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ORIGINAL

Are Students Ready to (re)-Design their Personal Learning Environment? The Case of the E-Dynamic.Space

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ABSTRACT
The goal of this paper is to present the primary findings of the first of two phases of a research project that looks at how can undergraduates be supported to engage meaningfully with digital literacies in a rich-research context. My hypothesis is that students in the act of (re)-designing and implementing their personal learning environment with available support in a low risk space, will have an authentic learning experience whereby they will deploy digital skills, use knowledge and develop an explorative mind-set hence, improve their digital competences and capability. Twenty undergraduates where invited to a focus group designed with the Visitor and Resident approach to explore and reflect upon their current digital practice. Preliminary findings show scarcity of digital tools in the institutional-resident quadrant. Overall students manifest their reluctance to engage with different web-based tools to mediate learning because they don't want to risk their grades and also because they perceive the Internet as too open and loose, generating anxiety and uncertainty. They ask for support and guidance. Nevertheless they acknowledged the need to move from the visitor end to the resident one. The next phase will explore how these findings can inform the design principles of a scaffold structure for the re-design of students' PLE.

KEYWORDS: PLE, DIGITAL LITERACIES, LIFELONG LEARNING, PERSONAL DESIGN, HIGHER EDUCATION

1 INTRODUCTION

If we dare to imagine what education might look like in fifteen years it is worth examining the foresight study on "The Future of Learning: new ways to learn, new skills for the future job". (JRC-IPTS[i]). The report aims to identify, understand and map how learning strategies and trajectories are expected to change given certain trends identified by different stakeholder groups. These changes are arranged in a descriptive vision of the future of learning from 2020-2030. The overall idea is that personalisation, collaboration and informalisation[ii] will become the central guiding principles for organising learning/teaching hence they will be at the core of learning in the future. The diagram in Figure 1 is taken from the JRC-IPTS study and illustrates the overview of the lifelong learning strategies envisioned by the authors (Redecker et al., 2011) with relevant information of each dimension.

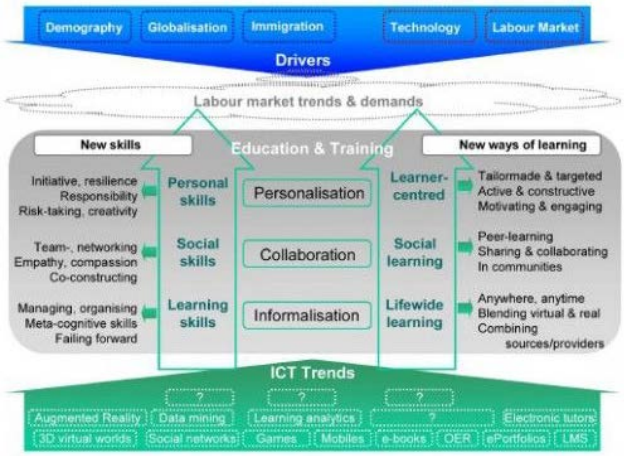

Figure 1. Conceptual map of the future of learning

With this in mind and a clear overview of current students' digital practice, I aim to develop my research.

2 CHALLENGES FOR LEARNERS AND HIGHER EDUCATION INSTITUTIONS

The central learning paradigm depicted in figure 1 is characterised by lifelong learning. In a society where information grows at exponential rates, tools change constantly, new apps are created almost virally, and software is in an ever-improving mode, people need to update their skills and knowledge. This is happening in formal but also in informal settings. Personalisation plays a key role in lifelong learning, particularly in informal contexts. Students will be successful if they can reflect on how they learn, plan their learning journey, and select the tools and resources they prefer. Being able to filter the (over)-flow of information and the plethora of resources available online is key. Also important is to understand what self-determined learning means and how it can contribute to their performance. In the context of young adults the idea of self-determined learning could be more appropriate to use, as young-adults tend to be more autonomous and self-motivated when it comes to the Higher Education level. The Heutagogical approach to learning developed by Blaschke refers to self-determined learning as one that puts the emphasis on developing the learners' capacity and capability which can be achieved, she suggests, harnessing Web 2.0 tools affordances (Blaschke, 2012).

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The availability of open educational resources, and especially MOOCs (massive open online courses) are having a substantial impact on how people learn, acting in some cases as a complement to their formal education (Ullmo & Koshinen, 2015). This type of informal learning is usually orchestrated with web-based tools and mediated through dynamic, collaborative discussion forums. All of these elements are becoming increasingly present in the educational landscape reshaping how young people mediate and design their learning and what learning means for them, hence different skills and knowledge are needed to navigate these new landscapes and obtain the most from the experience.

