



Technology in intergenerational exchanges: the young and the elderly together empowering their Personal Learning Environments

Tecnologia negli scambi intergenerazionali: giovani e anziani migliorano assieme i loro Ambienti di Apprendimento Individuali

Gemma Tur

Balearic Islands University
Ibiza, Balearic Islands (Spain) - gemma.tur@uib.es

ABSTRACT

Technology plays an important role in modern society especially for lifelong learning and social participation. Research into the use of technology by mature learners has evidenced less usage than that of youngsters, barriers based on accessibility and a positive attitude. Technology is included as a subject in the course of the Open University for Seniors of the Balearic Islands University in Ibiza headquarters. The approach to technology is based on the PLE concept for lifelong learning. An intergenerational exchange based on technology as the main topic is also included. Adults and young children meet to share their experience with technology and education. Data collected in this case study demonstrate the use of technology by our mature learners and their mainly positive perceptions of the youngsters' usage.

La tecnologia gioca un ruolo importante nella società moderna, specialmente per ciò che concerne la formazione continua e la partecipazione sociale. La ricerca riguardante l'uso della tecnologia da parte di discenti più anziani ha evidenziato: un minore utilizzo (se comparati ai giovani), l'esistenza di barriere legate alla mancanza di accessibilità, unite a un atteggiamento positivo da parte dell'utenza. La tecnologia è inclusa come materia di studio nei corsi della Open University for Seniors, afferente alla Balearic Islands University con sede a Ibiza. L'approccio alla tecnologia si basa sul concetto di Ambiente di Apprendimento Individuale (PLE) pensato per la formazione continua. In tale approccio è incluso uno scambio intergenerazionale basato sulla tecnologia come tema fondante. Gli adulti e i bambini si incontrano per condividere le loro esperienze nell'ambito della tecnologia e della formazione. I dati raccolti in questo case study espongono l'uso della tecnologia da parte dei discenti maturi e le loro percezioni positive dell'uso che ne fanno i più piccoli.

KEYWORDS

Intergenerational exchange, Personal Learning Environment (PLE), mature learner, lifelong learning.

Scambio intergenerazionale, Ambiente di Apprendimento Individuale (PLE), Discente mature, Formazione continua.

Introduction

The Decision No 940/2011/EU of the European Parliament and of the Council of 14 September 2011 states that the progressive increase in the older population, now healthier and better educated than ever, demands a special awareness in order to develop opportunities “for employment and active participation in social and family life, including through volunteering, lifelong learning, cultural expression and sports.” For Futureage (2011) “active ageing requires a social-ecological view of ageing”.

Intergenerational exchanges and computer literacy programmes for the elderly directly address lifelong learning and other aims promoted by the The European Year for Active Ageing and Solidarity between Generations (2012) promoted by the European Parliament and Council of Europe. These programmes can also meet some of the needs of a multi-disciplinary approach to active ageing.

One evidence of the risk of the generational digital divide and social exclusion is the research of Auvinen (2012) based on a case-study in Finland about generational uses of social media in politics. The data collected shows that participation in politics through social media is mainly carried out by the youngsters.

Therefore, technology is fundamental for citizenship and active social participation for both young and older people, so an intergenerational exchange with the integration of technology meets, from our point of view, social and educational policies fostered by European policies and developed by national and local authorities. It also directly tackles the danger of the social exclusion of older people who cannot use technology for active citizenship and for lifelong learning.

1. Mature learners and their use of technology

The growing population of mature citizens and the growing presence of technology in society give rise to the necessity of introducing the elderly to ICT (Information and Communication Technologies) so that adults can have a successful experience of technology usage that will empower their lifelong learning and active participation in their communities. As Hyvönen, Romero and Barberà state (2012) based on Chen and Wellman’s work (2003), there is an increasing concern of an emerging digital divide as citizens are asked to use technology in their daily relationship with administration regardless of their previous knowledge or interest in technology.

