Improving learning by motivating studentsto read the news using ICT

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Abstract

This paper aims to analyze how reading news through ICT can motivate students to improve learning. In this study, almost 200 students in Finance and Marketing courses, participated in a three-month guided reading activity program. Motivation levels were evaluated both at the beginning and the end of the program through online surveys. In addition, traditional evaluation processes such as exams were tested to determine their effectiveness in motivating and engaging students or if using new technologies on their own were sufficient to motivate and to engage students in their learning processes.The results point to reading newspapers and ICT serving as tools to shape and enhance the learning environment. However, it is important to develop proper evaluation methods and user friendly ICT available on multiple devices in order for access barriers to be sufficiently lowered so that student will actually use them.

Keywords: news, technology, information and communication technologies, educational innovation.

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1. Introduction

One of the principal objectives of the European Space for Higher Education (ESHE) is to improve knowledge transfer by improving student motivation. Traditionally, university teaching methods rely heavily on master classes, a unidirectional technique of conveying theoretical content from teacher to students and where the students are considered empty vessels, with no active participation in their own learning process. This method, quite successful in a previous era and in a different world and international environment, is characterized by an active speaking role for the lecturer and a passive listening role for the student. However, a rapidly changing world demands innovation and changes in the traditional forms of teaching. Therefore, the ESHE proposed a different approach wherein the student becomes the main actor and the teacher acts as a guide and a coach. The principal objective for the teacher with this approach, becomes student motivation with the students focused on self-directed autonomous study.

Information and Communication Technologies (ICTs) are an intrinsic part of a student's life (Brown 2001), however they are tools that are not always used in class or if used at all, in a proper manner for motivation. The permanent use of ICTs that automatically and constantly link individuals with the real world led us to support and promote news monitoring among our students. Our goal was to test the impact on motivation of the use of increasingly relevant reality based information that surrounds students. If something is relevant to a student, a priori, it is likely that it will have a positive impact on learning motivation. If a student relates to real world information, then it is more likely that the student will want to learn more about the underlying theory.

Thus, our main research question was to determine if students would be more motivated to study a subject if they were well informed about current events related to the subject by accessing the news. We also examined whether using appropriate ICT for reading the news could be helpful to increase motivation.

Monitoring the news is premised on content available on reputable websites being professionally generated and more importantly being regularly updated. Through daily reading, students acquire real world knowledge including information on recent discoveries, innovations, regulatory changes and market developments. Online information sources include formal broadcast media such as Reuters, the EFE Agency and traditional major newspapers, (e.g. Wall Street Journal, The New York Times, or, in Spain, El Pais or El Mundo), but also informal channels of information that have emerged in recent years such as social networks and mobile applications, e.g. Facebook, Twitter, WhatsApp, Google+, etc. The principal problem with relying on this educational approach is in dealing with the overwhelming amount of information that is available online and which can be a daunting task for the student. A tool that can filter information to yield relevant content could be helpful in improving the learning experience.

To evaluate our approach, we conducted a field study with Rey Juan Carlos University students that majored in diverse degrees (Economics, International Relations, Business, and Industrial Engineering) but that had joint Marketing and Finance classes. An experiment, with different methodologies in different classes, was designed to evaluate the news monitoring activity.

The primary objective of our study was to evaluate the impact of the different methodologies implemented for monitoring the news on student motivational levels. A secondary objective was to assess individual and group motivational changes, regarding this learning activity. Individual skills assessed included, active, independent and thoughtful student learning, while group skills assessments were focused on synergistic and cooperative learning. These are all objectives of the ESHE.

The remainder of this paper is organized as follows. The second section reviews the literature related to motivation in education and, in a more specific way, research about news and using ICT as a motivational tool in the field of education. The third section describes the methodology we used with

the fourth section describing the results we obtained through two questionnaires. The last section presents a discussion of the results and our conclusions.