Today's generation of learners have grown up in a world where computers are hyper-connected; they expect to have access to a vast amount of information online and to be part of a global community of peers. Learning through sharing and remixing seems to have become natural, (Boyd, 2014; Jenkins, 2006), especially in the personal context away from academia (Davies, Coleman, Selwyn, & Crook, 2008).

In a recent study Davies et al. (2008) make extensive reference to the fact that young students who could easily describe how they use technologies in a variety of ways for their lives were not able to do the same when it came to the role technology played in their academic lives. In that context, technologies were more like discrete parts of a messy landscape. This discrete vision of technologies I argue, demands further exploration.

In this line of enquiry Valtonen et al. (2012) observed similar dissonance in their study where students that were using digital technologies for their daily lives required support, both pedagogical and from their teacher, when they were confronted with what they called 'the challenging task' of creating their Personal Learning Environment (PLE) for their learning experience (Valtonen, et al. op cit.). Nevertheless, this problem is not often acknowledged in the research sphere, as Cinque and Brown report. The authors argue that many studies in Technological Enhanced Learning (TEL) research omit the existence of the pedagogical obstacle of students access and digital competencies, Wankel's study being one poignant example (Cinque & Brown, 2015; Wankel, 2010).

Adding to this fact Dimaggio, Hargittai, Celeste and Shafer (2004) argue that there is an issue of inequality, or as they call it, the digital divide stemming from the quality of the experience, i.e. the use of the Internet (Dimaggio et al., 2004). People who have difficulties navigating the Internet tend to connect less often, thus having less opportunity to develop digital skills and abilities and less access to the resources it has to offer. People who have a positive experience feel encouraged to repeat the practice improving their digital skills and abilities. This needs to be explored and addressed in the academic context because the consequences simply reinforce the divide.

The literature makes clear that although young people use digital technologies in a natural way for their everyday life, this does not imply that they use, let alone harness, digital technologies for their academic practice (Sharpe & Beetham, 2009; Davies et al., 2008).

Statements such as 'digital natives' (Prensky, 2001) are underpinned by this erroneous assumption. Lanclos explains the inherent risk when the university's philosophy is grounded in such flawed assumptions around digital natives and educational technology, as they might presuppose there is no need to educate their students digitally (Lanclos, 2016), notwithstanding the evidence of exactly the opposite (Graeser et al. 2008, cited in Conole, 2013).

White and LeCornu (2011) have contested Prensky's approach offering a more realistic process for understanding what motivates people –young and not so young- to engage with digital technologies in formal and informal contexts using a different metaphor, namely one based on space, place and tools (The Visitor & Resident approach). The authors explain that engaging with the web is related to peoples' interest at a particular point in time operating in a specific context. They also suggest that people move on a continuum, from feeling more expert in a specific context where they act as residents, to being less confident or inclined towards it, hence acting like a visitor- in other settings (i.e. students' social circle). Users could then, following this approach, feel like residents in their personal lives but a visitor in the institutional context, vice versa or any other combination. White & LeCornu (2011) found that when people are in a resident mode they tend to make contributions to the Web instead of only consuming the services. Visitors have a more consumerist attitude when they are on the Web. Complementing this idea, Dore, Geaghty and O'Riordan (2015) found in their study a fundamental difference between relating to digital media as 'consumer' of content and being a 'producer', this is, using digital technologies as a toolbox for the construction of meaning thus, knowledge. This idea is reflected in the learning development pyramid depicted in figure 2 by Sharpe and Beetham (2009) who suggest that deeper learning entails more than access and skills, the 'creative appropriation' or 'I am' level that requires higher-level capabilities. I believe education ought to foster those higher-level capabilities for a digital age.

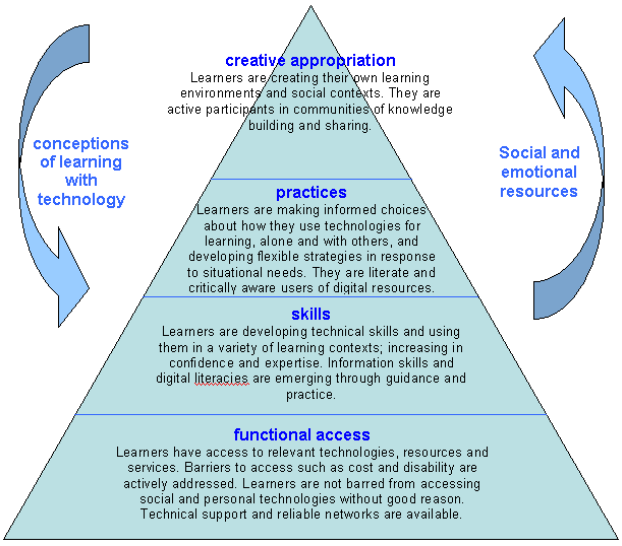

Figure 2. Pyramid model for digital literacies (Sharpe & Beetham, 2009)

The National Media Consortia (NCM) working together with EDUCAUSE in the Education Learning Initiative (ELI), delivers an annual report, The Horizon Report for Higher Education (Johnson, Adams Becker, Estrada, & Freeman, 2015). Although the report is contextualised in the U.S.A. the findings are quite aligned with the research that is being done in Europe (Nápoles et al., 2013). It was agreed in the 2015 report, and it remains a challenge in the 2016 report, that one of the long-term trends in

higher education is advancing digital environments that are flexible and drive innovation, see figure 3.