Li and Perkins (2007) state that the elderly, in the same way as other generations, see technology as a positive element of modern society that can help improve the quality of life. This research does not find age to be a factor that impacts on the willingness to learn about technology. The main factor that has the most influence on this willingness is the level of education of the mature learners. However, the authors also observe that most mature learners, despite their positive attitude, will not take any initiative to develop their digital competence. Therefore, based on this conclusion, we posit that it is necessary to foster initiatives where mature learners have the opportunity to use technology and develop their digital skills.

However, Dickinson and Gregor (2006) state that the evidence of the positive impact of computer use on the well-being of adults is not so clear. The authors list many research projects claiming the existence of a positive relationship between computer use and the improvement of adults’ well-being. Nonetheless,

they observed that this improvement of adult well-being is also influenced by factors such as the time spent in social interaction during their training. Although some qualitative research states that technology can lead to self-perceived improvements in well-being, these authors state that the relationship is not so clear, and that learning initiatives should not forget to anticipate possible drawbacks and reduce them.

Moreover, there are other lines of research that focus on the use of social networks by the elderly. Prieto and Leahy (2012) highlight accessibility for a successful usage by mature learners. Barriers to accessibility include poor design, complex software and lack of experience with technology. In their research, the authors identified some patterns of usage: the greater use of Facebook; the time they spend on social networks which is normally less than half an hour; the people they communicate with, mainly family and friends; the content creation which is based on photo and video sharing; and finally, their privacy concerns which are rather significant. As for their perceptions: all mature learners reported benefits such as communication and increase of knowledge. The negative implications were founded on ideas such as a reduction in physical activity and concentration when doing other activities. Older mature learners did not report any negative impact of the social networks. Finally, Prieto and Leahy (2012) found that the time adults have been using the Internet is a key factor for the usage of social networks.

Tsai, Chang, Wong and Wu (2011) also state that social networks have the potential to help seniors to maintain social interaction with family and peers. However, barriers such as inexperience in computer usage were also observed. Therefore, the authors recommend social media platforms that are easy to learn and use with a friendly user interface.

Finally, there is another interesting and powerful line of research based on mature learners' usage of mobile phones. Conci, Pianesi and Zancanaro (2009) following Venkatesh, Morris, Davis and Davis (2003) state that the elderly accept technology if it meets their needs as anyone else would do. However, the authors suggest that the elderly may have a different approach to technology from the young. In their research they demonstrate that the motivational drivers of mobile phones are based on utilitarian conditions and perceived usefulness.

2. Developing Personal Learning Environment for Lifelong learning

Personal Learning Environment or PLE as it is known worldwide, has become a key concept in understanding how technology can empower learning processes for a lifetime.

In this experience aimed to empower our mature learners' PLE, the concept we work on is based on the one defined by Adell and Castañeda (2010). These authors conceive the PLE as the group of tools, information sources and activities that we use in order to learn. Therefore, the virtual part of the PLE is composed three kinds of tools: to access information, to create and edit information and to share with others. Attwell (2007), Torres, Edirisingha and Mobbs (2008) and Adell and Castañeda (2010) consider PLE as designed for lifelong learning. As Attwell concludes, PLEs are "a new approach to the use of new technologies for learning" (Attwell 2007, 6). More recently, Attwell (2012) has stated that PLEs can be used both for the recognition of informal learning and for "lifelong and continuing learning to develop and improve employability, regardless of institutional arrangements" (2012). In short, the PLE concept does not refer to a technological system but to a global learning approach (Adell and Castañeda 2010).

Torres, Edirisingha and Mobbs (2008) explain that the emergence of the concept was based on the need for a shift in the way elearning was being approached by the majority of educational institutions. So, whereas the creation of a digital landscape was based on teacher-centred institutional software, known as VLE (Virtual Learning Environment) or LMS (Virtual Learning Environments), the requirements for lifelong learning asked for student-centred approaches. Nowadays, with the evolution of the debate, both are seen as the opposite sides of a complex scenario (Conole 2012), where the former is referred to an institutional resource for the management of teaching and learning in formal education and the latter refers to a personal way of managing learning, specifically in the virtual world and for autonomous and self-regulated learning (Dabbagh and Kitsantas, 2012).

