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DESCRIPTION

The *International Journal of Educational Excellence* (ISSN 2373-5929) is a multidisciplinary scientific journal whose main objective is the dissemination of studies that provide answers to the main educational scientific and social problems present in higher education, in order to achieve excellence quality in all their areas. Papers will be welcomed, regardless of the subject area to which they belong as long as they entailed a contribution, innovation or breakthrough in the development of models of teaching or scientific research in the scientific world which lead to a social improvement. Research work performed in other educational levels may also be considered, if they demonstrate a strong and justified relationship to higher education. All papers submitted for publication must be unpublished and originals, and should not be under any evaluation procedure for publication in other journals. Theoretical work as well as work based on field studies and empirical laboratory experiments are accepted. All kinds of strategies and methodological approaches may have been used for the study. They have to comply within the parameters of current scientific and technological research. The review criteria and selection process will take into account mainly the quality of the work under consideration: if it makes a significant contribution to the object of interest, main interests of the journal and if it offers a breakthrough or significant contribution to the current scientific knowledge and, ultimately, if it contributes to the progress of our society. This journal is of free and direct access (Open Access, OA), and it serves the international scientific community and open knowledge. The journal is digitally published in order to keep all the features of traditional print journals. Articles will appear in PDF format, conveniently typeset and numbered as classical style journals. Therefore, it is our intention to facilitate their distribution and their scientific citation in accordance with all existing highest standards. Additionally, for the reader’s convenience chapters of the book can be printed in their full version as well as can be accessed in this digital format, such as e-book. This publication takes advantage of newly implemented technologies in order to facilitate publishing and distribution, at the same time that takes into account the ecological aspect of paperless publishing. Nor can we forget the specific possibilities offered by electronic publishing, such as the quick and easy access to any item of each number by simply selecting it from the start index or by identifying hyperlinks that can be added by the authors to their articles.

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**IDENTIFICATION AND ACCESS TO THE JOURNAL**

The journal is named *International Journal of Educational Excellence*, and it is abbreviated IJEE. Its ISSN (International Standard Serial Number) number is 2373-5929. For cataloging, it should be referred to as International Journal of Educational Excellence (IJEE): ISSN 2373-5929. Access to the journal may be performed from the main web address: http://www.suagm.edu/umet/oa_pe_edu_ijee.asp

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The International Journal of Educational Excellence (IJEE) is open to all scientific articles which provide answers to the main educational and scientific problems currently impacting higher education with the purpose of achieving quality excellence in all areas. Papers will be welcome, regardless of the subject area to which they belong, as long as they entail a contribution, innovation or breakthrough in the development of models for teaching or scientific research within the university environment leading towards social improvement. Research work performed in other educational levels may be also taken into account, as well as they provide an adequate justification and a valid relationship with higher education issues. All papers submitted for publication must be unpublished and original, and should not be under evaluation for publication in other journals. Theoretical work as well as those based on field studies and empirical laboratory experiments contributions, are accepted. All kinds of strategies and methodological approaches may be employed; however the selected method for each research has to be in compliance within the parameters of current scientific and technological research. The review criteria and selection process will mainly assessed the quality of the work under consideration in terms of the following criteria: significant contribution to the object of interest of the journal, a breakthrough to the current scientific knowledge and, ultimately, the contribution to the progress of our society.

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At present, the rules of APA citation are widespread in the field of social research, and its style is the most currently used to cite sources in this area. Therefore in case of any doubt regarding citations, we recommend consulting the *Publication Manual of the American Psychological Association* (6th edition), where it multiple examples of formats of research papers, text citations, footnotes, references, etc. can be found; here we have offered only general guidelines.

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ICT TRAINING REQUIREMENTS IN HIGHER EDUCATION: A CASE STUDY OF TRAINING PROGRAMME FOR THE DIDACTICAL USE OF WEB 2.0 APPLICATIONS

María Mendieta Baltodano

LEARNING STRATEGIES IN RELATION TO ACADEMIC PERFORMANCE IN A NURSING DEGREE: A CASE STUDY

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A NEW THEORETICAL CONSTRUCT IN THE CONCEPT OF SELF-REGULATED LEARNING

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INFORMATION AND COMMUNICATIONS TECHNOLOGIES (ICT) AND PRE-SERVICE EDUCATION PROFESSIONALS: A CASE STUDY OF MOTIVATION AND KNOWLEDGE

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FOREIGN LANGUAGE TEACHING AND LEARNING IN A READING COMPREHENSION AND WRITING ONLINE MODULE: A HIGHER EDUCATION ANALYSIS

Carolina Arrieta Castillo, Nicole Roberts, Paola A. Palma Rojas and Suly M. Corredor Sánchez
ICT Training Requirements in Higher Education: Case Study of Training Programme for the Didactical Use of Web 2.0 Applications

