

MOBILE LEARNING WITH CELL PHONES AND MOBILE FLICKR: ONE EXPERIENCE IN A SECONDARY SCHOOL

Adelina Moura
University of Minho
Gualtar, Braga, Portugal
adelina8@gmail.com

Ana Amélia Carvalho
University of Minho
Gualtar, Braga, Portugal
aac@iep.uminho.pt

ABSTRACT

Mobile learning or m-learning is a new paradigm in the educational scene with opportunities and challenges in the expansion of distance learning. The experiment described in this paper presents the students' perception about the tasks carried out with cell phones and Mobile Flickr, in curricular developmental activities of Portuguese literature. The main objective of this study is to improve learning through the use of mobile devices and to encourage collaborative work. We want to achieve an innovative methodology of collaboration and communication with mobile technology. Suggestions for further development of this work will be discussed in the conclusion.

KEYWORDS

Mobile learning, cell phones, mobile flickr, collaborative work

1. INTRODUCTION

Mobile learning or m-learning is a relatively new tool in education which enables teachers and students to create new environments for present and distance learning. Mobile learning it's defined as "elearning through mobile computational devices: Palms, Windows CE machines, even your digital cell phone" (Quinn, 2000), and it is gaining importance in different sectors of society. This new paradigm opens up a range of possibilities for teaching and learning processes. The possibilities for the use of m-learning are many and varied and need to be investigated.

It was in this context that we planned the development of a field experiment to support curricular activities, through the use of students' mobile phones and Mobile Flickr. With this experiment we wanted to create a learning environment based on the innovative use of mobile devices, such as cell phones and mobile email service, and help students to develop an awareness of learning focused on collaborative mobile learning and curricular activities.

2. MOBILE LEARNING: CONCEPTUALIZATION

In 2000, Sharples started to discuss the potential of mobile technologies in programs for lifelong learning and the introduction of new opportunities in adult education. Several years later, some of these ideas are still of interest.

During the following years other studies have been conducted and reported by Seppala & Alamaki (2003); Attewell, (2005), Rushby (2005), Savill-Smith (2005); Wagner (2005); Moura & Carvalho (2007a); (2007b) which prove the value of this new paradigm in the field of training and education.

Also relevant are the case studies about mobile technologies, developed between 2000 and 2004 and submitted by Traxler (2005). Most of these studies have been developed based on the use, in the context of the classroom, of mobile devices like mobile phones or PDAs. The results of these studies are important in the sense that they suggest ways forward and reveal new possibilities in education.

3. CREATE AND SHARE WITH MOBILE FLICKR

Mobile Flickr¹ it's a Yahoo service which can be used for several different purposes. In an educational context, this service can help to support the development of both individual and collaborative learning activities, sharing images and data collection. The ability to share images with other learners anywhere and at any time is an added value of this service in the field of education.

The development of technologies for mobile environments seems to be not just a fashion, but a need to cope with growing demand for mobile users, and Mobile Flickr seems to answer some of those needs.

The challenge to Yahoo in Mobile Flickr, after the success of Flickr for sharing pictures online, has been responding to the new demands of personal and business users, tracking the development of wireless technologies with Nokia, their business partner. Mobile Flickr can be used with a Yahoo account. This service allows sending of pictures directly to the Web from a mobile phone or computer, and they can then be accessed by mobile and other supported devices.

4. STUDY

As part of the Mobile Generation² project, we planned a teaching and learning experiment to evaluate the influence of mobile learning in students' engagement in the activity. Students used their Mobile Phone and Mobile Flickr service.

It was a field study regarding the Baroque, to be carried out using the phone, and was inserted into the curriculum development activities. Braga, in the northern of Portugal, is a Baroque city, so we asked the students, of a vocational class (N=15) of Carlos Amarante Secondary School, to take some pictures of the different baroque monuments in the city, using their own cell phones, and to send them by email from the phone to the Mobile Flickr Website³. The colleagues who were in the classroom prepare the information for each monument and discuss about the features of this architectural style.

Those students whose (n=10) mobile phones included a camera and had an email service went outside for data collection. The other pupils (n=5) waited in the classroom for publication of the pictures on Mobile Flickr. These students, using a laptop connected to the Internet, researched information about the monuments and wrote a text to subtitle each image. Students who did the fieldwork had to send an SMS to their colleagues in the classroom to tell them about work development and to ask if there were any difficulties or requests for clarification. Students who remained in the classroom as they received messages had to give information to the teacher and prepare a response if necessary. The tasks performed by the students in this activity can be seen in Figure 1. It was an interesting collaborative learning experiment through mobile technologies because all students participated actively and learning became more flexible, extending the teaching and learning process.