Following Torres, Edirisingha and Mobbs (2008) the second shift that influenced the emergence of the concept was the development of Web 2.0, which has given the user the opportunity to become a creator or producer of content as well as a consumer of information, becoming what is called a “prosumer”, a term that was coined in the field of Economics and that has become widespread since the development of Web 2.0 (Tur 2011).

According to Attwell (2007) PLEs give the students the opportunity to organize their own learning, beyond learning in a classroom, hence joining both formal and informal learning for lifelong learning. However, as Camacho and Guilana (2011) point out, based on Vande Stevens (2009), it is necessary for formal education and teachers to help students to become successful learners providing the opportunities to build their own PLE.

3. The intergenerational exchange: technology for the dialogue between generations

Bostrum, Hatton-Yeo, Ohsako and Sawano (2000, 11) quote the definition of intergenerational exchanges as “vehicles for the purposeful and ongoing exchange of resources and learning among older and younger generations”. Following Macías, Alzina and Tur (2010) there are numerous other definitions but all of them have three main characteristics that define intergenerational exchanges as Newman and Sánchez (2007) evidenced: in all intergenerational exchanges participants are from different generations, they all have to achieve beneficial aims and the participants have a relationship based on exchange.

Baschiera (2012) argues that intergenerational exchanges give mature learners’ a positive role instead of focusing on the negative aspects associated with the age. In addition, the author states that the learning that arises from these kinds of meetings “can deliver experiences and memories, new skills and attitudes, creating most of all new relational resources able to develop a higher civic sense and a common sense of belonging” (Baschiera 2012).

3.1. The groups of participants

The intergenerational exchanges were carried out between a group of senior students of the Open University for Seniors (UOM) at the University of the Balearic Islands (UIB <<http://uom.uib.es/>>), Ibiza headquarters, and a group of eleven-year-old students at Sa Graduada Primary School in Ibiza too. Among the senior students, there were a man and five women, all aged from 60 to 72. As for children, there were fourteen girls and twelve boys, aged 10 and 11.

The Open University for Seniors of the University of the Balearic Islands ex-

ists since 1998 when it was initiated in Mallorca, the island where the University has its main campus. Only one year later, the Open University for Seniors started at Ibiza headquarters, but the intergenerational exchange had still to wait a long time. So, the first exchange was carried out during the school year 2009-10. It had little participation but enough to warrant its repetition the following year, 2010-11, which is the one we are presenting now.

The UOM programme is fifty hours long divided into two-hour sessions every Thursday afternoon from November to June. There are different topics divided into units that normally last for two or three sessions. Every school year, there are topics related to local and universal history and literature, and since 2009-10 there is a module for the intergenerational exchange that consists of four sessions, a total of eight hours: three before the exchange itself by way of preparation, two for the meeting with the youngsters, and three after the meetings in order to assess and comment them.

Sa Graduada is the oldest state school in Ibiza and it is also, the first primary school on Ibiza which started separating children into groups by ages. It is probably due to its long history that it is quite well known among older people in Ibiza. It is in the city centre and it is quite large with two classes for each level from Infant Education to the final year of Primary Education. In the last two school years, the school has received the ICT resources that local educational administration has provided due to national policies for the modernisation of the educational system.

3.2. The senior participants and their use of technology

Only a small group of senior students, between four and six students, out of a group of thirty and twenty-five Primary students participated in the intergenerational exchanges. We do not have any explicit reason as to why the majority of senior students do not want to take part in the exchanges, although we have our own opinion about it. In general terms, Ibiza's society is not specially defined by its solid structure or community participation. It is normally very difficult to initiate new activities that involve citizen participation in Ibiza so, to start the project, it was enough for us to have four volunteers, with the hope that the progressive familiarity with the project and its success would help to promote the intergenerational exchange. Therefore, we are very hopeful that the success of this experience that we are describing here, mainly because of the integration of technology, has made a difference and that more senior students will participate in the next intergenerational exchange.

Primary students had just begun using technology for learning since they had received the ICT classroom equipment from local educational authorities over the last two school years. Among the senior students, only one uses email and reads digital newspapers. The other three students do not use technology either for leisure or learning. Although there is a computer at home with an Internet connexion, they do not use it at all. They all have mobile phones without an Internet connexion.