María Mendieta Baltodano

Abstract: This article describes the proposal of an ICT training programme for the didactical use of Web 2.0 applications for the professoriate at the Multidisciplinary Faculty of Carazo (FAREM-Carazo, for its Spanish acronym). The study is approached from a descriptive/interpretive perspective, starting from the findings of diagnostic research which examined the professors’ views about the educational/organizational workings of ICT at the National University of Nicaragua (UNAN-Managua, for its Spanish acronym). The results revealed the needs demonstrated by the professoriate regarding ICT training. This led to the design of a training programme structured in three units: (a) ICT in the new context of higher education; (b) online information searches, and; (c) educational applications of Web 2.0, aimed at developing teachers better prepared for the 21st century.


1. Introduction

In today’s society, information and communications technology (ICT) is central to all processes of information and communication, especially those which are of a telematic nature. This is true to such an extent that society in
this century has been named "information society", "the online generation", "generation i" (where "i" refers to Internet and/or information), and even "the WhatsApp generation." Or, in the words of professor Manuel Castells (2001), "network society" or "the information age". Or as Echevarría (2000) notes, new technologies allow a new social setting, a third environment, which is clearly distinguishable from natural or urban settings. These profound changes are even more acute in higher education, going from a model centred on the teacher to a model in which the student becomes the principal focus. As noted in the arguments of Segura & Gallardo (2013), in education, the use of technology has marked a before and an after in teaching/learning processes. Such technology has fostered new teaching methodologies, it has established new ways in which the participants of the learning process relate to one another (teachers and students), and it has modified the roles which they take within this process. Del Moral y Villalustre (2012) point out that the technological and didactical capacity of teaching staff is becoming an imperative for coping with new teaching/learning situations developed on virtual platforms with the support of technological tools. Cabero & Gutiérrez (2015) tell us that to use ICT is to rethink the educational institution because it implies a change from theoretical to practical, as affirmed by Soto (2010); one of the big challenges faced by education is, without any doubt, the use of information and communications technology, something which should be considered as a techno-didactical tool for strengthening teachers and, for giving meaning to and redefining knowledge acquired in the daily learning of pupils in an educational context. It is precisely in this new dilemma that ICT coexists as a support tool in the teaching/learning process, generating new environments where teachers must necessarily carry out new functions.

Taking into account the aforementioned factors we coincide with Tascón (2003) in that the utilization of ICT, the management of learning environments, and changes in methodology, demand a change of mentality and training practices. Furthermore, such changes should not be limited to the instructive side of teaching, but should also focus on the new roles of a teacher: (a) to promote an organizational climate; (b) a guide; (c) a motivator; (d) a source of information; (e) to promote the use of ICT; (f) a knowledge transmitter; (g) a person able to evaluate and provide resources to students; (h) a resource creator (design and development); (i) a fellow learner; (j) a tutor; (k) a researcher; and finally (l) a person able to update course content. Furthermore, according to Volman (2005) and Aguaded & Pérez (2007), teachers should take on a more dynamic role as a tutor, a mediator, an adviser, a counsellor, a problem developer, a work group coordinator and, an organiser of experiences.

Such an outlook implies an alarming situation for teaching professionals, who are called upon for innovation in education, precisely because in order to satisfy the educational needs of students in new learning
environments and settings, be they face-to-face, partial-presence, or distance learning; teachers will have to turn to the use of ICT as today’s reality leaves little choice. This situation should be addressed by teacher training institutes in their choice between assuming a leading role in shaping education or being left behind amidst incessant technological change (UNESCO, 2004). Considering this, training for teachers is very important, owing to the large influence and frequent use of ICT in the three elements of learning (knowledge, skill, and attitude), according to the indicators created by Wen & Shih (2008), but it also implies a great challenge. Therefore, updated training in ICT for teachers is a priority, to acquire technological expertise, digital competencies, and positive attitudes which allow the adaptation of their teaching to the demands of the information society, and also as an opportunity to rethink teaching practices on an individual and collective level (Gómez, 2001; Tilve, Gewerc & Álvarez, 2009). It is not enough just to know, but rather, that it is necessary to know in a way which is linked to the profound social and economic changes underway, to new technologies, to new industrial and institutional organization, in a complex and interdependent growing world, which wants people with restless creativity and innovative capacity, with a critical, reflexive and participative spirit.

In light of the above theoretical foundations, and conscious of the current day importance of ICT training for teachers at the National University of Nicaragua (UNAN-Managua), this study was conceived, with the purpose of presenting the proposal for a teacher training programme aimed at facilitating the didactical use of Web 2.0 applications. This started with the evaluation of the technological competencies of the professors at the Multidisciplinary Faculty of Carazo (FAREM-Carazo), at UNAN-Managua.