¹ <http://m.flickr.com/>

² <http://geramovel.googlepages.com>

³ <http://m.flickr.com/geramovel>

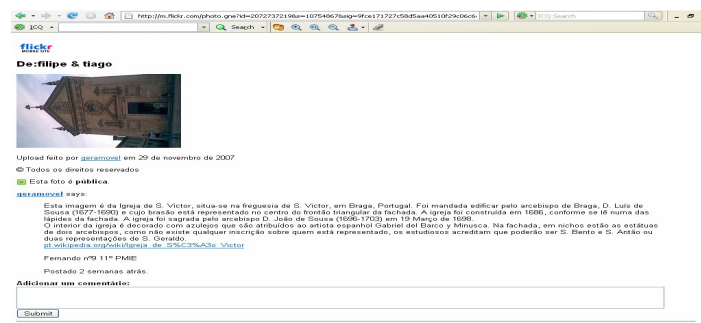


Figure 1. Mobile Flickr Website.

4.1 Data collection

For data collection we developed a questionnaire, filled out by the students at the end of the experiment. The questionnaire had three parts, the first part: Possession and use of the cell phone, the second: Using the phone to send photos to Mobile Flickr and the third: Implementation of the mobile phone in school.

4.2 Data analysis

For this report we only used the data collected in the second part of the questionnaire about the students' perception of the use of mobile phones to send photos to Mobile Flickr. We focused on three aspects: i) degree of satisfaction of the students, ii) understanding of the Mobile Flickr service and iii) limitations of the use of the service. To indicate the degree of agreement or disagreement we used a Likert scale with three options: disagreement, uncertainty and agreement.

4.2.1 Degree of students' agreement

For the students' degree of satisfaction (table 1), the majority (70%) liked to be able to send a picture from their mobile phone to the Web through the Mobile Flickr service and felt this motivated them to study the curriculum contents (60 %). As regards their liking of the speed with which the photos are published on the Web, only 50% liked it and 40% were uncertain. This can be explained because the first picture only took about 10 minutes to be published in Mobile Flickr, the next took over 20 minutes and the last were unable to be published because of problems with the service.

Table 1. Students' satisfaction with the use of mobile phones to send photos to Flickr Mobile (n = 10)

Itens	Disagreement		Uncertainty		Agreement	
	f	%	f	%	f	%
I like to be able to send a picture from my phone to the Web via Mobile Flickr	0	0	3	30	7	70
Using the phone to conduct this activity led me to the study of Baroque	0	0	4	40	6	60
I liked the speed with which I can post pictures on the Web	1	10	4	40	5	50

With regard to the understanding of the Mobile Flickr service (table 2), the majority of students (70%) agreed that it was easy to use Mobile Flickr and they intend to use this service more often to collect data for the classes.

Table 2. Understanding of Mobile Flickr service (n=10)

Itens	Disagreement		Incertainty		Agreement	
	f	%	f	%	f	%
It's easy to use Mobile Flickr	0	0	3	30	7	70
I intend to use the service more often to collect data for the classes	0	0	3	30	7	70

As regards limitations on the use of mobile phones to send photos to the Web, (table 3) all students believe that it is expensive to send pictures by e-mail to the Web from mobile phones and 70% said they would like to have had access the Internet via mobile phone to access Mobile Flickr and monitor the work of their classmates in the classroom. These results show us that reducing the cost of services for Internet access via the mobile phone could lead to an increase in the use of the already large range of services that could be accessed by mobile phones.

Table 3. Mobile Flickr use limitations (n=10)

Items	Disagreement		Incertainty		Agreement	
	f	%	f	%	f	%
It is expensive to send pictures by e-mail to the Web from mobile phone	0	0	0	0	10	100
I would have liked to have had access to the Internet through the phone to access the work of colleagues in the classroom	0	0	3	30	7	70

We wanted to know if performing this field study using cell phones and Mobile Flickr was important to the pupils and the majority of them (70%) responded positively. This experience was a collaborative activity so it was of interest to us to hear opinions about it from all the students. The different justifications presented by the two groups on the importance of this activity and what more they liked to do are shown in tables 4 and 5.