However, the Personal Learning Environment of the whole mature learners' group is much more complex than that of the selected group participating in the intergenerational exchange. The tools of their group PLE in the real world have typical sources of information, people and activity resources such as: books, mass media, teachers, family and friends. The following picture illustrates the map mind that represents this part of their PLE:

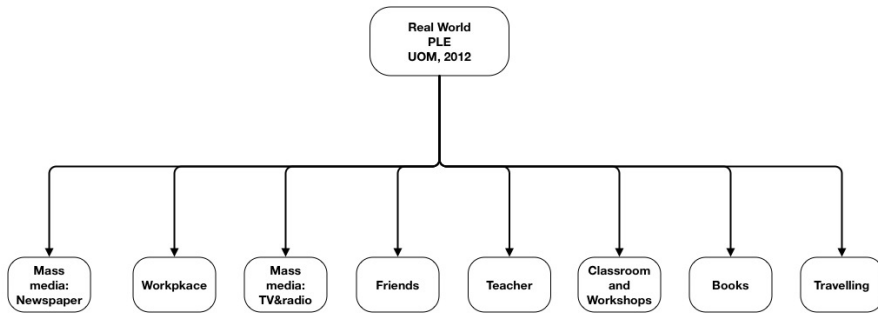


Fig. 1. Mature learners' PLE in the real world

Nonetheless, mature learners' PLE of the virtual world is not so powerful. They have limited access to online information based on search engines like Google, online encyclopaedias like Wikipedia, forums, blogs and ecommerce like eBay; limited opportunities for content creation based on text editors like Word, photograph software like Photoshop, data base software like Excel; and lastly, they also have limited opportunities for sharing in a not so limited variety of social networks that include Facebook and Twitter; mobile apps for photography and communication; and those they have learnt through the intergenerational exchanges of the last two school years, which are Ivoox (audio podcasting) and Youtube (video podcasting). The following picture illustrates the mind map created in class after the sessions devoted to technology in the last two UOM programmes.

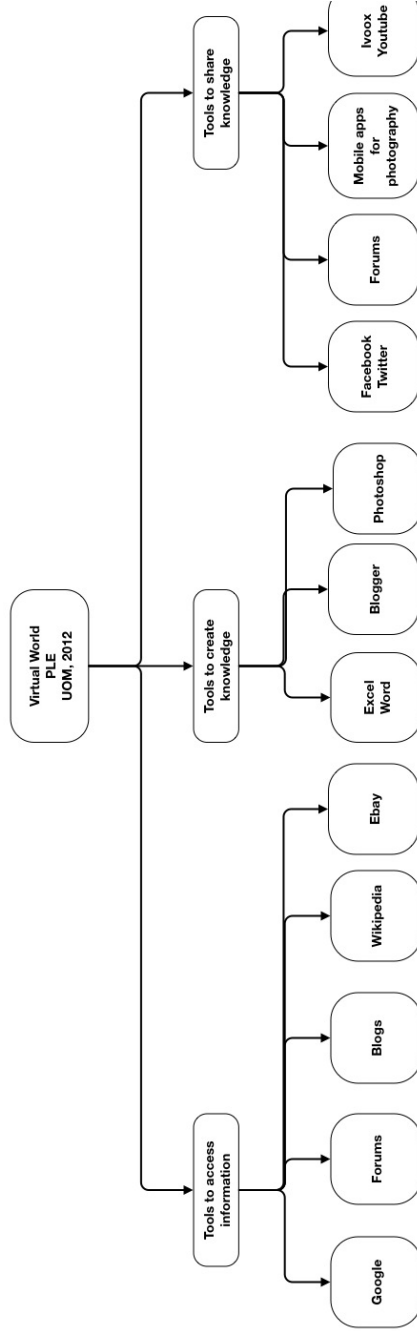


Fig. 2. Mature learners' PLE in the virtual world

3.3. The meetings

The intergenerational exchanges consisted of a meeting between primary and senior students at the former's classroom both school years¹. In both occasions, the methodology was based on interviews where youngsters were the interviewers and the elderly the interviewees. The topic was about childhood and education contrasting old and modern childhood. So the children asked the adults about their childhood, food, traditional games, mass media, timetables during school days and leisure and habits and routines for social relationships such as where they normally went, what they did or how they arranged to go out with friends. After the interviews, the primary students also explained to the senior students how they learn, the way they use technology for learning and for their free time as well.