2. Context of the Research and Goals

Nowadays we have gone from a type of teaching based on an industrial society to one based on knowledge and information, one which promotes learning to learn, lifelong learning, the development of competencies, learning to live in a diverse society, as well as moral and ethical constructs (Hernández, Martínez, Martínez & Monroy, 2009). It is evident that within this framework, education becomes a most interesting tool for the development of educational competencies in society, generating a series of demands for the educational system to fit itself into a world of new challenges (Barragán & Buzón, 2004). According to the recommendations of the European Parliament and the Council (2006), digital competence is established as one of the key skills for lifelong learning for citizens of the 21st century, to guarantee active participation in society and the economy, within the European framework.
Access, management, and the correct use of technological resources are thus seen as fundamental for the professionalization of university teaching staff since they allow access to updated repositories of information which facilitate the continuous training of the faculty. Considering these points, higher education needs and demands the modernization of teaching staff facing the diversity of technological applications of Web 2.0 which should be incorporated into the different contexts of higher education and that, for the purposes of this study, are included in the New Educational Model at UNAN-Managua. This model promotes the advantages and use of ICT for being a highly valued educational resource. It implies the need for competent, modernised training in ICT, also recognising international academic demands which require highly competent teachers who are able to perform as virtual tutors in the age of digital natives (Prensky, 2010), with the sole intention of being a better guide, a better advisor, and a better mentor, given that in today’s society of information and communication, university students find themselves increasingly involved in autonomous or collaborative learning processes which require active methodologies to facilitate the integration of social software into the academic curriculum (Meneses & Galán, 2009; Schworm & Gruber, 2012).

Students will soon arrive at universities expecting a new style of teaching, one adapted to the online routines of their daily lives. Technology which the academic world considers revolutionary is ordinary for today’s alumni (Thompson, 2007). Prendes (2010) notes that the inherent changes in the process of adaptation which we are under can be summed up in three central ideas: (a) competitiveness of universities and their students: promoting better student performance, (b) quality control: in this new framework, supervision extends to all areas and agents involved. Quality is sought in qualifications (for their accreditation), in teaching and research (the role of quality assurance agencies), and also in the quality of learning at university, which implies a revision of methodological strategies. And finally, (c) the reorganization of university studies: university studies are structured around a degree (which is a more generalised study) or a postgraduate qualification (which is a more specialized study) which adds to the fact that ICT notably accelerates the tendency towards internationalization, precisely because in the field of higher education, the faculty is influenced by intensive use of ICT and incorporation of distance learning and interactive technologies, creating the need for continuous innovation in educational models and training regarding ICT.

In accordance with the contributions of these authors, from an introspective vision in the context of public higher education in Nicaragua, nowadays as teachers at UNAN-Managua we are aware of profound transformations in higher education at an international level, transformations deeply rooted in technological advances which change human relationships as
well as interpersonal and group-based communication (Cabero, Cataldi & Lage, 2010; San Martín, Cabrera, Abalos & Gómez, 2015), and which irremediably distort our sphere of action. Thus, it is essential to stimulate training programmes that promote the use and application of Web 2.0 technologies in teaching. On a practical, technical, and curricular level, this involves designing teacher training in digital literacy regarding Web 2.0 in higher education, a responsibility shared between social, academic and government actors as the main agents of change, innovation and transformation in this field.

To be successful in pedagogical innovation, UNAN-Managua has incorporated ICT into its Educational, Regulatory and Methodological Model for Curricular Planning 2011. "Information and Communications Technology (ICT) will not only be used to improve teaching practices in the classroom, but also to permit students other learning scenarios" (UNAN-Managua, 2011). Also, to be aware of an inclusive vision in university education, from a humanistic and scientific conception of the world. This is achieved through an educational model focused on people, with an institutional vision of autonomous, public higher education, a national and international standard in the training of professionals, and a leader in scientific production and technology in Nicaragua (UNAN-Managua, 2015). This vision assumes that education in the 21st century is subject to (a) the challenges in higher education for the 21st century; (b) the post 2015 development goals, and; (c) global, national and regional trends. Taking the above approaches as a reference, this study was conceived in the context of the Multidisciplinary Faculty of Carazo, FAREM-Carazo, at UNAN-Managua. This faculty, located in the city Jinotepe, opened its doors to the population of the southern region of Nicaragua under the name Carazo Regional University (CUR-Carazo, for its Spanish acronym) in 1991 (Pérez, Mendieta & Gutiérrez, 2014). Since then it has developed as an entity for social transformation and innovation, contributing to a higher quality of education for all young people in the southern region of the country.