2. Literature review

Motivation is one of the most widely studied topics in the field of Education as it is an important part of the learning process. Two approaches have been used to study motivation. The first is focused on a process (not a result) that requires goals and a certain activity, either physical or mental, and which is sustained over time (Boza & Toscano, 2012) or on phenomena that are determined by social, cultural and economic circumstances (Abarca, 1995). The second approach is based on studying actions that consider the degree to which students strive to achieve multiple academic goals (Valle et al., 2015).

Student motivation has been researched using different methodologies including correlational, experimental, qualitative and ethnographic methods (Pintrich & Schunk, 2006). In Spain, Boza and Toscano (2012) found that motivation research has been focused on primary and secondary students using questionnaires (the MSLQ -Motivated Strategies for Learning Questionnaire Pintrich; Process and SPQ -Study Questionnaire of Bigs). Other authors have used specific questionnaires or quantitative methods. These studies analyzed twenty variables that influence motivation and which are described by capacity, self-confidence, self-concept, performance, learning styles, intellectual habits, learning content, capabilities, expectations, cognitive strategies, self-regulatory strategies, values, needs, goals, teaching methodologies, teacher expectations, management and classroom climate. They proposed what they call a "lifeline" of motivated learning based on conscious reasons, conditions, strategies, involvement, goals and attitudes.

In summary, then, previous approaches have focused on the emotional side of the student, their management capabilities and the transmission of knowledge from the teacher. Our research has been based on using technology to change the teacher-student relationship. In this sense, the use of the Internet or e-learning platforms can be viewed as favorable complementary motivational tools, especially by young people who today are considered "digital natives" as coined by Prensky (2001). Today's young people, and especially children, are able to easily deal with multimedia content and technology, which can then promote learning in other ways such as self-learning (Ortoll, 2008). The benefits of self-learning, using technology, are evident in its ease of access, flexibility, reduced learning times, compatibility with other activities, access while in a comfortable environment, access to timely information, lower costs, customized training methods and on-going results monitoring. The use of technology also results in improved communication as it enables students to 1) more easily contact the teacher 2) contact each other which facilitates teamwork, and 3) have greater accessibility to study material with the availability of a document repository. It has been estimated that the net result of all these advantages has been that the learning rate has increased by 60% (Learnframe, 2000).

The conditions for faster access to the Internet have already been established. Over the last two decades, the infrastructure to access the Internet has improved dramatically, resulting in Internet usage increasing tenfold from 1999 to 2013 with an estimated 3 billion users in 2014, representing approximately 40% of the world's population (Internetlivestats, 2015). In Europe, Internet penetration rates have reached 75% (Seybert & Reinecke, 2013). These data demonstrate the extensive use of online media. According to the Association for Communication Media Research (AIMC -2014), 89% of users who access the Internet, use it to read the news, which is ahead of viewing online video (84.6%) and consulting street maps (76.5%). Use of the Internet for news acquisition has doubled since 2002, with more than a third of users using two or more devices to read the news. Mobile devices are the primary means of access with 66% of users relying on one to read the news (AIMC, 2014). Other media such as social networks and mobile applications (Google+ and WhatsApp) also show a growing use. Traditional news brands still dominate the industry, but social news websites are on the rise.

A review of the literature reveals that research exists to support using the news to augment practical and theoretical learning. The first initiatives began in the 1970s with school reading programs despite concerns with recognizing the Press as publishers of literature (Lange, 1969; Verner & Murphy, 1977). The 1980s saw the launch of several initiatives to promote newspaper reading as educational tools to complement and supplement traditional classroom texts and resource materials. In the US and Canada, the "Newspapers in Education" program was noteworthy for the successful involvement of a large number of newspapers and students (Aiex, 1988). While initially used to teach idioms (Lee, 2013) and for adult education (Ricoy, 2001), the teaching of Science was the basis of work carried out in the UK by Jarman and McClune (2007) based on the importance of reading science news in the press because "young people should be able to understand and respond critically to media reports that have a science component" (Millar & Osborne, 1998).