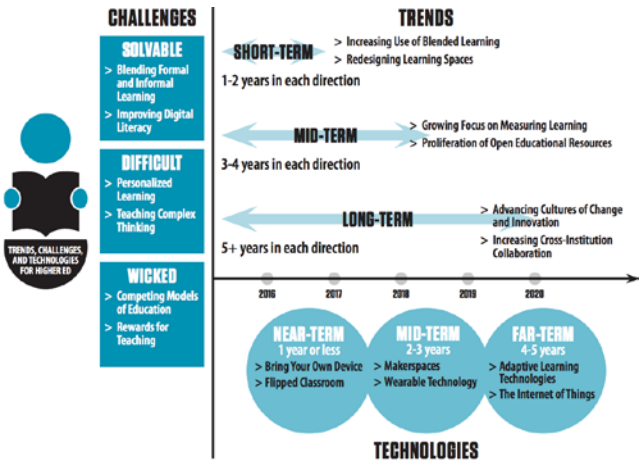

Figure 3. 2016 Horizon Report for Higher Education overview

2.1 Contradictions in higher education' landscape

One of the challenges the NCM classified as "urgent challenge" and identified as impeding the adoption of technology is the low digital fluency among students and teachers within their academic environment. But how will higher education advance digital environments that drive innovation with students and teachers that are not digitally fluent in the academic context? Adding to this challenge students are still uncertain about how and which technologies they should use for study (Beetham & White, 2014) but are willing to incorporate technology into their learning in ways that are relevant to their academic success. Beetham and White (2014) concluded that there are contradictions as students are neither clear about the use of technology, nor are they digitally fluent, but they do want to use technology at the university. Clearly there is a key issue that needs further exploration and research.

New technologies have the potential to enable learners to read interactively and to communicate with a range of media, curate, remix, create, and share knowledge with peers, in short mediate knowledge hence learning in different ways and modes. Despite the variety of ways in which technologies can support learning, they are not used extensively (Conole, White, & Oliver, 2007). The Horizon Report argues that finding effective ways to teach these skills is not a simple task

> (…) Because digital literacy is less about tools and more about thinking, skills and standards based on tools and platforms have proven to be somewhat ephemeral (p. 24).

It is precisely this ephemerality that this project aims to address. It is my believe that technologies can be catalysts for change when they are effectively used to mediate learning (Conole, Laat, Dillon, & Darby, 2008); or in the words of Kaptelinin, it is through thoughtful interactions of the subject with the tool that humans develop (Kaptelinin, 2013) hence learn. But this fact is not reflected in actual changes to practice as Conole et al. (2007) have argued.

Beetham and White (2014) looked at ways in which institutions could respond to student's changing expectations of their digital environment. I cite only two of students' main concerns, which I consider worth thinking about and taking as key points to contemplate for this research:

- Students are eager to be co-creators, not only of content, but also of their digital environment. They think being consulted about is not enough.
- Students need a flexible environment that allows them to experiment, tinker with new tools, learn from each other and create their own blend.

In a conference held at Bath Spa University in December 2015, students expressed their needs in relation to their digital experience and literacies; here are some of their thoughts:

- Students want to be informed about the need for digital literacies and taught accordingly.
- To work at the interface of technology needs basic knowledge and skills. These skills need to be taught at the university.
- Students want to create a space for people to work it out for themselves.
- Students need support to gain experience in their digital environment.

In addition to these ideas and student expectations, Conole et al. (2008) conducted a study where students placed greater value on technologies they have discovered or selected themselves. They found out that personalisation and a sense of control come across as key factors of success in the use of technologies.

2.2 PLE as a possible solution to clear some of the contradictions

When we look at the concerns students have raised in Beetham and White's (2014) study, the conference mentioned above, and the findings in Conole's et al. (2008) research, together with some of the issues raised in the NCM Report, thinking of a PLE designed by students and used as a toolbox to mediate their learning experience would be one of the possible ways to support students in the improvement of their digital literacies. In doing so they would at the same time enhance their digital capability. This opportunity offers them a chance to participate as co-designers in the learning experience adding ownership to the process, a key factor for learning (Torres-Kompen, Buchem, & Attwell, 2011; Buchem, 2012) and foster deeper learning aiming at creative appropriation as the 'I am' in the learning pyramid (Sharpe & Beetham, 2009) cited above and depicted in figure 2.

