MOBILE DEVICES INCREASING OPPORTUNITIES FOR INFORMAL LEARNING AND SECOND LANGUAGE ACQUISITION

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ABSTRACT

This paper provides the results from a study conducted in 2010-2011 on 638 French-speaking university students in order to identify how informal learning with English language media enhances English language acquisition and to identify the role that mobile technology plays in providing access to such media. By associating the respondents' answers to the survey questions with their English language test scores we have been able to demonstrate that there is a positive correlation between a student's level of English and the amount of time he/she spends learning English informally by consuming media and participating in social networks. The study indicated that only 13% of the time a student spends consuming English language media is spent using a mobile device. The students who participated in the survey give learning the lowest ranking amongst uses they have for mobile phones.

1. INTRODUCTION

Much literature on Mobile Assisted Language Learning (MALL) discusses the potential of the mobile phone, especially pre-smartphone mobile terminals for mobile language learning rather than how actual use or how mobile access to resources have enhanced learning. The study presented in this paper was conducted within the framework of a research and development project called LIMED (Linguistic Meta-Educational Engine for Audiovisual Content) (www.limed.org) which aims to automatically generate listening comprehension quizzes to support English language learning with authentic video content accessible from a PC or a smartphone to exploit the potential of mobile technologies for language learning. The LIMED service targets young adults, students, and professionals working in France. This paper provides the results of a quantitative study designed to identify major trends in the individual English language learning paths in various learning contexts: formal, non-formal, informal, mobile and non-mobile amongst of a group of 638 French-speaking university students. Our research was intended to identify the importance of media in their personal learning paths, more particularly in mobile and informal learning contexts. Our overriding research question is: How does the consumption of media made available with mobile devices enhance second language acquisition? Our preliminary analysis would tend to indicate that the amount of time students spend learning English informally with English-language media and social networks can be positively correlated to the students' performance on standardized tests of English like the *Test of English as International Communication (TOEIC) or the Oxford Placement Test (OPT)*. While at the time of our study the most widely used form of access to media is via a non-mobile Internet device, this may change in the future as mobile devices are increasingly media-friendly and accessible in price. The frequency of mobile Internet access to media may surpass the frequency of non-mobile Internet access to media in the same way Internet access to media has surpassed non-networked access to media for the students who answered our questionnaire.

This paper is broken down into five parts. Part 2 deals with the conceptual framework and learning theories relevant for learning with mobile devices such as: mobile learning and MALL, formal, non-formal

and informal learning. Part 3 presents the research methodology implemented for our study followed by a presentation and discussion of the important results in part 4. Part 5 concludes the paper and offers future perspectives.

2. BACKGROUND

In this part we first introduce the motivation for conducting our study and the characteristics of the learner group under study. We assume that the Internet multiplies learning opportunities by providing access to comprehensible input (Krashen, 1985), thus enhancing second language acquisition (SLA). We highlight key concepts which relate to how technology enhances opportunities to learn with comprehensible input, namely: mobility, mobile learning, mobile assisted language learning, and the concepts of formal, non-formal and informal learning.

2.1 Motivation for conducting the study and context

Our study was conducted on a group of 638 students aged 19 – 23 enrolled in Master's degree programs in engineering and management in France. Prior to entry, the majority of students have followed a fairly standardized primary and secondary program of study as prescribed by the French Ministry of Education[1] which requires all students to study two foreign languages. Entrance exams to Master's programs in engineering and management include written and oral exams in foreign languages. Whereas their formal learning paths are fairly homogeneous for the majority of students, there is a great deal of disparity in their English language proficiency when they enter the Masters' programs as measured by the *Oxford Placement Test*. Interviews with students would tend to indicate that there is a great deal of heterogeneity amongst their practices in non-formal and informal learning of English which could explain the disparity in their mastery. During the 80s and 90s the most commonly cited non-formal and informal English language learning opportunities were immersion, study programs, and internships abroad. Since the beginning of the 21st century an ever increasing number of students cite the importance of the "Internet" in providing learning opportunities, facilitating access to the foreign press, films, and television series. This observation motivated the investigation that we report on in this paper. Our aim is to measure and compare the time spent in formal, non-formal, and informal learning, consumption of various media types, behavior in accessing the media and the correlation with English language acquisition.