Given the large social responsibility for the faculty at FAREM-Carazo in offering adequate, quality attention to the thousands of young people who demand higher education, and according to the most pressing needs in ICT expressed by these teachers, this proposal has been conceived. It corresponds to an ICT training programme, supporting Web 2.0 applications, with strengthening the ICT skills of the faculty at FAREM-Carazo being central and fundamental to its aim. To achieve this, the proposal takes advantage of the educational potential of Web 2.0, with the intention of helping participants to become 21st century teachers who ease the process of learning and strengthen creativity in their students, who design and develop learning experiences in line with the society of knowledge in which we find ourselves, and who also promote professional values and ethics as digital citizens. It also
aims towards (a) increased efficiency regarding procedures to be followed by the teaching staff for the didactical use of ICT resources; (b) reinforcing university-society-business relationships; (c) educational optimization of ICT applications for the teaching staff and of ICT resources available to the faculty; (d) updated training for teachers within the context of the European Framework of Higher Education (IEEE); (e) development of ICT competencies on practical and advanced levels, and finally; (f) awareness relating to digital citizens.

3. Methodology

This study is approached from a descriptive/interpretive position, for which it used the findings produced by the diagnostic research conducted by Mendieta, Cobos & Vázquez (2015) on the faculty’s perception of ICT’s educational/organizational function at FAREM-Carazo, UNAN-Managua. The study also used participant observation (Malinowski, 2009). From the position adopted by Benguría et al. (2010), participant observation is very advantageous in areas such as social education and psychology, when it is necessary to study aspects of behaviour: student-teacher relationships, the relationship between the use of specific educational technology and learning, the relationship between grades and subjects etc. Considering the contributions of the above mentioned authors, regarding participant observation as a method for acquiring information about a group as the subject of study, it is possible to infer that this approach effectively allows the detection of a problem or need when we as researchers become part of that group being studied. In this way the group being studied is also a source of information.

4. Results

In the following lines the thematic plan corresponding to this training proposal is presented. It was the result of an exhaustive process of research which turned to different sources to obtain information, and techniques to contrast and position that information. In the end this allowed a definitive training proposal to be decided through the thorough selection and revision of content related to each unit, and reflecting where the ICT training needs relating to 2.0 technology were most felt and expressed by the study’s subjects, the teaching staff at Facultad Regional Multidisciplinaria (FAREM), Carazo (FAREM-Carazo), Universidad Nacional Autónoma de Nicaragua-Managua (UNAN-Managua).
4.1. Thematic Plan for the Programme

<table>
<thead>
<tr>
<th>No</th>
<th>Unit</th>
<th>Contact Hours Conferences and Expositions</th>
<th>Practical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>ICT in the new context of higher education</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>II</td>
<td>Online information searches</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>III</td>
<td>Educational applications of Web 2.0</td>
<td>8</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15</td>
<td>25</td>
<td>40</td>
</tr>
</tbody>
</table>

Table 1. Thematic plan for the training programme

4.2. Specific Objectives of the Programme

<table>
<thead>
<tr>
<th>No</th>
<th>Conceptual</th>
<th>Procedural</th>
<th>Atitudal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strengthen participating professors’ knowledge regarding educational use of ICT in teaching/learning processes.</td>
<td>Balance the differences in level between participating professors’ knowledge regarding educational use of ICT in teaching/learning processes.</td>
<td>Cooperation in strengthening participating professors’ knowledge regarding educational use of ICT in teaching/learning processes.</td>
</tr>
<tr>
<td>2</td>
<td>Develop amongst the professors a culture of continuous self-teaching of ICT through online search tools which enhance their academic and professional performance</td>
<td>Boost the culture of continuous learning amongst the professors in the light of ICT, allowing an enhancement in their overall development on a practical, technical, and curricular level through the implementation of online search mechanisms</td>
<td>Encourage the faculty’s motivation for a continual deepening of their understanding of ICT through reasoned and certain information searches which can be taken advantage of in terms of education and training.</td>
</tr>
<tr>
<td>3</td>
<td>Recognise the educational value of ICT through the development of training activities supported by Web 2.0 applications.</td>
<td>Put into practise the different uses and educational applications of ICT through Web 2.0 applications</td>
<td>Value the importance of ICT in the society of knowledge and information from an educational perspective, with the support of Web 2.0 applications.</td>
</tr>
</tbody>
</table>

Table 2. Specific objectives of the training programme.
5. Conclusions

The proposed training programme will be implemented in the first trimester of 2016. It will involve a sample of 25 professors distributed as follows: 5 professors from the Department of Science, Technology and Health; 10 professors from the Department of Economic and Administrative Sciences, and; 15 professors from the Department of Education and Humanities at FAREM-Carazo. The professors will be selected by the directors of their corresponding academic departments, however those selected should fit the following profile: be part of the teaching staff or be in the hiring process at FAREM-Carazo, have at least 2 years of experience in higher education, be between 23 and 45 years old, have a Master’s qualification or be actively studying in a Master’s programme in line with his or her speciality, have basic knowledge of English and word processing software, spreadsheets and presentation software, to have designed at least one academic course on the virtual platform Moodle, be proactive and an independent learner, and demonstrate availability and willingness to help with the training programme while it is under way. They should also be willing to complete activities assigned by the facilitating team and show institutional commitment in terms of passing on knowledge acquired through developing their teaching practice through the use of ICT.

