotsky's ideas about the transformation of social functions into psychological functions. As she writes, 'the meaning and sense production process is social and ideological, dialogical, and multivoiced' (Negueria, 2014, p. 54). She also offers an alternative interpretation of *perezhivanie* by reassessing its meaning. Unlike Esteban & Moll, who translate *perezhivanie* as *lived experience*, Negueria uses the more specific *emotional experience* which 'implies a dynamic tension between the given world [sic] concrete conditions and the way of experiencing these conditions' (p. 52). From this perspective, identity formation is a dynamic and reciprocal process as *lived experience* is 'refracted by each person depending on how each one understands and is affected by the conditions of existence (2014 p. 55). This results in the observation that 'funds of identity constitute and, at the same time, are constituted by [...] semiotic resources' (p. 55). Semiotic resources refer to the actions, materials, and artefacts that people use for both physiological (such as talking) and technological (such as computers or smart phones) communicative purposes and the ways in which these resources can be organized (van Leeuwen, 2004). Significantly, this distinction foregrounds the notion of multimodalities that begin to gesture towards new technology and digital literacy which I will take up later in this article.

I add to the enlargement of the funds of identity concept vis-à-vis Vygotsky by offering an alternative interpretation of *perezhivanie* by drawing upon Dewey's ideas about experience (Dewey, 1934) and Blunden's (2014) clarification and explication of

perezhivanie. Both Esteban-Guitart & Moll (2014) and Negueria (2014) use *perezhivanie* as if it were a mass noun, thereby giving the impression that the term is an abstract concept. However, with reference to Dewey (1934; 1989) who makes a crucial distinction between ongoing experience in general and ‘having an’ experience, it is also possible to conceptualise *perezhivanie* as a count noun – that is, *a perezhivanie* (Blunden, 2014). From this perspective, *a perezhivanie* could be understood as an emotional episode or situation that may, or may not be traumatic³, that consists of a unit comprised of two aspects: experience and catharsis. Although Esteban & Moll (2014) use ‘*lived experience*’ and Negueria (2014) ‘*emotional experience*’ to capture the complex meaning of *perezhivanie*, breaking the term into two nouns (experience and catharsis) captures the whole episode of identity change from beginning to end. Moreover, according to Blunden’s (2014) interpretation of *perezhivanie*, catharsis is a significant moment in the process of identity development because the working through of a situation or a crisis results in the creation of a new role. Although this new role is internalised by the individual, it still requires external affirmation or acceptance from others (family members, peers, or teachers) in order to become fully integrated. Development only occurs after catharsis as a result of the individual working through the experience and the experience becoming integrated with their personality (Blunden, 2014). To put it another way, once a person has worked through *a perezhivanie* the inchoate identity becomes “integrated within and demarcated in the general stream of experience from other experiences” (Dewey, 1934, p. 35). The concept of *perezhivanie* also reveals how individuals’ *funds of identity* and *funds of knowledge* overlap with each other. Students’ emerging identities need social reflection or verification from adults (or more experienced peers and teachers in the context of the school). Household funds of knowledge may be in continuity with students’ emerging identities, and therefore scaffold or support their progress through what could be called *zones of proximal identity development* or they may be in discontinuity, and therefore clash with, or effectively stifle, an emerging identity. The concepts of Funds of Identity and Funds of Knowledge also overlap as *perezhivanie* can be seen as analogous to Zipin’s notion of ‘dark funds of knowledge’ (2009). Therefore, allowing students to bring ‘dark funds of knowledge’ into the classroom may help them to work through a difficult emotional situation (i.e. reach catharsis) and construct new identities. However, there are many ethical issues associated with this approach, not least of all, the teacher taking on the role of a counselor. Despite this, identity, as illustrated in the next section, is integral to the learning process.