2.2 Mobile Learning and Mobile Assisted Language Learning

The meaning of the term mobility (See Traxler in Bachmair 2010, pp. 103-113) as used in mobile learning (ML) or mobile assisted language learning (MALL) has evolved over time. Mobility often refers to the mobile device, technology, systems or access via a portable, handheld, personal electronic device often connected to a network, i.e. Internet, thus enabling anytime, anywhere access to data, ICT tools and Web 2.0 applications (Chaka, 2009; Redecker and Punie, 2010). Mobility also refers to time and place (Kukulska-Hume, 2008), especially the imposed set or prescribed conditions of formal learning environments compared to freer conditions of informal environments. Sharples et al. (2007, p.225) define m-learning as the processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies.

MALL is often associated with computer assisted learning (CALL) although currently there is no specific learning theory which is characteristic of any one or differentiates these learning environments from basic learning. Each one offers features which may impact (Traxler, 2007) the learning process and ultimately the outcome as Kukulska-Hulme and Shield (2008, p.273) point out: MALL differs from computer-assisted language learning in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access and interaction across different contexts of use. Taylor (2006, p. 26) adds the overall context of contemporary society which he characterizes as a mobile age. As for learning theory,

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[1] Ministère Education nationale jeunesse vie associative. Baccalauréat générale: définitions des épreuves jusqu'à la session 2012 (http://eduscol.education.fr/cid46201/definitions-des-epreuves.html)

any one or a number of them could provide the theoretical framework of ML resources depending on the: learners, their learning culture, objectives, content, time, place (See Naismith et al. 2004).

The language learning community has not yet massively taken up mobile technologies although there have been many small-scale experiments which aim to develop one or two specific skills such as vocabulary, listening comprehension, reading comprehension, or speaking and listening. Many applications are now available on AppStore but no research has shown learners' actual use and learning outcomes (Godwin-Jones, 2011).

2.3 Formal, non-formal and informal learning

Much literature (Coombs 1968; Hrimech 1996; Shurugensky 2000; Livingstone 2000, 2001) classifies learning into three main categories with various characteristics. Generally speaking formal learning is the most socially recognized form entrusted to official institutions (schools or a school system) with structured learning objectives, a prescribed timeframe and various support. It is intentional on the learners' part and leads to certification (European Commission 2010). Non-formal learning is offered by many types of organizations not officially recognized as learning institutions and does not lead to certification. It may also have structured objectives, be intentional on the learner's part and have a predefined time framework. Informal learning corresponds to everyday life, i.e. activities whose main objective is not education (See Brougère and Ullmann 2009, esp. Ch. X on media). It is not structured, non intentional and does not lead to certification. In practice, borders between different forms are rather fuzzy, especially when mobility enters the picture as Kukulska-Hulme (2009) points out: "Irrespective of whether teachers decide to adopt new technologies in formal education, learners are found to be already using them to support aspects of their learning". Some research indicates that mobile devices increase learners taking responsibility for their learning, defining needs and directing their learning (Kukulska-Hulme & Shield, 2008, Kukulska-Hulme, 2009), including life-long learning as well as possibilities of personalization of learning and learning resources.

3. METHODOLOGY – QUANTITATIVE SURVEY

The objective of our study is to identify the role that informal learning, more especially informal learning with the media, plays in second language acquisition and how mobile devices contribute to learning English. Opportunities to learn English informally abound in Europe where English is widely spoken as an international language and access to English language resources is made widely available by traditional and online media: television, radio, Internet, etc. Another goal was to identify the role that mobile devices play in facilitating learners' access to English language media.

Our research is based on a quantitative study for which we used a questionnaire to collect data. The survey was designed to: (1) quantify the amount of time each student has spent throughout their lifetime learning English: formally, non-formally, and informally; (2) quantify the amount of time spent annually accessing English language media and the type of media most often accessed; (3) quantify the most frequently used forms of access to media: non-networked (print and electronic), non-mobile Internet, mobile Internet; (4) correlate the individual learning paths to the students' level of English as identified by standardized tests; (5) evaluate how well equipped the students are with mobile devices and (6) evaluate the students' perceptions about mobile devices as a tool for learning.