It should be noted that for the design of this training proposal, regulations concerning the design of continued education courses at UNAN-Managua have been observed. Hence, once the training programme has been completed, the professors who took part will receive a certificate of participation granted by the department of Postgraduates and Continued Educational FAREM-Carazo.

The units to be addressed in the training programme are: ICT in the new context of higher education, online information searches, and educational applications of Web 2.0. Within these are also addressed, amongst others, the following areas: forms of online communication and their evolution, advanced information searches, ethics and responsibility of digital citizens, new communication strategies through digital applications of Web 2.0, blog creation using Blogger, embedding videos, Scribd documents, SlideShare presentations, creating a Mindomo account, mind-map design, and information and practise in creating presentations in Prezi.

<table>
<thead>
<tr>
<th>Competencies to be developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knows about the evolution of the Web</td>
</tr>
<tr>
<td>Differentiates between Web 1.0 and Web 2.0</td>
</tr>
<tr>
<td>Values the didactical use of Web 2.0 applications</td>
</tr>
<tr>
<td>Identifies technological teaching tools for their students</td>
</tr>
<tr>
<td>Identifies synchronous and asynchronous communication</td>
</tr>
<tr>
<td>Knows about technological systems employed in education</td>
</tr>
</tbody>
</table>
Searches for information online
Looks for new methodologies, strategies and techniques using ICT
Selects and criticises online information
Knows about online security
Employs ethics in searching for and selecting information online
Knows about methodologies based on collectivism
Plans information employing ICT
Uses Youtube
Designs virtual learning environments
Controls different online learning platforms
Creates Wikis and blogs to further the learning of their students
Uses Wikis for the creation and elaboration of texts
Designs presentations using SlideShare
Creates mind-maps using Mindomo
Uses technology for self-teaching
Uses ICT as a means of professional development
Uses social networks to maintain relationships with colleagues and students
Works on their presentations using Prezi
Employs information ethics

Table 3. Competencies to be developed in the training programme

Although the inclusion of ICT in the higher education system in Nicaragua has been slow, nowadays it is possible to confirm that the use of these tools has increased in teaching and administration amongst the faculty, as pointed out by the Institutional Strategic Plan at UNAN-Managua, which establishes that, the academic management of new information and communications technology necessarily implies modifying the inputs, processes, and products of higher education. Online and in-person training for teachers, researchers, students and administrators is also imperative to ensure full use of ICT (UNAN-Managua, 2014).

Credible proof of this is the realisation of innovative ICT suggestions by professors at FAREM-Carazo, who demand up-to-date, continuous training which genuinely contributes to their competency regarding digital capabilities on a practical, technical, and curricular level, and which allows them to perform better for their students.

In this sense, the faculty is acutely aware of the need for educational innovation, which is not about breaking away from pedagogical foundations but rather adapting those foundations with technology, leading to significant improvements in teaching and management, and encouraging a change in the profile of the university student (Esteve & Gisbert, 2012). In this sense, we coincide with Ander (2005), in pointing out that, having already entered the 21st century, the analyses and debates about the use of technology have gone beyond the debate about whether it is good or bad for bettering teaching
practice. In the information society, the use of new technology in the teaching/learning process is widely accepted.

In view of the diverse technological applications of Web 2.0, and the needs in ICT training as expressed by the teaching staff at FAREM-Carazo, an ICT training programme with Web 2.0 applications has been designed with the intention of strengthening digital competencies in practical, technical, and curricular areas, on basic and advanced levels. For this purpose, three didactical units were defined as part of the domain of theoretical knowledge of ICT and its relationship to the current university curriculum according to the guidelines presented by the European Higher Education Area but adapted to our context of action. In this sense the goal is to prepare teachers who are capable of understanding new technology both for supporting social development and for improving the economic productivity of Nicaragua.

Two units have also been defined with the intention of increasing ICT expertise on a practical and didactical level, to take full advantage of ICT resources available to the faculty and optimise their use. These units are: searching for information online and educational applications of Web 2.0, including the selection of applications for creating presentations, creating mind maps, creating files and the publication of those files with the goal of creating a virtual community between professors; to favour communication and management of information; to promote responsibility as digital citizens and security of information on the network.