3.6. Pedagogical application of funds of identity

Identity is fundamental to education and has many pedagogical applications, particularly in relation to the Funds of Identity approach. For students, identity can be used as a lens through which to absorb new information and identities (Esteban-Guitart & Moll, 2014). For researchers, focusing on individual students and their *funds of identity* can help to uncover variation in students’ *funds of knowledge* (Esteban-Guitart & Moll, 2014). This is significant because the concept of *perezhivanie* attempts to explain why cohabitation in the same social environment leads to such a range of

³ In his lecture “The Problem of the Environment” (Vygotsky, 1998) Vygotsky uses the example of three children and their alcoholic mother to illustrate *a perezhivanie* thereby suggesting that *perezhivanie* refers to the working through of a trauma leading to catharsis. However, according to Bella Kotik-Friedgut (Blunden, 2014) *a perezhivanie* can also be used in a positive context. Generally, *perezhivanie* tends to be associated with negative experiences associated with trauma.

subjectivities. By situating students' *funds of identity* within sociocultural accounts of learning and identity formation, which stress a historical and contextual account of culture, teachers can also work through their own deficit thinking about their students. For schools in general and teachers specifically, uncovering and drawing on students' funds of identity can transform educational practices, which typically marginalise out-of-school knowledge, so they become more sensitive to the reality of learners (Joves et al., 2015). Vygotsky's ideas on identity are a reminder that teachers need to be attentive to the fact that students internalise their environments differentially due to *perezhivanie*. This has implications for differentiation, streaming, and the construction of curriculum. Teachers also need to be aware that identity formation is never a private, internal activity that is outside of their concern; rather, the process requires external validation; an accompanying transformation in teachers' and peers' own behaviour towards the individual student in order for a new identity or role to move beyond an inchoate state to become integrated within the personality. However, the emphasis on the formal curriculum can quash the development of learners' emerging identities and roles, particularly because even now policy is still biased towards fixed, trait-like accounts of culture (Guitierrez and Rogoff, 2003). This can lead to blind spots in which teachers overlook their students' funds of identities. An example, which I shall return to a little later below, is the rise of digital literacies. Increasingly, students possess many forms of *digital funds of knowledge* that teachers are not aware of due to a "discourse of deficit" which results in teachers devaluing and negating their students' digital funds of knowledge. Because of this, 'the gap is widening between the types of digital texts students use in their homes and those engaged with during school activities' (Honan, 2008, p. 42).

3.7. Limitations of identity from a Vygotskian perspective

While the Funds of Identity discourse has situated learning within a digital paradigm (Patiño & Guitart, 2014; Subero et al., 2016) it still tends to work with a conceptualisation of identity that is rooted in an analogue paradigm of social interaction which leads to commensurate strategies for uncovering funds of identity, such as a significant circle. However, as identity is now increasingly produced by, and dispersed across a range of digital devices, it is necessary to conceptualise identity in a new way. And in so doing, it is also necessary to create new strategies for uncovering digital identities. I believe avatars offer researchers a strategy that is not only conceptually commensurate with social interaction as digitised but also a strategy that embodies and enacts *prospective* education – that is, the creation of fluid knowledge in the form of multi-modal texts. I next develop my argument by exploring the notion of digital identity and show how sociocultural analogue conceptions of identity, such as *perezhivanie* are remediated within the discourse on digital identities.

4. Digital identities and literacies

This section offers an over-view of digital identities from a sociocultural perspective. While digital identities from a sociocultural perspective remain commensurate with Esteban-Guitart & Moll's (2014) interpretation of Vygotsky, they could also significantly add to the literature on Funds of Identity discourse by expanding the notion of identity in and for a digital age. This article then synthesises this literature with the literature on Funds of Identity in order to expand the conceptualisation of identity and, as a consequence of this, to suggest alternative methodologies that could

be employed by teachers and researchers for detecting, and drawing on, *funds of identity* and *funds of knowledge*.