Following Prendes and Castañeda (2013), PLEs are "the processes, strategies, and technologies we use for learning" (p. 3).

In the last PLE conference proceedings (2014) the definition of PLE is as follow,

> Personal Learning Environment is an approach in Technology-Enhanced Learning based on the principle of learner autonomy, ownership and empowerment. PLEs are integrated individual environments for learning which include specific technologies, methods, tool, contents, communities and services constituting complex learning infrastructures enhancing new educational practices and at the same time emerging from these new practices (Buchem, 2014).

I want to add into the definition the notion of an ecosystem; this is in line with Siemens ideas of the PLE as ecology (Siemens, 2007). I think an ecosystem more accurately captures the notion of the ***organic processes*** of interactions between the environment and the organism (student) adapting to the demands of the system allowing students to be agile thus, able to respond to the changing landscape of educational technology. I believe the power of the PLE approach resides among other features, in this plasticity.

In this context my research aims to find out how and to what extend can undergraduates in educational studies be encouraged and supported to engage critically with digital literacies and open practice in a research-rich context to become digitally research literate and flourish in the 21st century?

My hypothesis is that students in the act of (re)-designing and implementing their own PLE, which I have called E-Dynamic. Space, with available support, will have an authentic learning experience whereby students will be required to deploy digital skills and knowledge hence, improve their digital literacies and capability. Wild, Modritscher and Sigudarson (2008) suggests that a PLE is already a valuable learning outcome in itself. I add to this that in turn, those PLEs that students will design and implement will potentially have an impact on the advancement of the new innovative learning environments, referred to by the 2016 Horizon Report.

Figure 4 shows the dimensions of the PLE I have envisioned for a personal, connected, collaborative and digital learning experience. A more detailed account of these dimensions can be looked at Kuhn (2014).

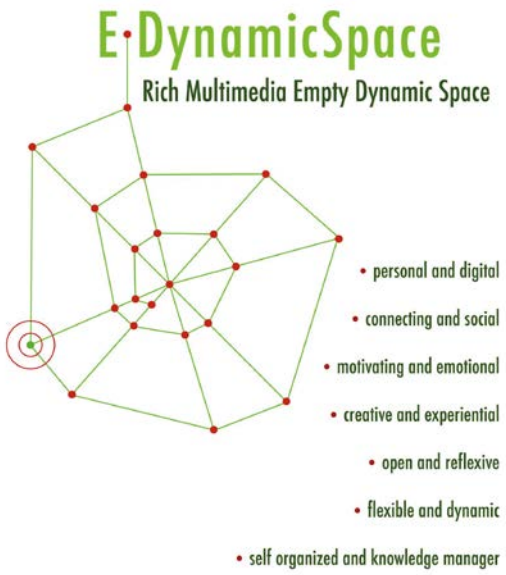

Figure 4. Dimensions of the E-Dynamic.Space (Kuhn, 2014)

With the existing tools, different platforms and a variety of media there are new dimensions and possibilities to explore for education. Activities such as remixing and sharing open content, using podcast or video to convey an idea, construct a shared online space to co-create knowledge, curating and sharing resources with peers are some of them. Each of those activities afford different ways of constructing meaning, enabling students to create intellectual artefacts and knowledge related to their learning. As a result different open practices and new patterns of meaningful interactions between learners, resources, digital tools and ways of using them will emerge. This study is interested in exploring not only these emergent interactions but also the new literacies supporting these interactions and actions -the activity- as Leontiev in his socio-cultural activity theory would call it (Leontiev, 1978). Understanding what these patterns look like, and the meaning derived from them in order to explore the learning processes and the development that lies behind PLEs is also within the focus of this study.

Research on PLEs is still in its infancy (Torres-Kompten, 2015) hence, the focus of my research. I believe the PLE approach has powerful potential to uncover new learning processes strongly related to technology (Castañeda & Adell, 2013). Many of the elements of learning and teaching have still not been touched by the potential of educational technology (Selwyn, 2010b). It might be related to the fact that in many projects there is a tendency to adopt an enthusiastic view that puts the attention only on the promising future of the use of educational technology forgetting to delve deeper into the present reality of the field (Oliver, 2011; Selwyn, 2010a; 2014). There is a gap between the enthusiastic rhetoric and the real scenario encountered in actual educational settings. Selwyn (2010a) suggests that more attention should be paid to how digital technologies are *actually* (emphasis of the author) being used in 'real-world' educational settings. To address this gap and assume a more conservative and critical position as a researcher, the study is divided in two phases. In phase one, which is the purpose of this paper, I aim to explore the present digital practice of students. In the words of Selwyn, I will choose as the starting point, the 'state of the actual', the messy present of students' digital practice within and outside the university. This is a challenging endeavour as Lanclos (2016) puts it,

> It is easier to think and talk about a future where the current problems with which we wrestle are fixed (jet packs!). It is more challenging to confront the present (Blogpost).