Finally, the design of the proposed training programme was conceived in such a way that the results in the participating professors, once the programme is complete, will work towards the achievement of academic competencies in terms of methods, techniques, and new tools in the process of teaching/learning; administrative abilities, specifically related to developments in planning, organisation, management and control, and finally; social skills regarding interaction, i.e. in the achievement of abilities, interests, motives and ways of acting.

References


Learning Strategies in Relation to Academic Performance in a Nursing Degree: A Study Case

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Abstract: This study analyzes the association between learning strategies, academic achievement and time to reach university degree for nursing students. Learning strategies studied were cognitive, meta-cognitive and motivational. Academic achievement was evaluated through the following variables: academic credits, attempted credits, approved credits and cumulative academic index. The questionnaire (CEA-U, for its Spanish acronym) was used to explore how these learning strategies are associated with greater academic achievement. Pearson’s coefficient was calculated to evaluate the association between the CEA-U score and academic achievement. The sample was composed of 82 students from a university institution in Puerto Rico. The results of the study revealed significant differences between the use of learning strategies and gender, and between the use of strategies and academic achievement. The association between academic achievement and meta-cognitive strategies was positive and statistically significant. No statistically significant association was found between the use of learning strategies and time to reach university degree in nursing. These results demonstrate the pertinence of this study in university teaching to fortify curricula, improve academic achievement and reach academic goals in an established time frame using learning strategies which increase effectiveness in students.

Key-Words: Learning Strategies, Academic Achievement, Gender, Nursing Students, Study Time.

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1. Introduction

The major interest of universities during the last few years has been to offer the best academic programs with emphasis on the implementation of student learning evaluation to help students achieve their goals. This process in the university context has turned into a constant and irreversible one, as pointed out by Martin, García, Torbay and Rodríguez (2008). Evidence of this is the recent study published by J. Calderón Soto (2012), who studied the university student profile in Puerto Rico and found that factors like gender, age, retention rate, attempted credits and academic index, among others, influenced the achievement and time necessary to obtain a degree; which constitute the variables of interest in this investigation in relation to nursing students’ use of different learning strategies. Learning strategies are multidimensional and complex constructs, for which reason different authors have differing definitions. Weinstein and Mayer (1986) define strategies as conducts and thoughts students apply during learning with the purpose of influencing their coding process. Fernández (2008) defines learning as the individual’s preference when it comes to studying and learning. Brunner (2001) states that students learn by discovering in an active and constructive manner. We learn by observing through stimuli and emphasizing the way thoughts are stored and transformed in the mind, and how the latter infers and adapts to new contexts. Other authors agree that individuals have their own way of learning, which is not the same for everyone (Demirbas & Demirkan, 2007; Hernández-Pina, García-Sanz & Maquilon, 2004; Lashley & Barron, 2006). When we connect these concepts, we can interpret that learning strategies are the processes or mechanisms the individual uses to gain knowledge.

Recent investigations reflect that students’ learning is often by rote instead of through the use of strategies, and consequently their level of achievement is deficient (Gonzalez & Diaz, 2006). These results point towards the need to investigate the learning strategies university students use. In our study, we have analyzed three types of learning strategies, according to the Learning Strategies Questionnaire in University Students (CEA-U): cognitive, meta-cognitive and emotional.

The theoretical focus in relation to cognitive strategies emerged around 1970 and has been studied by different investigators. Beltrán (1995) defines them as intentional procedures which allow the subject to make appropriate decisions to face the processes which characterize the cognitive system. Ausubel (1981, 2002), exposed the Cognitive Theory of Significant Learning, in which we can see the individual student as a reactive processor of the information through organized systematic learning. The author establishes that learning is attained when the significance is found in itself within the structure of knowledge which allows for establishing relationships. The
cognitive theorist Brunner (2001) uses the theories of Vygotsky and Piaget as points of reference, who state that interaction is fundamental for learning, which is acquired starting at the preoperational phase, from age 2 to 7, and in a successive manner until age 11 to 15, at which point formal operations can be developed. Based on these theories, at age 16 the student has developed learning strategies to attain academic achievement.

In cognitive strategies, we pinpoint four factors (*organization*, *generative elaboration*, *anchor elaboration* and *memorization*). Organization refers to specialization, structure and study elaboration (Sternberg, 1986). Here, looking for principal aspects of the text and separating them from irrelevant parts is emphasized to construct informative units (Hernández García, 1998). The factor of *generative elaboration* refers to achieving deeper text comprehension in order to amplify and generate new information. The factor of *anchor elaboration* focuses on information in the text which connects to previous knowledge, based on experience, without elaborating further. The other factor is *memorization*, which includes strategies centered on the signifier rather than the signified, considered as a cognitive process when working with the text (González, Valle, Rodríguez & Piñeiro, 2002).