4.1. *The digital divide*

As my argument is predicated upon the contentious view that new technology and digital literacies have had a profound effect on the way young people construct identities, it is first necessary to address the issue of the so-called ‘digital divide.’ Advocates of the digital divide thesis (Miller, 2015; Tapscot, 2008; Thomas, 2007) hold that there is a fundamental generational gap between those born before the advent of digitisation, who could be likened to *digital immigrants* and those born into digital technology – after 1980 – who could be called *digital natives* (Palfrey & Gasser, 2013). On the other side of the debate are those who consider the notion of a generational difference to be overstated. Although the evidence supporting the need to fundamentally change education systems to meet the needs of *digital natives* is said to be empirically weak (Bennett, Maton, & Kervin, 2008), there is nevertheless a convincing body of empirically grounded research that suggests that increasingly students possess a vast body of digital literacies that schools routinely negate (Honan, 2008; Levy, 2009; Lotherington & Jenson, 2011; Schwartz, 2015). Some of the reasons given for the underutilisation of new technologies and students’ *digital funds of knowledge* and *funds of identity* include the prevalence of high stakes testing, which has resulted in the curriculum being tightly regulated and controlled (Vasudevan, Schultz & Bateman, 2010), and teachers still clinging to the notion of a ‘technocratic notion of literacy’ that emphasises the development of decontextualized skills which could be likened to *2-dimensional literacies* that are linear and paper based (Lotherington & Jenson, 2011). Overall, while I support the notion of a digital divide, the reader should be cautious in assuming that there is an absolute distinction between digital immigrants and digital natives. Despite some qualification, it is possible to say that the rise of new technology has led to profound changes in the way students approach literary and identity construction.

4.2. *Digital literacies*

Digital technologies, such as smart phones and laptop computers, have revolutionarised education, particularly literacy practice, by adding a third dimension of space, which allows for collaboration, and a fourth dimension of time, which allows for interaction. Increasingly for millennials – those born after 1981 - reality includes new literacies embedded within new technologies such as vlogs, smart phones, simulations, interfaces, and hypertext (Miller, 2015). The creation of multimodal texts now involves the juxtaposition of text, sound, and image. However, there still remains a disconnect between home and school as many teachers do not recognise or valorise students’ facility and familiarity with new technology or multimodalities as they themselves equate literacy with traditional pen and paper forms of literacy. Teachers also hold deficit views of their students’ digital funds of knowledge which underestimates their ability to manipulate new technology (Honan, 2008) despite the fact that many young students are more adapt than their teachers at creating multimodal texts.

4.3. *Digital Identities*

The transformation of literacy has also had a profound effect on the way identity is conceived and constructed vis-à-vis new technology. While the discourse on digital identities is still ontologically sociocultural in nature (Jäkälä & Berki, 2014; Peachey & Withnail, 2013), the proliferation of new technology has created a new form of social identity, the *technological identity* (Amaral & Monteiro, 2002). In contrast to *real world* social interaction and identities, digital identities are mediated by digital literacies and multimodalities that allow individuals to (re)present themselves in ways that would be impossible in the *real* world. This digital or technological identity is represented by five distinct types: *eponymity*, *nonymity*, *anonymity*, *pseudonymity*, and *polynimity* (Jäkälä & Berki, 2014). Although nonymity and anonymity are significant, I will only define eponymity, pseudonymity and polynimity as they are most relevant to Funds of Identity and education. Briefly, eponymity involves an individual constructing an online identity that corresponds to their ‘actual’ offline identity. This might involve the use of the individual’s name and a corresponding photograph. Eponymous identities are often utilised in educational settings, such as virtual learning environments. In contrast is pseudonymity, which involves being identified by a name that is not an individual’s real name. Pseudonymity can offer individuals safety when entering virtual communities and has been identified with positive outcomes which include challenging the digital divide, increasing social inclusion, and enhancing self-presentation for online students (Jäkälä & Berki, 2014). For these reasons, pseudonymity is a powerful form of identity that should be appropriated by the Funds of Identity discourse. Connected to pseudonymity, polynimity involves an individual using a number of different names that may be a mix of eponymous and pseudonymous identities. The construction of different identities, real or not, also has potential utility for Funds of Identity, particularly as students often identify differentially to subjects. Pseudonymity and polynimity are often encapsulated in the form of an avatar. Although there are many forms of online identity, I will limit myself to considering how pseudonymous and polyninimous avatars could be effective in identifying and facilitating the construction of funds of identity.