The quantitative survey was conducted during the 2010-2011 academic year and the beginning of the 2011-2012 academic year amongst the entire student body of 1,771 students enrolled in Master's degree programs. The survey included 13 questions and was distributed in paper-based format during English classes and made available online. Questions covered English language learning experiences from formal training in elementary school through to university; non-formal training such as language classes outside the traditional school system, summer study abroad, home stays; informal learning in immersion in the form of work experiences, leisure activities, vacation; informal learning with media and new technologies. Most questions were closed; open-ended ones concerned the amount of time spent on different activities or examples of resources used. (See questionnaire at www.limed.org).

638 questionnaires were validated for analysis, the majority of which were collected in paper-based format during English classes. Questionnaires were correlated with students' level of English: results from *Test of English for International Communication (TOEIC)* and *Oxford Placement Test (OPT)*. We were able to correlate 263 questionnaires with *TOEIC* scores (Tannenbaum and Wylie, 2008) and 338 questionnaires with *OPT* scores (Allan, 2004) to the Common European Framework of References for Languages (CEFR)[2]. The *TOEIC* exam does not evaluate level C2. We do not have test results for 37 questionnaires; however we calculated these into the results concerning trends in use of technology to consume media (Figures 3 and 4). The majority of respondents were speakers of French, aged between 19 and 23 and are required to study English for their degree. Most of the students surveyed have spent approximately 10 years studying English in school from elementary school through higher education. The breakdown of respondents according to their level of English proficiency in terms of the CEFR based on *TOEIC* or *OPT* scores can be seen in Table 1:

Table 1. Distribution of students who participated in the survey according to their level of English

CEFR Level	Number of students	%
A	30	5%
B1	124	19%
B2	237	37%
C	210	33%
Students without standardized test score	37	6%
TOTAL	638	100%

In order to best interpret the results of the quantitative survey, interviews are being conducted with sample sets of students representing the different English language levels.

4. RESULTS AND DISCUSSION

The tables and charts in this section provide the preliminary results from our quantitative study. They illustrate the significant amount of time that students spend learning English informally either in immersion or with the media as compared to the amount of time spent learning English formally in school and the positive correlation with English language acquisition. Our findings would tend to indicate that access to English language media has a greater impact on English language acquisition than immersion. At the current time the participants in this study most often access media via non-mobile Internet devices rather than mobile devices.

4.1 Comparison of hours cumulated in formal, non-formal, and informal (immersion) English language learning

Figure 1 compares the total number of hours spent by our respondents in formal, non-formal, and informal (immersion) learning contexts. Students provided information about their English language classes during their elementary, secondary, and tertiary schooling and the number of hours was calculated according to the official figures provided by the French Ministry of Education. We asked students to express the amount of time they spent in immersion as a number of weeks for which we counted 35 hours for each week in immersion.

Globally students have cumulated an average of 1045 hours learning English in a formal setting; the average total number of hours varies from 897 for B1s to 1204 for Cs. Curiously B1s cumulate fewer hours in formal learning than As (950 hours) yet they perform better on standardized tests.

The fact that B1s score higher on standardized tests than As could be explained by the time they spend learning English informally in immersion. At the time the questionnaire was conducted, the respondents had cumulated an average of 303 hours in immersion. On average As spent 88 hours in immersion while B1s spent almost twice as much time in immersion, 151 hours. Thus, Cs and B2s spent more time than the global average in immersion (12% and 11% respectively) while and B1s and As spent less than the average number of hours in immersion (50% and 71% respectively).

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[2] http://www.coe.int/t/dg4/linguistic/cadre_en.asp

Figure 1. Comparison of hours cumulated in formal, non-formal and informal learning: elementary school through university
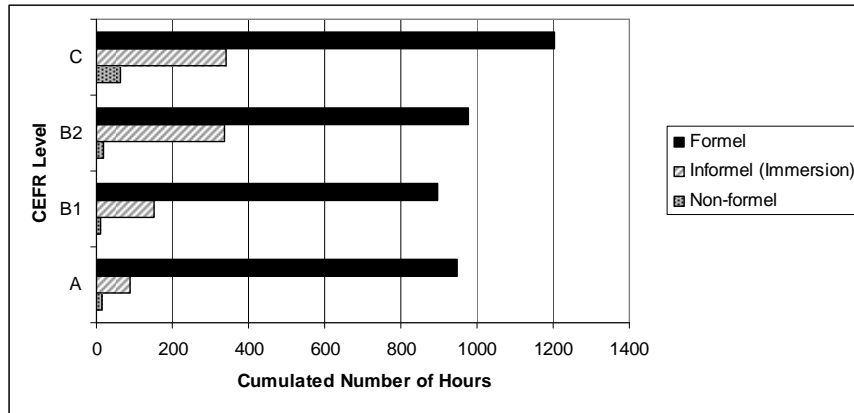
4.2 Comparison of hours cumulated in formal and informal learning (English language media and social networks)