In Spain, García and Crespo (1994) investigated the relationship between teaching and learning through the media and new technologies and they supported the use of incorporating technology into teaching methods. In the particular field of Science, Gadea et al., (2009) noted that studies concluded that most science teachers do not use social media as a learning tool but that they considered the use of social media to be helpful in advancing scientific and technological literacy – a term referred to by Fourez et al. (1994) - and that it promoted the interest of students in Science. So, they raised the incorporation of reading newspapers in formal science education, since no attention had been paid to this approach (González, 2000). Additionally, Spain has carried out a program called "educational media" which has been incorporated into a number of business projects based on the creation of activities and publications by media companies for use in classrooms. Educational media, which originated in the Press-School Program, has been promoted in Spain and other European countries since the late 1980s in an attempt to generate reading habits among secondary students (Yunta, 2015).

However, while new technologies have improved access to the news and while attempts have been made to use them as tools in the educational system, interest in being informed remains low. For young people, it is most striking to see a decline from the 1990s (Lauf, 2001). Currently, less than a third of young people read a daily newspaper while 75% show a strong preference for being informed by social networks (Casero-Ripolles, 2012). This situation stems from the virtual absence of strong reading habits in young people with Mendoza et al. (2015) finding that almost a quarter of Spanish students between the ages of 10 and 18 stating that they had never voluntarily read a book in their life or if they had, they had only read one. Currently, nearly 75% of newspaper readers are over 45 years old, with only 6% of readers between 18 and 24 years old (PRC, 2012). The research indicates that it is important to develop good reading habits from an early age and provides support for the need to develop new techniques to deal with student motivation to improve learning.

Thus, while research on using the combination of news and technology as a motivational tool is limited, it is focused on primary, secondary and adult education and not on university education. This is a gap that we attempt to address in our research.

3. Methodology

Technology serves as an extraordinary tool to shape and enhance the learning environment. In order to evaluate the extent of motivational achievement in class, we designed an experiment that allowed us to identify the impact of a new methodology and technology on students' motivation and learning processes.

Finance and Marketing are two examples of subject matter that have a direct and basic link with the reality that surrounds students and that are prone to environmental changes. These subject areas therefore are suitable for incorporating news into classroom theory to motivate students. However, the practical reality of achieving this goal in class is not always straightforward and is often not

performed in a proper manner. As a basic tool to retrieve relevant news daily through an automatic platform adapted to eLearning platforms, we suggest using the *iNotitium*platform (see Montalvo et al. (2010) for more details and Palomo & Montalvo (2011) for the precursor platform *iNews College*). This platform automatically generates educational materials from online news based on a combination of Natural Language Processing techniques with input from the expertise provided by lecturers to generate relevant content from students.

The pre-graduate students at Rey Juan Carlos in 2014-2015 amounting to a total of 34,251 students were considered to be the universe for the experiment. The rationale for the selection of students in Finance and Marketing was based on the impact that national and international news have on the related subject matter and on organizations and the economy in general. A total of 4 groups of students were involved in the activity, two in Finance and two in Marketing.

3.1. Description of the activity

Research was conducted over a three-month period using a three-stage approach. In phase I (one week), the students were presented with the educational activity of emphasizing the importance of paying attention to the news in order to better understand the theoretical concepts that were to be presented in the remainder of the course. Assessment of the students' participation in the activity was different between subjects in order to be aligned with the dynamics of the classes.

In Finance, the proposed learning activity was mandatory with one group being designated as experimental while the other was considered the control group. The experimental group was required to make oral group presentations every week, during the course, about the latest weekly news in finance and to take a final exam at the end of the course based on monitoring the news. The exam was a multiple-choice test about economic and financial events that took place during the two weeks preceding the exam date. The mark obtained on this exam represented 20% of the final grade of the course. The control group was only informed about the importance of following the news for financial studies, but that this activity would not have any impact on their final grade.

In Marketing, the proposed learning activity was considered optional, but each group had a separate blog task on the eLearning platform where lecturers and students had the ability to share news, documents, comments, and events related to various topics. The lecturer managed the dynamic of the chat on a daily basis and evaluated the students' activity. The most active students would get extra points in the final grade of the course.