The role of avatars in the construction of identity has received considerable attention from researchers (Bailenson, 2013; Peachey & Withnail, 2013; Thomas, 2007; Yee & Bailenson, 2007; Yee, 2007). Thomas (2007) views identity as embodied and instantiated in the avatar as a performance that is always enacted through the body in the form of gender, age, race, age, and ethnicity. Although cyberspace is often viewed as disembodied, Thomas’s emphasis on the physicality of the body is a reminder that offline and online identities are inextricably linked and intimately tied to emotions. This provides a link with Funds of Identity and *perezhivanie*: for if individuals’ personalities grow in response to the working through of complex emotional situations, then virtual learning environments and identity representations like pseudonymity might facilitate the move towards catharsis and integration by scaffolding progress through an individual’s *zone of proximal identity development*. In Vygotsky’s original theory, a student undertakes a task in collaboration with an adult or an expert which ordinarily they cannot undertake independently. The experience, it is argued, pushes the student further along their *zone of proximal development*. This experience is subsequently internalised, gradually leading to understanding and the ability to reproduce the task or skill independently (Vygostky, 1999). Social interaction is thus understood as *cooperatively achieved success* (Wood, 2003) which is considered to be a prerequisite for both learning and constructing identity. Reconfigured as funds of identity, pseudonymity, avatars, or a community of anonymous or pseudonymous peers might

provide an emotional form of scaffolding. It is no surprise then to find that many individuals select avatars that allow them to project an idealised version of themselves, thereby sustaining a feeling of confidence when they return to the *real* world (Peachey & Withnail, 2013). The emphasis on appearance and change is also explored by Yee (2007) who makes a distinction between *veridical* change (corresponding to reality) and *non-veridical* change (human desire to change ourselves). While physical change, such as undergoing a haircut or plastic surgery, can be effected in the real world at some expense and potential risk, digital media provides a way to easily enact change in through avatars in collaborative virtual learning environments (2007).

A virtual world is a richly graphical three-dimensional online representation of space in which users can move around using an interactive avatar (Peachey & Withnail, 2013). An example of a collaborative virtual environment is *Second Life*, an immersive virtual environment unrestricted by any imposed external narrative (Peachey & Withnail, 2013). Residents – as users of *Second Life* are called – are able to create anything they need in order to function *inworld*. Increasingly, virtual worlds are replacing the classroom as the main space in which learning takes place (Petraou, 2010; Peachey & Withnail, 2013). However, the role of virtual learning environments in primary and secondary education remains underexplored. Potentially, collaborative virtual learning environments could facilitate the deployment and development of digital literacies that also provide students with a more egalitarian context in which the insecurities, and to a certain extent socioeconomic inequalities, of their real lives can be (temporarily) bracketed. This points to the potential of avatars and virtual learning environments in furthering social justice for disadvantaged students.

Overall, it can be seen that the relationship between identities in *real* and *second* life are not separate but reciprocal. Increasingly, individuals do not distinguish between offline and online identities (Thomas, 2007). While they bring with them aspects of their identities and rules for social interaction from the *real* world which determine the way they behave in virtual environments, they also take back with them identities and social practices that redefine social interaction and an individual's identity in *first life*. This has led to the notion of hybrid identities that are a mixture of offline and online social interaction. While we cannot (yet) physically embody an avatar in real life, the positive changes that occur in terms of identity, increased confidence, and development of digital literacies can transform the way individuals behave in both an immersive virtual environment (Yee & Bailenson, 2007) and their behavior in the first life (Peachey & Withnail, 2013). The effect that digital environments can have on raising students' self-esteem has many applications in the classroom to which I turn next.