Students were asked to identify the types of English language media they regularly consume and the average amount of time they work with the media. All the time estimates are expressed in number of hours per year. The results in Figure 2 would tend to indicate that there is a strong, positive correlation between the number of hours a student spends consuming English language media and his/her level of English. Annually students spend on average 95 hours in formal English language learning: Cs spend 102 hours per year, B2s 90 hours, B1s 88 hours, As 92 hours, reflecting the global number of hours each group has cumulated throughout their studies as seen previously in 4.1. Figure 2 illustrates the annual time students spend in formal learning, consumption of media and working with social networks. Compared to the figures for formal learning students spend a significantly greater amount of time each year consuming English media than in formal learning: AsX6; B1sX9; B2s and Cs X 10. Additionally, students with a better mastery of English (B1s, B2s and Cs) spend more time working in English language social networks than they do in formal learning: B1s 40% more time, B2s 50% more time, and Cs spend twice as much time, while As spend 20% less time working with social media than in formal learning. Thus, our study shows a positive correlation between the time students spend learning English informally with media and social networks and their level of English, measured by standardized tests.

Figure 2. Comparison of annual number of hours spent in formal and informal learning (media and social networks)
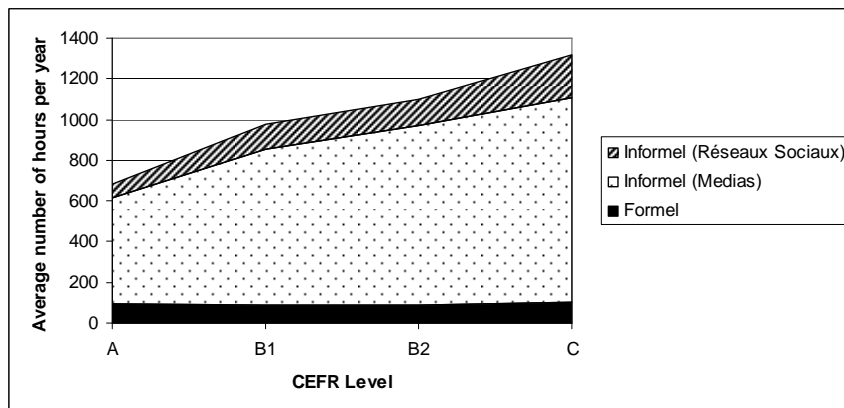
4.3 Personalization and access to English language media

Students were asked to identify the types of English language media they worked with most often and to indicate how they access the media. We identified three types of access to media: non-networked which includes paper-based and electronic media; non-mobile Internet access and mobile Internet access.

Concerning media consumption, most types of media in English are used to support informal, either out of the classroom or unintentional/incidental learning, but strong preferences for some English-language media emerge: 88% of the students listen to music, 83% watch films, and 82% watch television series, while only about 35% of the students read books and news or play video games. Figure 3 shows that students who listen to music spend an average of 414 hours per year, those who watch TV series an average of 148 hours per year, and those who watch films about 102 hours per year.

Figure 3. Types of English language media most often accessed by students and form of access: stand-alone, non-mobile Internet and mobile Internet
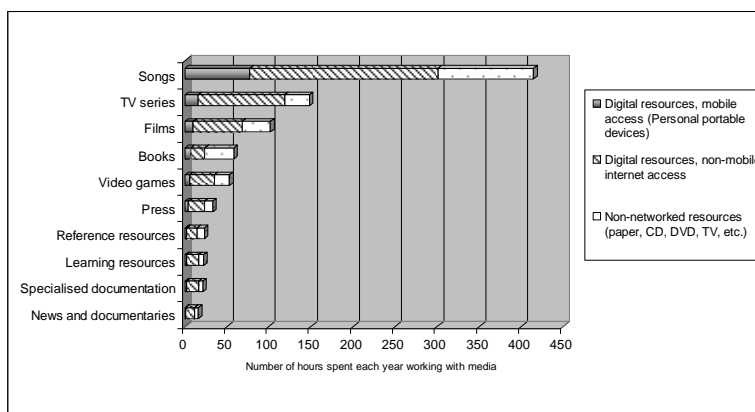
The results in Figure 3 indicate that all media types are still being accessed via non-networked supports (print and electronic), in fact this form of access represents 30% of the time students spend working with English-language media. 70% of the hours students spend accessing media is electronic and networked, 57% is non-mobile Internet and 13% is mobile. Thus the time spent accessing English-language media via "traditional" non-networked supports is still greater than mobile access. Books are an exception in the general preference among students for networked media. They are most often accessed in their traditional paper-based form, representing 59% of the time the students spend reading, although they are available in electronic format.