Table 4. Students' with cell phone answers (n=10)

Why was this activity important to you?	f	What did you like most?	f
It was a different and amusing activity	3	Taking pictures and sending them to Mobile Flickr	1
We learn more things	2	Using the phone to learn	2
I understand the Baroque style better	2	I liked taking the photos and making the movies	1
We can send material without waiting for a computer	1	It got me out of the classroom	5
We can investigate and collect images that are not on the Internet	2	Sending pictures	1

This activity was important for students who used the cell phone because they learned more things and understand better the curriculum content that they were studying. What they else liked to do was to go out to do the field experiment and use the mobile phone to learn, which reflects the students' commitment to such activities. They liked this activity of collecting pictures that their colleagues are using in the classroom.

Table 5. Students' who stayed in classroom answers (n=5)

Why was this activity important to you?	f	What did you like most?	f
It was fun to do this activity	1	All tasks	1
There wasn't a boring class	1	Adding text to the images	2
I liked it very much	1	Receiving my classmates' messages	2
I found it very interesting	2		

For students who stayed in the classroom, this activity was important because they found it very interesting and the lesson has become less boring. They enjoyed getting SMS from colleagues and adding text to images, reflecting the involvement of all students in their realization.

5. CONCLUSION

This experiment has shown students' involvement and enthusiasm, because everyone liked performing the activity. It helped to make pupils more aware of the potential of mobile phones in the educational process

and their implications in the teaching and learning process. The results show that, although there was great satisfaction among the students, the e-mail service is expensive and the publication of the images could not be done quickly and even sometimes not at all. These limitations may be an obstacle to the widespread use of Web-based services for mobile phones actually. But the main benefits of this experiment were to create opportunities for students personal development, the flexibility in working and learning, the opportunity to carry out educational tasks, the possibility of students to keep in touch with teacher and classmates via email while out of the classroom. Besides, as one student told us, it makes learning more meaningful and unforgettable. Others benefits were the possibility to access information and data at any time, the opportunity to learn collaboratively in any context. Both groups were more actively involved in learning and interacted in order to create a final product. The fact that the students learned from their own collected materials has considerable benefits. Students felt as producers and consumers of their own material. This sensation of belonging to the information society is impossible to achieve in a traditional class.

In summary, we intend to continue to evaluate the implications of the use of mobile devices (phone and Tablet PC) in the field of education through the implementation of new experiments. Despite new data services can be expensive and phone keyboard may be small and therefore difficult to use, the future of mobile learning will be a reality in our schools.

REFERENCES

- Attewell, J. (2005). Mobile technologies and learning: A technology update and m-learning project summary. [Accessed 12/12/2007], <https://www.lsda.org.uk/cims/order.aspx?code=041923&src=XOWEB>.
- Moura, A. & Carvalho, A. (2007a). Learning anywhere, anytime through a laptop: a pilot study in a secondary school. In Sánchez, Inmaculada Arnedillo (ed.), *IADIS International Conference Mobile Learning mLearning 2007*. Lisboa, Portugal, 184-188.
- Moura, A. & Carvalho, A. (2007b). Das Tecnologias com fios ao Wireless: Implicações no trabalho escolar individual e colaborativo em pares. In Dias, Paulo, Varela de Freitas, Cândido, Silva, Bento, Osório, António, Ramos, Altina (eds), *V Conferência Internacional de Tecnologias de Informação e Comunicação na Educação (Challenges 2007)*. Universidade do Minho, Braga, 104-117.
- Quinn, C. (2000). mLearning: Mobile, Wireless, in your Pocket Learning. LineZine, Fall 2000. [Accessed 16/12/2007]. <http://www.linezine.com/2.1/features/cqmmwiyp.htm>.
- Rushby, N. (2005) "M-learning," *British Journal of Educational Technology*, vol.36, nº 5, pp. 709.
- Savill-Smith, C. 2005. The use of mobile learning by homeless learners in the UK. In Isaias, P., Borg, C., Kommers, P., Bonanno, P., (Eds.), *Proceedings of the IADIS International Conference on Mobile Learning 2005*, June 28-30, Qawra, Malta, pp 24-32.
- Seppala, P., & Alamaki, H. (2003). Mobile learning in teacher training. *Journal of Computer Assisted Learning*, 19(3), 330-335.
- Sharples, M. (2000). The design of personal mobile technologies for lifelong learning. *Computers & Education*, 34, 177-193.
- Traxler, J. (2005). Case Studies: Introduction and overview. In Kukulska-Hulme, A., & Traxler, J. *Mobile Learning: A Handbook for Educators and Trainers*. London: Routledge, pp.70-75.
- Wagner, E D. (2005) "Enabling Mobile Learning," *Educause Review* vol. 40, nº3, pp. 40-53.