5. Funds of knowledge 2.0: towards digital funds of identity

In this section, I explore some of the pedagogical and methodological implications of using digital contexts for researching and utilising students' digital funds of identity. I focus on bilingual learners learning English in an *internationalised* school in Shanghai, China in order to provide a specific instantiation of digital funds of identity. An internationalised school is defined as a national school that offers an international curriculum, typically the International Baccalaureate or Cambridge examinations (Poole, 2016a). These schools occupy an interesting metaphorical and ideological borderlands position between local and international curricula, cultural traditions, and power relations which suggest the existence of third spaces in which students negotiate

hybrid identities. Avatars could offer researchers a methodology for exploring these spaces and teachers and students a strategy for exploring identity within a discourse that is congruent with students' own positionality as digital natives. Incidentally, this approach might also be of interest to teachers and researchers working in actual physical borderland regions, such as the Tucson scholars in New Mexico. I begin by making some general observations about how avatars could be used in secondary schools and then move on to explore how I am currently developing the use of avatars in my own teaching as a strategy for eliciting and constructing *digital funds of identity*.

While the use of avatars and virtual learning environments is not yet common in most secondary schools in the UK, US or China, recent studies have started to explore their application in on-line education (Baker, Wentz, & Woods, 2009; Ott & Ott, 2014; Petrakou, 2010) and the field of special needs such as autism (Konstantinidis, Hitoglou-Antoniadou, Luneski, Bamidis & Nikolaidou, 2009) and deaf education (Adamo-Villani & Anasingaraju, 2017). Petrakou, for example, is very positive about the use of Avatars in higher education, showing that avatars provide enhanced interactivity by placing the student in a spatial dimension. While the use of avatars may not yet be common as a strategy for drawing on and constructing *digital funds of identity* in secondary schools, there is no reason to suppose that with the right conditions such an approach could not be adapted to fit non-tertiary educational contexts. Certainly, the potential is already there as mobile devices such as smartphones, tablets and laptops are a ubiquitous presence in homes and schools the world over. Moreover, as research shows, students possess sophisticated *digital funds of knowledge* (Honan, 2008). There are, however, a number of non-logistical issues that need to be overcome, such as entrenched attitudes towards linear, analogue conceptions of literacy and, in my own teaching context, a culturally situated suspicion of technology as an obstacle to learning.

5.1. Avatars and virtual learning environments

The Home School Exchange Project (Hughes & Pollard, 2006), Zipin (2009), Subero et al. (2016) and Schwartz (2015) provided the inspiration for using avatars as a cultural artefact with identity resonances. My thinking has also been influenced by the work of Esteban-Guitart who has been instrumental in developing the Funds of Identity concept, particularly a recent text in which the author along with his colleagues makes the case for visual strategies as a valid form of qualitative research data (Esteban-Guitart, Pallisera, Fullana Noell, & Gifre Monreal (2017). I attempt to build on this by suggesting that avatars as a visual strategy for uncovering *digital funds of identity* that is rooted in 21st century digital epistemologies. While the physical artefact embodies an existing identity, the creation of an avatar is an open-ended process that can be developed over time. Students are therefore able to modify their avatars' appearance in order to reflect their own emotions and developing understanding of themselves. The use of avatars could also allow for *polynimity* (multiple online identities). Although currently empirically untested, it is my hypothesis that students tend to relate to school subjects and teachers differentially. As a result, they are also likely to develop different identities in relation to specific subjects and teachers. Therefore, teachers should encourage students to develop an avatar for each subject. This will also be of more utility to teachers hoping to tap existing, and emerging, *funds of identity* as it will provide them with subject specific resonances from which to draw. *Funds of identity*, then, are not just mediated by digital literacies and virtual learning environments; they

are also constituted by domain specific knowledge. Moreover, unlike the traditional classroom, which is bounded by time and space, a virtual representation of the classroom in *Second Life* breaks down the boundary between home and school giving students a chance to redefine themselves by creating online personas in the form of avatars. The intersection of avatar and learning environment could also help to bridge the digital divide between school and the home (Honan, 2008) by drawing on digital literacies and immersive online environments with which students may already be familiar. For example, teacher and students could collaborate to create a virtual learning environment that reflects the location or time period of a particular text. Students then develop avatars in response to their burgeoning understanding of (con)text, their existing digital literacies, and existing identities. Some students might choose to create avatars that represent characters from a text while others might choose to develop avatars that reveal something about their attitude towards English literature in general.