For both exchanges, there was a meeting between the Primary teacher and the lecturer at University, who is also in charge of the coordination of the whole UOM program, in order to plan the intergenerational exchange, the topics and the students' role. So, the teachers' role is based on guidance and leadership as they plan the topics and the activity but they do not take part as actors in the exchanges themselves, where teachers become simply facilitators but not active participants. The first school year, it was decided that technology for learning had to be a topic as Primary students had started using their laptops and digital boards in their lessons, and the second school year the topic was repeated as senior students' had got engaged about technology since the first exchange.

In both school year programmes, senior students had a lecture on education before meeting the children. In both exchanges, primary students prepared the interviews before the meeting. Primary students were divided into five groups and each group interviewed a senior student about a topic. Every interview of the first exchange was recorded, uploaded on Ivoox, and all the interviews of the second exchange were also recorded with cameras by the children and uploaded on Youtube. All the material of both exchanges is published on the lecturer's blog. Photos of the events show the interest of all participants and the warm classroom atmosphere in which the activity took place. In the first meeting, primary students showed senior students how they learn with their laptops and digital boards and senior were also invited to interact with technology as it can be seen in the photos. In the second meeting, the focus was on the meaning of emoticons in their digital written text.

The following photographs illustrate the meetings. The first two are from the first intergenerational exchange, when children show the elderly their ICT resources and uses. The next two are from the second exchange when children interview the elderly and the interviews are also filmed by the children themselves.

1 Audios, photos and other material of the first intergenerational exchange can be found on the following URL: <<http://reflexionsperamestres.blogspot.com/2011/06/intercanvi-intergeneracional.html>>.

And the material of the second intergenerational exchange can be found on the following URL: <<http://reflexionsperamestres.blogspot.com.es/2012/06/intercanvi-intergeneracional-iii.html>>.



3.4. Participants' opinion

Unfortunately we did not interview either the children or the teacher, although during the activity we took notes of their comments as they showed commitment to the success of the experience and were enthusiastic about the meeting. Students were mainly surprised by seniors' routines and habits in their childhood and the children could not imagine how they would play or meet with friends without technology. As for the teacher, she was surprised by the empathy children showed towards seniors and how they tried to explain the way they chat to each other from their home computers. After the first meeting, the teacher was especially surprised by students' usage of technology for communication, as they had still not used technology for learning. After the second meeting, having worked with technology in class for the previous school year, she was pleased to observe children's autonomy with the use of technology.

We did ask the elderly about their feeling towards the experience during the lesson after the exchanges themselves, and they highlighted some interesting points that we summarize as follows in two groups, positive and negative aspects of childhood and education nowadays.

Positive aspects:

Primary students, in spite of their young age, can use technology very competently and can use it more comfortably than the older generation. Seniors commented on examples of the use of technology that their grandchildren are able to do and they are not.

There is a high quantity and quality of resources in modern education systems. One student, whose daughter is a teacher, said literally: "I will tell off my

daughter if she ever complains again about the necessities and problems of the educational system nowadays”.

There are more learning possibilities nowadays that in their youth. Senior students value the opportunities for learning in and out school and the diversity of the learning path they can carry out depending on their abilities and preferences. They also commented that with the Internet and computers students do many more things that they could ever do as children.

The relationship between children and teachers. They said it is warm and friendly, which gives confidence to children for learning. A senior student explained how afraid of their teacher she and her classmates had been, which, in her opinion, undoubtedly, made learning more difficult for children.

Coeducation and sex equality. Women value coeducation between sex and commented on the social incompetence of young girls in Spain during the 40s and 50s, the decades that comprise their childhood and youth. They especially value the equality of opportunities for boys and girls, and they strongly criticised the special curricula girls followed during the greater part of the Spanish military dictatorship.