During week one, the lecturers instructed students on the importance of monitoring the news and teaching them on how to be well informed through accessing the news about the latest economic, political, legal, and social issues in the world, released either in the print media, TV, radio, or the Internet. Also, an online questionnaire was distributed the first day of phase I to measure the initial perception of the students on the importance of being informed. The objective was to measure students interest about news before the activity. A total of 203 students participated in the first survey: 76 in Finance and 127 in Marketing.

In phase II (over three months), the different groups were encouraged and stimulated according to the specifications defined in phase I.

In phase III (one week), a specific mandatory evaluation involving 125 students took place in the Finance group and the blog task was closed on the eLearning platform for the Marketing groups. Additionally, a second online survey was performed to measure the students' perception about the news monitoring activity over the course. A total of 194 students participated in the survey: 69 from the experimental group and 28 from the control group in Finance, and 97 in Marketing.

4. Results and analysis

Based on the information collected from phase I and III through the two questionnaires, the perceptions and preferences of the students were analyzed both before and after the news monitoring activity. In this regard, students showed great interest and enthusiasm about the activity. From the beginning, 91% of the students surveyed, considered the activity as important-very important.

In terms of the sources (TV, radio, print media, or Internet) that were normally used by the students to obtain information, the analysis showed that the Internet was the main information channel. Figure 1 shows that 63.1% of the students always used the Internet for news monitoring and 30.1% did so often. On the other hand, only 1.1% of the participants always used print media and 2.3% always used Radio.
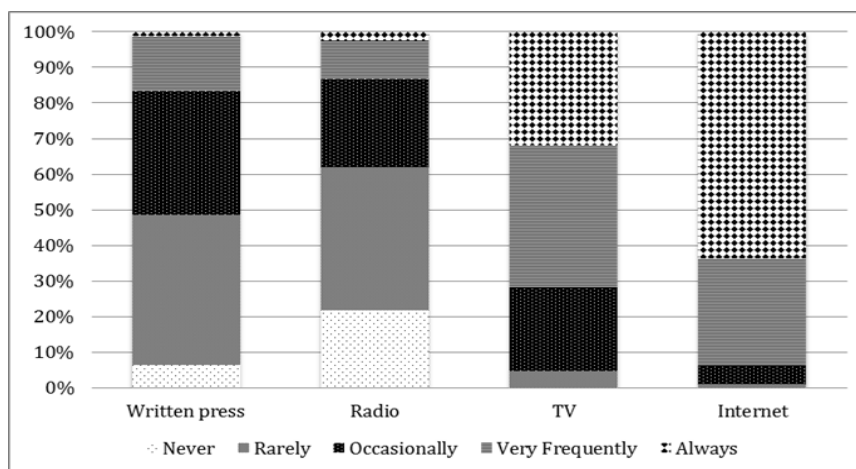

Figure 1. What is the frequency with which you use the following information sources? (%)

Regarding the type of information, they were interested in, the survey highlighted that social movements news was very important or important for 79.5% of the students, followed by political and legal news (77.8%). Economic and financial news was important for 73.3% of the students. This confirmed the wide diversification of interests among students.
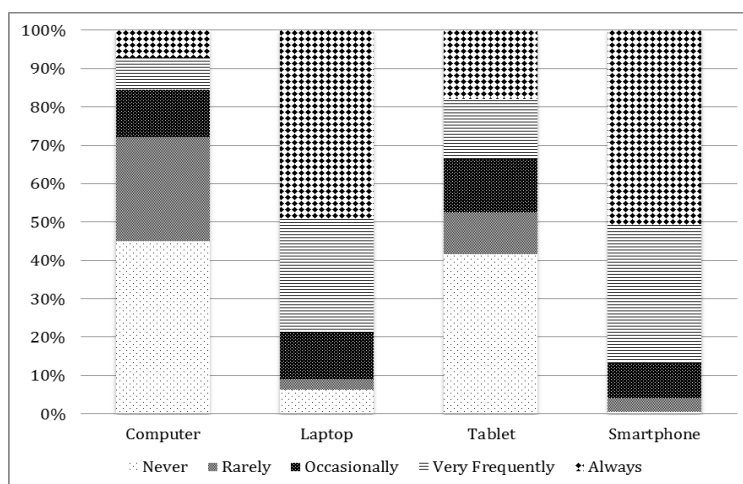

Figure 2. Level of usage of technological devices for news monitoring (%)

Figure 2 presents the level of use of different devices. It can be concluded that a portable format was highly preferred to read online news, since 85.8% of the students used smartphones always or very frequently, followed by laptops, and computers that were seldom used for this purpose.