This study is framed within Social-Cultural Activity Theory (Kaptelinin & Nardi, 2006; Kaptelinin, 2013; Roth, 2009; Engestrom, 1987; Wertsch, 1991). This approach states the importance of tracing the developmental trajectory of the object, preferably, "starting from an initial underdeveloped form, a germ", (Kaptelinin, 2013, p. 963) which I believe is to be found in student's informal PLEs. I consider students have tacit and informal PLEs embedded in their digital practice without being aware of it. These informal PLEs are what I aim to explore in depth in the first phase of the study. In phase two the goal is to trace and explore the journey of development of students germs, their informal PLEs and within that trajectory understand students' development of tool-mediated interactions and how they shift from a visitor mind-set to a more resident one within a research-rich academic context.

3 METHODOLOGY AND METHODS

In this section I will present the initial findings of the exploration stage, the first of two stages aimed at mapping in more depth students' current digital practice in formal and informal settings.

From a Socio-Cultural Activity Theory perspective, culture and society are considered the generative forces, responsible for the very production of the mind (Ibid). The premise is that in

education the focus needs to be put on the development of students with "volitional [the power of choosing, of determining the tools to use], gaol-directed [the task at hand, i.e. the dissertation], tool-mediated actions framed in a social, cultural and historical context [the university in a post -digital age] serving as the unit of analysis for studying human growth [students' development], understanding [critical thinking] and action." (Ibid). To do this, I decided to look first at how students already mediate their activities in formal and informal contexts.

To address these objectives I will answer the following questions:

(1) What are students' motivations to engage with the Web, with what tools and platforms and for what reason?

(2) What are students' perceived needs, expectations, and vision about the use of digital technology and the digital environment?

The empirical data for this phase was collected at Bath Spa University. Twenty undergraduates in educational studies in year one, two and three were selected under a constructivist grounded theory approach (Charmaz, 2014).

Two students were mature, above 30, and the rest were young students, between 20 and 26. Particular emphasis was made in the recruitment phase to engage students in year two, as they could also potentially be the participants for the second phase of the study.

3.1 Methods

To answer the 20 questions students participated in a focus group (5 students per focus group) and an open and informal whole group discussion was conducted with 15 year-three students.

For the focus group the Visitor and Resident approach (White & LeCornu, 2011) was used. The goal was that students draw on the visitor and resident map (an example can be seen in Fig. 4) the way they engage in the web, what the tools and platforms they choose to mediate their activities are (in their personal life and the university context), and for what reasons. In short they were required to map their current digital practice, their undeveloped PLEs.

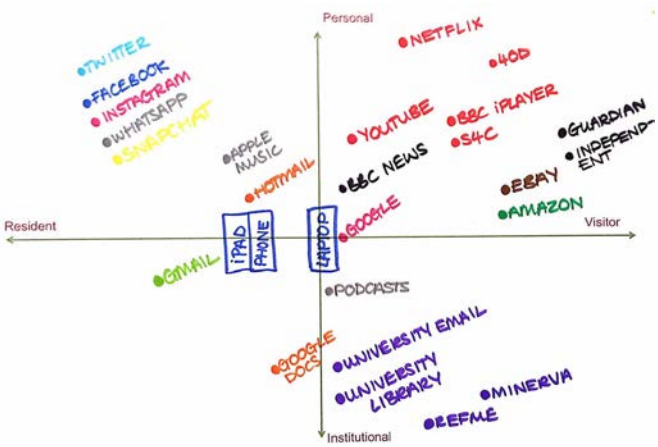

Figure 5. Example of one participant map

After finishing the map, the discussion began, each of the participants explained their map (what activity is mediated by which tools) and questions about some difficulties they encounter when engaging with the tools were discussed in more detail.

This approach was an opportunity, according to the students never given before, to reflect on their digital practice. Many of them concluded that what they do online is not necessarily visible to themselves, let alone for the university. One of the aims of using this method was to provoke students to reflect and become aware of their digital practice making the invisible visible and in doing so reflecting on what the main barriers to their practice may be. It caused students to think about and discuss how they can improve their practice further, what they need from the university to shift their practice and move from the visitor side to a more resident approach in particular within the institutional context.