Necessity of mobile phones. They admit that they now need a mobile phone in modern society whereas when they were young and mobiles did not exist, they never felt a need for such a device. The wide range of possibilities of mobile phones to take photos and communicate with family and friends.

Negative aspects:

Primary children’s timetable is not suitable for their age. Senior students criticised the freedom some children have to go home in the evening. They consider they had a too strict education but nowadays timetables are equally negative.

Children do not know about the ancient traditions of their local community. Seniors were surprised at the ignorance of children about some everyday topics like traditional food. They considered this is mainly due to globalization and the loss of people’s identity towards a single global way of life.

Young children do not use standardized written language in their texts either private like email or public like social networks. One senior student, the only one who has email and uses social networks, said: “The written accent doesn’t exist for them. It is not that they use it wrong, it’s simply that they don’t use at all”. Based on our mature learners’ evaluation of technology, the lesson included the reflection on language too. Cassany (2011) has highlighted the meta linguistic reflection that students make when using abbreviated spelling in text messages. So, making senior students aware of this fact would introduce a new point of view that could help in bringing both generational uses of language closer together.

Young children spend too much time on the computer, playing videogames and connected to social networks such as Facebook. Again, in relation to their timetables they consider children stay up until late at night playing on the computer and that they have substituted playing traditional games in the street with video games on the Internet.

4. Discussion

It can be observed that technology is included in the positive aspects, although mature learners also said there are rather negative consequence of technology: the use of language by young people and the time they spend alone in front of

the computer. They value the empowerment of children's learning and above all, they value the abilities children develop with the use of their devices. After having been introduced to the PLE concept, they discuss the possibilities of a technology-enhanced learning environment. But despite this positive evaluation, they are also worried about the incorrect use of spelling in children's writing. They do not understand why children use the same short spelling of mobile text messages in other written digital text like email or messages in social networks. They also value the possibilities of mobile phones to generate content and have quick and cheap interaction with family and friends. Finally, they are specially worried about the time children devote to technology. They compare the time they spent playing traditional games in the street and time children spend now, and they do not agree with the habits and routines of childhood nowadays.

The following graphic summarizes our mature learners' vision of technology in children's learning and makes evident the positive assessment they agreed on in general:

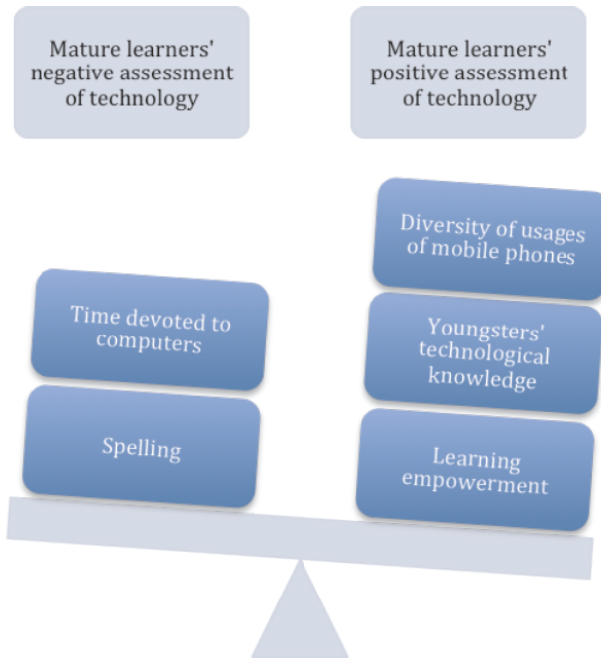


Fig. 3. Mature learners' negative and positive assessment of technology

It is remarkable that none of our senior students introduced the topic of the dangers of the Internet. Probably the enthusiasm they felt in valuing the power of technology for learning made them forget to talk about other alarming topics that are normally introduced by the sensationalist media.

There is an important line of research based on children and teenagers' use of social media in their free time, and an important movement in education towards the integration of ICT at schools for learning purposes. However, further research on young learners' perceptions is needed to see how students perceived technology in their everyday life.