Students were asked to indicate the type of computing and mobile devices they owned. 89% of the students surveyed own a mobile phone, 68% have mobile phones with Internet access, and 4.2% of the students have a mobile tablet. We observe that although 51 to 55% of the students surveyed are adequately equipped to access the Internet with mobile devices, mobile Internet access only represents 13% of the time students spend accessing English media resources with mobile devices.

Students were asked to provide the titles of the media they listen to, watch, or read most often. The results reveal a wide variety of interest. 427 respondents gave examples of their favourite TV series. 987 titles of TV shows were cited representing 113 different titles. 403 students provided 752 film titles among which 267 different titles were cited. The wide variety of titles cited by students indicates the way in which they personalize their own informal learning.

4.4 Use of mobile devices for learning

Students were asked to rank their use of mobile devices from 1 to 9 with 9 being the highest value for the most important use of the mobile device. Students most often use the currently established functions of mobile phones for communicating with others: telephone, SMS, MMS. Using mobile phones for information search/retrieval like GPS, e-books and Wikipedia are in second position. Among the nine uses of mobile devices that students could rank Learning got the lowest ranking. Although information retrieval from

references like Wikipedia is frequently used by the students, they do not yet perceive the mobile device as a tool for learning.

Figure 4. Most frequent uses of mobile devices, ranked in order of importance
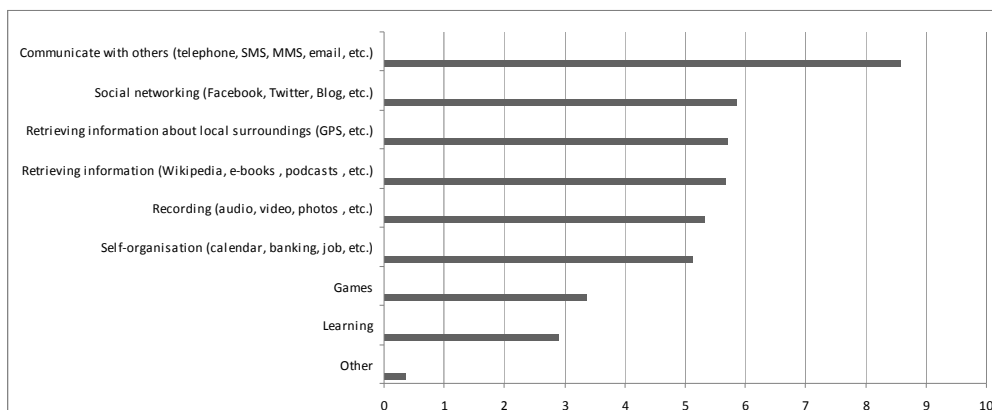
Mobility may offer advantages and opportunities for learning but it has not been massively taken up by the language learning community (Stockwell 2010; Chotel et al 2011) and learning (in the sense of formal courses or rather than informal learning such as accessing information, or learning how to use applications, etc.) is not one of the most frequent, daily uses of mobile technologies (Bachmair 2007; Stockwell 2008).

5. CONCLUSION

This paper presents the results of a quantitative study conducted amongst a group of 638 French-speaking university students which demonstrates that there is a strong, positive correlation between a student's level of English and the amount of time he/she spends accessing English language media and working in social networks. The abundance of English language media provides a vast array of (comprehensible) input, allowing learners to personalize their informal English language acquisition. 70% of the hours students spend accessing media are spent accessing electronic media via the Internet. 57% of access to media is via is non-mobile Internet and 13% is mobile. Students do not yet perceive the mobile phone as a tool for learning. Currently we are following up the questionnaires with face-to-face semi-directed interviews to better understand answers to the questionnaire used in the quantitative study and how their experiences and learning paths have contributed to English language acquisition and the role that mobile devices contribute to language learning.

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