The second group of strategies we studied was meta-cognitive. Burón (1997) defines them as knowledge and regulation of our own cognition and mental processes: perception, attention, memorization, lecture, writing, comprehension and communication. Kurtz (1990) adds that these cognitive and mental processes participate significantly in the learning process. This strategy stresses knowledge of the objectives and relevant content, self-monitoring and evaluation of results. Among meta-cognitive strategies, *planning* refers to the use of control strategies prior to studying, and *reviewing* to actually performing the process when finished.

The third group is made up of motivational strategies. According to Beltran (1995) and Shulman (1989), effective learning depends on the existing conceptual structures of selected information on individual motivation. Additionally, we cannot continue to measure learning only by what we teach, but according to what the student interprets, comprehends and constructs based on what we teach. Motivation is a group of processes involved in the activation, direction and persistence of behavior (Valle et al., 2007). In this strategy, five factors were analyzed. The first factor is *implication*, which centers on research and focus on the activity. The factor of *focus on the positive* centers on the struggle against lack of enthusiasm and against stress, and attempting to associate studying to relaxing and pleasing settings. The factor of *applicability* seeks functionality and the application of studied content. The factor of *effort* is based on establishing goals and rewards associated to the area of study. Lastly, the factor of *gradual approximation* focuses on successive approximation to the studied area, both physically and mentally.
Another variable studied in our investigation, is academic achievement. This is defined as the progress the students achieve in terms of courses in the study program (academic success), whether they successfully achieve the required credits (attempted credits and approved credits) and graduation index according to trends in their area of concentration. Other analyzed variable was the gender (female and the men). Also analyzed the students who completed their college degree in nursing. The last variable studied is time to complete nursing degree, examined according to the time established by the institution of 4 to 6 years from initiation to culmination of studies.

The literature shows different ways to evaluate learning strategies and academic achievement. Investigations have studied learning strategies in university students at risk of dropping out in the first year (Romero, Martínez, Ortega & García, 2013; Escoliza, 2009 and Muñoz, 2005). Others authors have investigated the relationship between learning strategies and academic achievement in university students (Martín, García, Tobay & Rodríguez, 2008), as well as how this relationship differs according to gender (Rossi Casé, Neer, Lopetegui & Doná, 2010). These studies reveal that inadequate use of learning strategies result in low academic achievement, and the lack of learning strategies is the fundamental cause of academic failure.

Other investigations have shown that among first-year students, superficial focus, extrinsic motivation and rote learning predominate as learning strategies, and cognitive and meta-cognitive strategies are less common (Salim & Lotti, 2011; Cardozo, 2008). In another investigation, Sanjuán Quiles & Martínez Riera (2008) studied the construct of teaching-learning with regards to the interrelation of knowledge and clinical/community formation. Menderes (2010) studied the relationship between meta-cognitive learning strategies and academic achievement in university students. The results these investigations contribute are important because they confirm that the students see themselves as constructors of their learning process and fomenters of significant learning. Effective learning can become a reality if the students know the strategies they use to learn. Supervision helps students use meta-cognitive strategies, which allows students to be more successful in their academic career. Another authors report university students who use profound learning, with the ability to regulate their learning, intrinsic and meta-cognitive motivation, which helps them plan, revise and supervise the study process and attain significant learning (Almerich, Garfella Fernández, García & Rodríguez, 2011; Esquivel, Rodríguez & Padilla, 2009).

According to our review of literature, there is a consensus in different studies regarding the importance of learning strategies to attain academic achievement. However, there is disparity in some studies which have analyzed these variables. Cartagena (2008) states that academic achievement is the result obtained in relation to proposed objectives; while Díaz (2007) and
Santiago (2009) concur that the development of good study habits is slow and gradual, but is a road that leads to success. Our study pretends to contribute to the proposal of Otero, Nieves and Pérez (2007), who recommend the use of learning strategies not only in intellectual development, but also for personal development. Their study referred to constructivism, which focuses on three basic elements for the teaching-learning process: the student, the professor and the content. These authors state that learning depends on the student’s mental activity, which requires a level of maturity between theory and methodology. Moreover, they established that the professor helps construct meaning.

The goal of our investigation is to provide valuable information about the use of learning strategies in relation to academic achievement. We seek to encourage the inclusion of teaching strategies demonstrated to be effective in primary levels of university curriculum, given their contribution to better academic achievement. With this in mind, the specific objectives established were: to describe and compare learning strategies used by university students in relation to gender; to know, identify and compare differences in academic achievement in relation to learning strategies used by nursing students in their fourth year, and analyze the association between strategies and time to complete a university degree in nursing.

Studying learning strategies used by university students allows for strengthening academic curricula, revising support services for the students, improving academic achievement, and helping students reach their university degree in the time established by the study program. Specifically, the results of our investigation provide bases to propose curricular revisions consonant to the actual needs and characteristics of students, contributing to andragogical enrichment and proposing additional academic action.