Conclusions

The whole project was a success even after taking into account the low number of senior participants. The important thing is that the ones that truly participated fully lived the experiences, and that the number of senior students increased the second time. Primary students were glad to receive, interview and talk to senior students and the teacher has already confirmed their participation in the following edition. And senior students enjoyed, themselves more than they had expected, specially the first time. Therefore, there is no doubt that we will repeat the project if possible as an independent part of the programme, so that more time can be dedicated to it. Our main hopes are that more senior students will join us in this exciting experience of such distant and at the same time, close generations meeting together; and that technology empowers their PLE as lifelong learners and active citizens.

This concrete intergenerational exchange fulfils the seven characteristics adopted by the Dormund definition (1999) cited by Hatton-Yeo and Ohsako (2001) such as: mutual benefits for all participants, new perspectives for both groups, the involvement of two generations with no familial relationships, the promotion of increasing understanding of both generations, the involvement of relevant policies, in this case, educational policies, programme planning and finally, the development of an intergenerational relationship. It also especially addresses some of the future needs of research claimed by the authors above: that is computer literacy and functional literacy, although it does not go deeper into it.

The main failure of this exchange is, from our point of view, the role of technology. Technology was permanently present in the meeting: as a topic of interviews, part of primary students' talk to seniors. It was shown by youngsters and experimented by seniors but none of them created content with technology. In the first exchange, the audio was prepared by the lecturer and in the second, although the video was recorded by children, the process of editing and publishing was also once again carried out by the lecturer. So, technology was part of the message but not the message itself. None of them created any artefact with technology during the meeting. They did not use technology to document their learning, their impressions or their thoughts during the exchange. Therefore, this is our next main aim. These two school years can be considered a testing experience and, due to the success documented, our next steps will have to extend the time devoted to the project and also include activities for content generation and mobile learning as well.

In their theoretical model of sociocultural ecology, Pachler, Bachmair and Cook (2010) propose "a view of school as cultural practices of teaching and learning into which the cultural practices of the use of mobile devices and their applications in everyday life need to be assimilated" (Pachler, Bachmair and Cook 2010,3). Applying and transferring this model from the use of mobile technology to the use of technology in general, we strongly believe that the two generations, Generation Y and mature learners, can exchange two highly important points of view in relation to the use of technology. On the one hand, children can show seniors the socio-cultural uses that they make of their technology, and, on the other hand, mature learners can show children the way to transform this socio-cultural use for leisure into informal learning. Meeting in formal learning spaces can give youngsters the opportunity to get individualised and tutorial help in order to start using technology for uses other than communicating with others. Seniors would lend their learning maturity to experiment learning in informal contexts, and children would

give seniors new tools for their old ways of learning. So, based on this concrete experience, future experiences will be designed to give technology an active role in joining together both generations for learning.

The qualitative data obtained in this short research project on the experience of taking advantage of intergenerational exchanges for mature learners' to initiate their use of technology for learning confirms some conclusions of previous research. In general, we can observe a positive attitude towards technology and the willingness to learn about it and use it for communication and learning. However, further research is needed to confirm the mature learners' usage of technology for lifelong learning, specifically of social networks, content generation and sharing and mobile devices for lifelong learning. Also, further research should offer enough data to enable us to identify improvements brought by technology for the seniors as well as any possible barriers. Finally, future research should give some guidance about the improvement of children and seniors' use of technology through the exchanges of their abilities.

This concrete intergenerational exchange has opened a new line of work at UOM in Ibiza headquarters. From now on, technology will be a part of the curriculum in itself and a key factor in future meetings between young and old students. Our main aim is to develop in our senior students the abilities to use technology for lifelong learning and active citizenship.

There is no doubt that technology has become a key element for powerful Personal Learning Environments that foster lifelong and lifewide learning. Mature learners can take advantage of technology for their learning and social participation as members of larger communities, and youngsters with greater digital abilities can help them to achieve it with success and to avoid the possible pitfalls that could be encountered. The learning landscape has definitely changed forever and both formal and non formal education programmes can no longer ignore the role of technology in this emerging change towards the real construction of knowledge by the learner.

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