3.2 Initial findings to inform the next phase

The preliminary findings from this activity can be summarized in three main areas that are required to achieve digital fluency: attitude, knowledge and skills (Ferrari, 2012). These elements are revealed within their digital space. These categories do not appear clear and differentiated rather they overlap significantly.

I will base the definitions of knowledge, attitude, and skills on the European Qualification Framework[iii] and the work of Alan-Mukta (2011).

- Knowledge is the "body of facts, principles, theories and practices that is related to a field of work or study."
- Skills are understood as "the ability to apply knowledge and use know-how to complete tasks and solve problems"
- Attitudes are considered "the motivators of performance, the basis for continued competent performance. They include ethics, values, and priorities. They can also include responsibility and autonomy."

All of them are needed to enable students to benefit from being active in the digital domain (Ferrari, 2012) being able to appropriate and in doing so being digital competent.

In relation to the attitudes students have towards digital tools, more than half of the participants have a positive outlook towards the need for engaging with new digital tools. They are keen to explore but their perception is that they lack the skills to do so and they do not feel capable of doing it without guidance and support.

Another aspect that affects that exploration of digital tools is students' anxiety towards the openness and intangible nature of the Internet. Comments like: "*The web is too big, too messy*", "*The web is too open, and there are too many tools that do the same thing, how can I choose?*" "*It is all like separate entities, without a unifying factor, I don't think it is worthwhile*" reveal this anxiety and stresses the discrete vision of technology that Davies, et al. (2008) mentioned earlier.

Although in a slightly different direction but related to the attitudes towards the digital, a student commented "*What I like about the VLE is that I cannot break it, and that makes me feel safe*"; and another said, "*I don't like Minerva (VLE) but I use it a lot because the university forces us to. I feel safe in Minerva because it's not as big as the web and I cannot break it.*" The feeling of breaking something is off putting, it will only pull people away from the space where this feeling arises.

Only one student among 20 felt secure and confident exploring the web independently for new and "*amazing*" tools,

as he said. He even proposed a digital solution for one of his needs in his own research area.

Notwithstanding these comments, students are fascinated by the possibilities the Internet and its basic tools have to offer: "*I discovered how Google Docs worked and that I could share things with it. It is amazing!*" "*I am a big fan of Google Docs; it's magic!*" They also said they felt comfortable that Google Doc is simple to use and that they can draw on their prior knowledge to make it work. This shows how the confidence of having the know-how to make it work, motivates them to progress. It would appear that having the right level of skills enhances student's attitude towards digital practice.

Another aspect about which students felt anxious or preoccupied was the perception of not being safe in relation to their grades. Some students said they do not take risks exploring new tools for mediating academic tasks because they think if something goes wrong then their grades are going to be affected: "*I am scared, I don't understand where my stuff is, in the cloud? How does it work?*" "*The risk of something going wrong in my grades puts me off to try new tools in my modules*"; "*I stick with what I know*"; "*It is the new stuff that worries me.*" This attitude clearly limits their confidence to try out new tools to mediate some of their academic tasks thus limiting their development of digital literacies at the university.

To explore this fear further I asked the question: what do you do if you are interested in something you find on the Web, do you save it, bookmark it? A student answered: "*Usually what I do is copy and paste it into a Word document and then I reference it from there,"* why*? "It is safe, and it is quicker to reference because I already have it there.*" Instead of being the knowledge of the affordances offered by social bookmarking which motivates her performance, it is the fear of loosing information that drives her action, limiting her to explore and find out new tools but instead it causes her to stay with a known practice for the sake of the "*efficient and practical*" as she said.

Looking at the maps, 16 out of 20 have the institutional and resident quadrant almost empty. Only 4 students out of 20 use a reference tool (RefMe, Mendeley, Cite4Me) and when they were asked why they use, for example, Mendeley, the answer was: "*I use it because my lecturer encouraged me to do so. If I would have not had the support from him I would have dropped it.*" These types of comments stress the fact that support and encouragement from the lecturer is an important aspect in why students choose a particular tool. Another student had a similar answer for a different referencing tool. Recommendation and support seems key for those students. This comes back to the idea that students often follow what the lecturer does; they trust and sometimes are inspired by them (Beetham & White, 2014).

The informal and open discussion held with the group of students who are in their last year of Educational Studies, started with the question: What do you understand by digital literacies? The majority of the students said they didn't know. One student answered: "*Does it mean e-books?*" when I asked if he could extend his idea, he said: "*how do we feel about e-books.*" In general, the responses showed that none of them had a concrete or informed answer about the meaning of digital literacies. Only one student out of the 15 said, "*I am quite used to adapting to technology. That is how I was brought up. I jump easily from Windows 6 to 7 to a Mac and so on* " The rest said they feel they lack the skills and that they feel very confused about digital literacies. Once the conversation moved forward and the term was discussed they started to make sense of their initial but unarticulated thoughts about what digital literacies meant for them.