After completion of the educational activity under the specifications described in Section 3, the survey performed in phase III provided important information regarding both the type of evaluation and the impact of the activity on the students. A descriptive statistical analysis was performed, focused on the following questions: what kind of evaluation has a higher impact on increasing student motivation towards monitoring the news in Finance and Marketing; are traditional evaluation processes in education, such as exams are still effective, or are new ICT based methods perceived as more natural by students in their learning processes? What procedures do students follow when they monitor the news? and could new ICT tools improve the news monitoring process?

Results revealed that the importance of the activity of news monitoring was quite diverse among the students involved in the activity. Figure 3 shows the evolution of student perception about the significance of news monitoring during the course. After the educational activity, the highest increase corresponded to the Marketing group (65.5% of the students considered news monitoring very important, and 22.9% important), showing that the use of ICT tools, such as the blog, was more effective in improving motivation, although participating students were also awarded with extra points in the final grade of the course. In Finance, there was an important difference between the experimental group and the control group (where the activity had no impact on the final grade of the course). The use of more traditional assessment mechanisms of students' participation (compulsory activity and exam) was critical in their engagement and motivation. As mentioned above, although students were enthusiastic about the activity from the beginning, it is important to have a proper mix of ICT tools and extra grading points to recognize students' efforts.
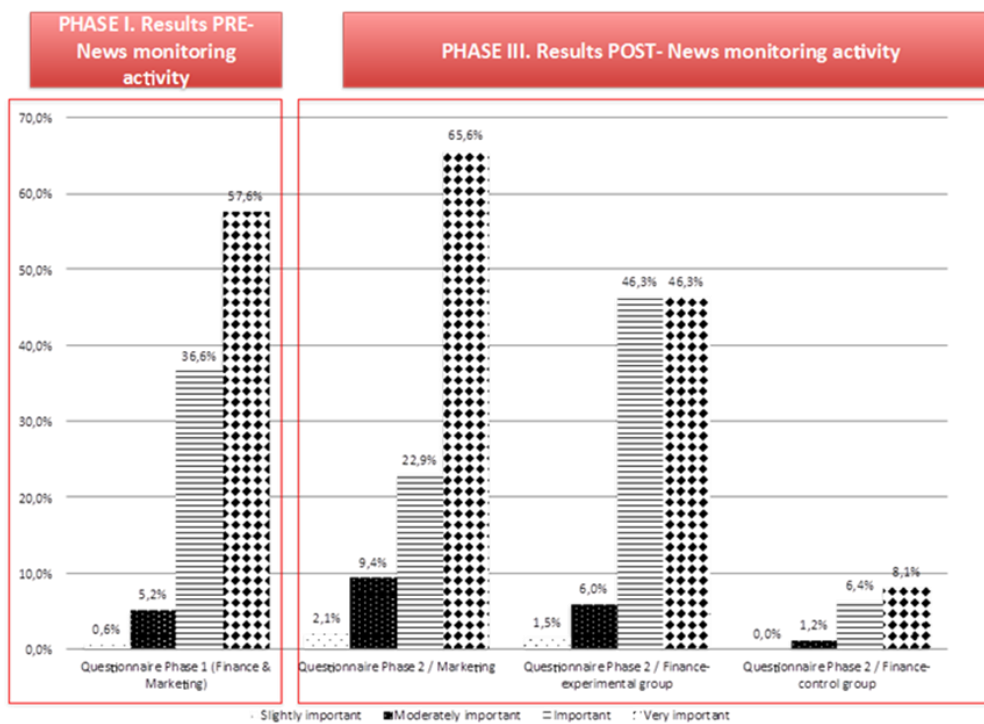