5.2 Empathy and identity

Empathy is also an important skill linked to identity development that could be developed through the use of avatars. Empathy is considered to be fundamental in understanding personality dynamics and for effecting changes in personality (identity) and behaviour (Rogers, 1995). It is also related to positive outcomes and is an important factor in constructive learning which is integral for emotional and psychological growth. Avatars offer teachers the opportunity to develop students' empathy which simultaneously develops their understanding of both literary characters and their own (emerging) identities. For example, students could be assigned a character from a text and are given the task of creating an avatar that represents that character. The resulting avatar reveals the students' interpretation of their assigned character while also embodying a range of hybrid identities. Students are then encouraged to embody the identity of their character by taking on their idiolect and behavioral idiosyncrasies. Students then 'perform' their character *inworld*, giving an interesting spin on what would normally be a conventional drama-based activity. The development of empathy created through such close identification with characters from fiction could also assist students in progressing through their own *zones of proximal identity development*. Despite its centrality in identity formation, the role of empathy in the classroom is missing from sociocultural accounts of identity. However, it is commensurate with Blunden's (2014) psychological interpretation of *perezhivanie* as emotion and catharsis as it is correlated with self-exploration and process movement, assisting individuals to move forward (Rogers, 1995). Avatars and digital learning environments offer the chance to extend empathetic relationships that are typically played out in face-to-face interaction, and can be used as conduits through which *funds of identity* are channeled in the construction of new identities.

5.3 The Avatar Project

I conclude by briefly sketching a school-based project that shows how avatars could be used as identity texts for drawing on, and constructing, students' *funds of identity*. The Avatar Project, as it is called, gets students to reflect on their out-of-school and in-school identities by creating digital avatars that they consider to reveal something personal about themselves. Inspiration for the project came from a unit on individual and cultural identity from *IB English B Course Book: For the IB Diploma* (Saa'd Aldin, Tempakka, Awad, & Morley, 2012). I immediately saw potential links to the Funds of

Identity approach, but gradually realised that I would need to adopt an alternative approach to teaching English so as not to reinscribe 2-dimensional literacies. After some reflection, I decided to put into practice what I had been reading about prospective education in Subero et al. (2016) and finally arrived at the Avatar Project as a way for students to co-construct new knowledge by creating identity-avatars. As the previous section shows, the act of creating and working through new identities can lead to the development of empathy which is integral to the learning process. The project is comprised of four incremental stages:

- *The first stage* involves students developing questionnaires to elicit their peers' and teachers' attitudes towards the use of technology in the classroom. This activity is essential in foregrounding the wider institutional issues and to make them conscious of the fact that their *digital funds of knowledge* are largely marginalised within the school.
- *The second stage* involves students undertaking a small research project in which they employ new technology to search for definitions of individual and cultural identity. Students bring their definitions to class and share them as part of a round table discussion. This step in the learning process is essential in helping students to become aware that identity is not something that is simple or given, but is complex and open-ended.
- *The third stage* involves students developing their initial definitions of identity by constructing avatars. Students develop a series of avatars based on their out-of-school lives and their in-school lives. Moreover, students are encouraged to construct hybridised avatars in relation to different subjects (English, economics, mathematics) and contexts (local, national and international). This activity takes the form of a number of workshops in which students are given the opportunity to become experts and take on leadership roles, thereby creating opportunities for collaborative learning.
- *The fourth stage* involves students reflecting on the process of exploring identity by constructing a multi-modal text that makes use of image, text and sound.