4 DISCUSSION AND NEXT STEPS

After analysing student's digital practice and looking at their maps and the debates we had in the focus group, and the whole group discussion, interesting insights and some initial ideas can be derived for the next phase. In this section I will expand on these thoughts.

The aim of this study has not been to make further generalisations across the sector, for that the sample is too small and local as it was conducted in one university. Rather the aim has been to have an in-depth approach that allows students' voices to be raised and create a space for reflection and awareness regarding their actual digital practice, hear their worries, struggles and experiences. Students rarely take time to reflect on their digital practice, it is becoming invisible for them, which can be a problem as we have seen in this study, there are different elements that are affecting their academic digital practice that needs to be recognised in the first place to then find ways, and the will to improve. Another limitation of the study is that it has been a self-selected sample, which opens the door for many hypotheses about why people decide to participate in this first stage of the study, for example, is the sample biased?. Nevertheless, bigger studies (Beetham & White, 2014; Davies et al., 2008; Hargittai, 2002; Prendes, Castañeda, & Gutiérrez, 2014; Sefton-Green, Nixon, & Erstad, 2009) point towards similar findings, which implies that the results of this small study are not so different from more generalizable research projects. It causes me to conclude that, despite the size of the sample, there are issues to resolve around academic digital literacies in young and not so young students and the importance of the students' voice concerning tackling problems that are related to their learning experience.

It is clear that all of the participants have some sort of informal PLE, a germ as Kaptelinin (2013) calls it, composed of different tools and platforms through which they mediate various activities that are related to both their social life, as well as their academic life. In their maps the personal-resident quadrant is populated with many different tools and platforms that mediate many activities from travel to a birthday party, managing efficiently health issues or organising the family agenda.

Regarding the institutional-resident quadrant the maps of the majority of students are almost empty, the only tools they use are the institutional tools (the library database, the VLE, Google Scholar and the University Gmail account). Interestingly and potentially related to this fact is how students do not consider themselves digital savvy in academic settings, even less how they recognise themselves as being 'digital natives' as Prensky defined them already fifteen years ago! Instead, some of them consider themselves "the forgotten generation…the ones that don't know." This perception of being forgotten I believe needs to be addressed by the university through different activities that could be embedded in the curricula and aimed at enhancing their skills and knowledge related to the digital domain. Being fluent with technologies happens best when the acquisition is rooted in social practice (Gee, 2000; Street, 1995). This is a fundamental section of the second phase of this study.

There is, on the other hand, an overall feeling of fear in case they spoil their grades or to 'break' something (a tool they said). This attitude hinders student's digital practice preventing them from taking advantage of different features and affordances that digital tools can offer and be able to engage more actively in

digital activities and services. Therefore I believe a low-risk space needs to be provided to students so they can explore with ease the different tools to mediate academic activities. This space, I propose, should serve as an experiment lab, a place where students can try out different tools and see how they facilitate certain kinds of activities without having any incidence in their marks at the end of the year. Therefore it is crucial that for any change to happen in this respect, the institution must have a more overarching strategy where this kind of place is provided openly and with no obstruction for teachers. This can have an effect not only on the knowledge and skills but moreover in the attitudes. Exploring, experimenting with the unknown, playing around is a matter of attitude. It is about not being anxious and feeling lost when no guidance is provided instead, being open to new experiences.

After carrying out the initial coding, it is clear that the patterns emerging from the data are more linked with Bloom's affective domain of learning (Kartwohl, Bloom, & Mesia, 1964) than the EQF I started with. The affective domain of learning is related to attitudinal and emotional processes. It is linked with 'receiving' and it includes students being open to experience, engaging in life, and managing and developing oneself (Ibid). I can certainly recognise these elements in the data I have analysed. 'Receiving' is the first level of three and it involves different skills related to ***exploring*** on three planes: exploring the self, the surroundings, and the emotions (Krathwohl et al., 1964). I believe that Bloom's framework will be useful in the focus coding stage to study how the affective dimension of learning (most of the times ignored due to the difficulty in measuring) can be improved and enhanced throughout the learning experience. I believe this improvement will positively influence students' digital practice in academic settings as are hopefully students going to be more open to explore and embrace the unknown with more ease.