Figure 3. The impact of the activity "News Monitoring" (%)

In order to improve and increase the impact of news monitoring, students provided their opinion about the main difficulties in participating in the activity, see Table 1 for more details. A proper direction given to students towards the right sources of information and their ability to explore the

Internet implied that only 31.8% of students found it challenging (Strongly agree/Agree) to search for relevant news, despite the large amount of information found on the Internet; and when looking for information about certain specific areas, only 31.7% (Strongly agree/Agree) found it difficult. Furthermore, paid news subscriptions required by certain sources was not perceived as a deterrent, since only 18.7% of the participants highlighted it (Strongly agree/Agree) as being such. The time spent on this activity was highlighted by 49.7% of the students (Strongly agree/Agree).

Table 1. Were these difficulties relevant in the development of the activity "News monitoring"?

Groups	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Too much information	14.3%	24.9%	28.6%	21.2%	10.6%
Difficult to find information in certain areas	8.5%	21.7%	38.1%	23.8%	7.9%
Time consuming	12.2%	11.1%	27.0%	31.7%	18.0%

Nevertheless, 88.3% of the students highly appreciated a directed filtering news platform that eased the search and identification of relevant news tasks (Strongly agree/Agree). See Figure 4 for more details.
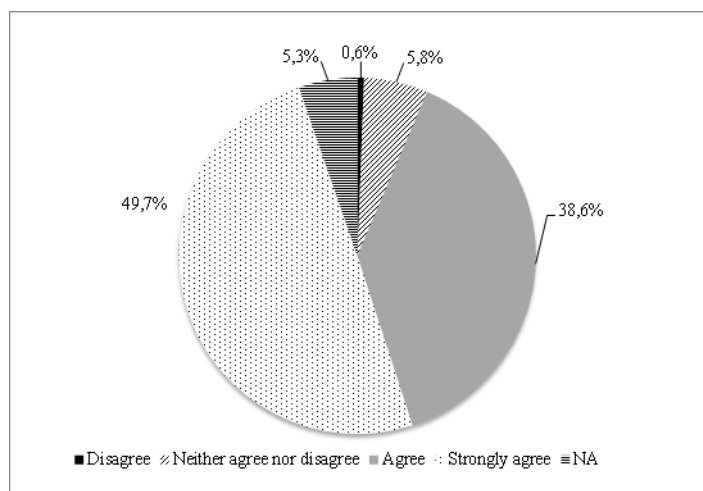

Figure 4. Student's interest in creating a directed filtering news platform

5. Conclusion and discussion

Based on our results, it is clear that ICT serves as an extraordinary tool to shape and enhance the learning environment. However, it has to be implemented in a proper manner to motivate students. We have proposed an educational activity to gain motivation and participation among students. The results of surveys, performed during our study, support integrating the Internet into development of educational activities. Furthermore, these activities should be oriented towards the use of portable devices such as mobiles, laptops and tablets with access to an eLearning platform.

The use of more traditional assessments of students' participation, such as compulsory activities and exams, has a critical impact on their engagement and motivation. As an example, in our case study, the Marketing groups showed higher motivation in class than the Finance groups. The main

difference was that while the activity was considered optional for Marketing students, it was necessary for them to prove engagement in news identification and analysis by taking an active position in a blog; compared to the experimental group in Finance, where the activity was compulsory, and to the control group in Finance, where the news monitoring activity was not developed. Results point to some form of compulsory activities contributing to higher engagement levels.

While this study was limited to students in Finance and Marketing courses which are Business disciplines, we recommend that further research be conducted to test the applicability to other subject areas such as the Sciences, Literature and the Arts. Additionally, we recommend that similar studies be performed with larger sample groups and with students in other countries.

Finally, being directed to the right sources of information and their ability to explore the Internet was a key demand of students in order to reduce search time and to access relevant material. A tool for automatically searching and screening for relevant news would improve student motivation. Thus we suggest that a future line of research could be to test this activity using the *iNotitium* platform.

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