The project is designed to facilitate a number of transformative outcomes. Firstly, the students' avatar identity texts will provide me with an invaluable insight into their inner worlds which should also assist me in working through my own deficit thinking. Since discovering and working with the Funds of Knowledge concept, I have begun to reflect more on my assumptions about my students and have come to realise that I have a tendency to view them in terms of trait-like characteristics such as being passive, reticent, and overly reliant on the teacher for guidance. While there is evidence to suggest that many Chinese students do embody and exhibit the above characteristics due to the existence of *cultural scripts for teaching and learning*⁴ (Tan, 2013), there is a growing body of research that suggests that the notion of the 'Chinese Learner' as passive and uncritical is the product of a western discourse that results in stereotypical representations of Chinese students as a 'reduced Other' (Grimshaw, 2007). As an international teacher who is a product of the West, I am also complicit in the reproduction of the Chinese Learner discourse. Therefore, the Avatar Project should provide ethnographically grounded insights into the students' lived experience that

⁴ Cultural scripts for teaching and learning have been defined as a 'relatively small and tacit set of beliefs about the nature of the subject, how students learn, and the role that a teacher should play in the classroom' (Stigler & Hiebert, 1998, p. 2).

interrupt this discourse and create spaces in which my deficit thinking is transformed. Secondly, the project should also provide opportunities for students to become more active in the construction of new knowledge. The process of constructing identity texts in the form of avatars is potentially transformative as the act of drawing on *digital funds of knowledge* valorises and legitimises traditionally marginalised identities and epistemologies. It is also hoped that the project might also have a transformative effect on the school's negative attitude towards the role of technology.

6. Conclusion

This article suggests that the concept of Funds of Identity should be extended by recognising digital identities, embodied in the form of the avatar, as more commensurate with social interaction as digitally mediated than previous conceptualisations of identity which were largely understood as the product of an analogue form of social interaction. This article also suggests how teachers could utilise subject specific avatars as identity artefacts for drawing on *funds of identity* and also constructing new and evolving identities. In so doing, this article argues that the concept of Funds of Identity is not merely an adjunct of the Funds of Knowledge approach, but a significant evolution of it, one that is commensurate with digital identities and virtual learning environments. This is not to negate the role of household *funds of knowledge*, but to underscore the fact that increasingly young people interface with reality via the Internet and other digital devices that problematise the centrality of the household as the main unit of analysis for researching young people's *funds of knowledge*. Teachers need to be cognisant of this in order to effectively implement *prospective* education within educational contexts that are still committed to linear approaches to literacy.

However, while this article has laid the theoretical groundwork for future research, it nevertheless has some limitations that need to be addressed. Firstly, and most pressingly, there needs to be empirical evidence to support the claims made in this article. For example, qualitatively grounded data needs to be gathered in order to show how existing *hybrid funds of identity* (identities, bodies of knowledge and literacies taken from *real* and *second* lives) influence the way students construct online identities in the form of avatars. My own Avatar Project seeks to add empirical evidence to my theoretical approach by offering a method for uncovering and constructing students' *funds of identity*. In so doing, I also hope to build on Esteban-Guitart et al. (2017) by utilising the students' avatars as valid forms of data that transcend the limits of speaking English as a second language. There also needs to be more discussion on how avatars provide space for social justice. For example, virtual learning environments could give researchers greater accessibility to at risk students, particularly in contexts where gaining access to disadvantaged or minority students' out-of-school contexts is culturally, logistically and ethically problematic (Poole, 2016c). Virtual learning environments could also enable the fostering of critical pedagogies that could then be used to address real world inequalities. Another limitation of this article is that it is primarily conceptual in focus. A systematic methodological account is needed to show how data relating to students' *funds of identity* could be collected. It is hoped that teachers and researchers working with the concepts of both Funds of Identity and Funds of Knowledge consider the role that *digital funds of identity* could play in bridging, and problematising, the 'digital divide' between home and school and allowing critical pedagogies to leak into the curriculum.

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