In relation to the lack of knowledge students have about the meaning of digital literacies in an academic context, I am convinced that the term is used mostly in academia by scholars, but not by students. This, in my view, needs to be scrutinised and explored in depth to find ways in which a common understanding with students about digital literacies can be reached. Sefton-Green et al. (2009) have found that these differences in conceptions among teachers and students have certain incidences when trying to use a mandate conception of digital literacy to make changes in educational practice. I wonder how much of this would be avoided if digital literacies were considered a social practice (Street, 1995) embedded in the activity that students will be involved in. This aspect needs further development and an adequate theoretical framework that could shed light on this issue.

Although White & LeCornu (2011) sustain that engaging with the web is related to peoples' interest at a particular point in time in a certain context, the data from the focus group suggests something different, at least in the context of this study.

The majority of them, 97%, argued that although they would like to explore and engage with different tools for academic purposes, they do not do so because they perceive they lack the skills, knowledge and the attitude they need to explore new tools let alone to appropriate them. They argue for support and guidance in the process of improving their digital practice.

One of the next steps will be to design short sessions –digital bite - where students can explore a selected family of tools (Torres-Kompten, 2015) to mediate particular activities for the dissertation module, e.g., social bookmarking tools, note taking and data organising tools, and referencing tools. These sessions need to be deployed initially in a low risk space where students feel comfortable experimenting without the fear of affecting their grades. In these sessions, particular attention will be put on the effective domain, in particular, the ability to *explore* the surroundings (digital spaces) and the emotions that are generated in the process.

A more detailed analysis of the data will be made, the focused coding, in order to conceptualise the design principles of a scaffold structure for students to use when they are (re)-designing their informal PLEs. As previously mentioned, from the first coding process I can observe that the issues are mostly about emotions (fear, anxiety, overwhelmed, etc.). No doubt there is lack of skills and knowledge but the more I scrutinise the data the more I can see that the skills can be learned if the attitude towards the Internet and its difficulties (fear, anxiety, overwhelmed) can be dealt with. I believe that an *explorative mind-set* would be useful in the task of engaging critically with digital literacies in the university. The process of (re)-designing the existing PLEs will occur in the Zone of Proximal Development aiming at independence and change of attitude in students.

There is a pedagogical dimension, which has not yet been explored in phase one, although the scene is set with the empirical data collected about students initial and underdeveloped PLEs. Relevant to the success of the project is the need to explore how students perceive the way they learn and how this could be decoded in different features of students' PLEs.

Inspired by the CAPPLE project[iv] whose aim is to better understand not only the processes of creation, management and enrichment of learner's PLEs, but also to better comprehend the strategies to improve these processes in formal education, I have made an initial contact with one of the leaders of the project – Linda Castañeda, to explore the possibility of using the instrument they have developed to collect relevant data to investigate this pedagogical but also functional dimension. The intention is not only explore it but also connect it with the rest of the processes to be deployed in the second stage of the study which is aimed at re-designing, with a scaffold structure in place, the informal PLEs explored in the first phase of the project.

This will allow me to make connections about students' competencies, the skills, knowledge and attitudes they use to learn and the different tools they selected to mediate and improve their learning experience. In doing so interesting connections can be made between the learning processes that underpin students' PLEs and the tools that they choose to mediate these processes.

To finalise this paper in a circular manner I would like to answer the question I posed in the title, are students ready to (re)-design their PLE? My answer will be, not yet.

There are still skills and knowledge that need to be learned, but moreover, there is an aspect of attitude which is part of the affective domain of learning mentioned before that I think must be tackled. If we can ignite an *explorative mind-set* in our students, providing them with the initial support and guidance so they feel safe to embrace the vastness and openness of the Web in a playful manner, the results of that exploration is likely to be fruitful. This I argue is at the same time a way to tackle the digital divide addressed by Dimaggio et al. (2004)

Students with an *explorative mind-set* will acquire new literacies and in doing so improve their digital practice. Hopefully, being more independent for future explorations when new activities need to be digitally mediated. Such a mind-set is very much needed as the tools and platforms available on the Web are in an ever-improving mode. Some of the tools change, others suddenly cease to exist, and platforms follow the same pattern. This forces us to continually update our skills and find new ways to mediate our activities hence an *explorative mind-set* is particularly useful to embrace this digital Brave New World.

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NOTES

[i] Joint Research Centre, Institute for Prospective Technological Science. Available at: http://ftp.jrc.es/EURdoc/JRC66836.pdf

[ii] Moving from formal to informal learning.

[iii] It is a common European reference framework, which makes qualification more readable and understandable across Europe. Available at: https://ec.europa.eu/ploteus/en/content/descriptors-page

[iv] It is project that was originated in Spain and stands for Competencias para el Aprendizaje Permanente basado en PLE (Competencies for lifelong learning based on PLEs). The project attempts to describe and analyse the prospects for the personal learning environments (PLEs) of future Spanish professionals. For more information go to http://www.um.es/ple/?lang=en

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