2. Methodology

This is a descriptive investigation with a transversal design. The analysis was descriptive, using frequency and percentage measures. We analyzed whether there was a significant relationship between learning strategies, academic achievement and time to complete the nursing degree. This relationship was measured using Pearson (r) correlation coefficients for achievement rates.

2.1. Participants

The sample was composed of 105 students enrolled in a nursing program of a university institution in Puerto Rico. 78% of university students (n = 82) of both genders (63 female = 76.8% and 19 male = 23.2%). As inclusion criteria, participants had to be enrolled in concentration courses in the process of completing a nursing university degree in May 2014. Once
authorization by the Committee for the Protection of Human Beings in Research (IRB, using the Spanish acronym) was received, we proceeded to collect data for the study. The variable age followed this distribution: 37 subjects aged 26 or older (45.1%), 33 subjects under 24 years (40%), 6 subjects between ages 20 and 21 (7.3%), 27 subjects between ages 22 and 23 (32.9%) and 12 subjects between ages 24 and 25 (14.6%).

2.2. Instruments

For this study, we used the Learning Strategies Evaluation Questionnaire for University Students (CEA-U, for its Spanish acronym) by Martín Cabrera, García, Torbay and Rodríguez (2007), which is a reduced version of the following three tests: the Motivational Habits and Study Strategies Questionnaire, HEME; the Cognitive Learning Strategies Questionnaire, ECA and the Questionnaire of Control Strategies during Studying, ECE, by Hernández and García (1995), and developed after the NOTICE model (Hernández and García, 1991, 1994, 1998). The CEA-U is composed of a total of 57 items (Likert Scale) in a format of answers which range from 0 (not at all), 1 (seldom), 2 (sometimes), 3 (frequently) and 4 (always). We evaluated three scales: motivational strategies (27 items), cognitive strategies (22 items) and meta-cognitive strategies (8 items). The reliability analysis of the CEA-U and the three scales which composed it revealed an acceptable index, according to Nunnally and Burnstein (1994), who propose a minimum score of .70 as an acceptable reliability level. The results of the reliability index were high, with coefficients above .70 in the three strategy scales: cognitive (a=.87), motivational (a=.85) and meta-cognitive strategies (a=.83).

Additionally, we designed a questionnaire we called Template to Obtain Data from University Students who finished their University Degree in Nursing. In this template, we collected the data according to: student number (ID), gender, age, time to complete nursing degree, student’s academic achievement (academic success, attempted credits and approved credits, as well as the cumulative academic index) during his/her university career up to the attainment of a nursing degree. This data was provided by the Official University Study Register, considered a provider external to this study. They were not provided by the student but by an institutional official, which helps avoid mistakes and minimizes the common variance method effect.

2.3. Procedure

The CEA-U Questionnaire was administrated to nursing students from the selected sample that fulfilled the inclusion criteria and agreed to willingly and freely participate in the study during May 2014. We maintained privacy and confidentiality standards according to the provisions of the Informative Sheet. The designated official in the Registry provided academic achievement
data, and the investigator paired this data with the questionnaire of the 82 participant students. The data was entered into SPSS 20. The reliability of the instrument and scales were measured using the Cronbach Alpha coefficient. Absolute distributions and percentages for each variable were prepared, as well as contingency tables by gender, age and time to complete nursing degree.

We used the data in the Registry file to evaluate the variable of academic achievement using correlated analyses. Academic achievement in our investigation is defined by four study variables. In the first place, academic success, measured in terms of approval of nursing curriculum courses with a grade of A, B and C, from which data we made a distribution sample for this variable. Credits attempted are all of the credits the student enrolled in, notwithstanding program or grade received. Credits approved are all course credits passed with grades A, B, C, D, or P. To analyze the total attempted and approved credits by university grade nursing students, a distribution was first made classified in two rows: one for 60 to 125 credits and one for more than 125 credits. To attain a deeper analysis, we calculated the percentage ratio between the number of approved credit and the number of attempted credits as part of the study program. This was called the achievement range (AR), and we interpreted that the closer the resulting value was to 1.00, the greater the student achievement. In the fourth place, the analysis of the academic achievement variable incorporated the cumulative academic index by students upon graduation in May 2014, which fluctuated between 2.00 to 2.49 = C, 2.50 to 3.49=B and 3.50 to 4.00 = A. For the purposes of this study, the student’s academic achievement was considered high when all program courses were approved with outstanding grades or qualifications, his/her AR was close to or equal to 1.00, and he/she had an academic index of 3.50 or higher.

3. Results

According to the operationalized variables in the study as described in the previous section, 49 university students (59.8%) were classified as attaining high academic achievement. The other 33 participants (40.2%) were grouped into the low academic achievement column. Then, the items in the cognitive, motivational and meta-cognitive learning strategies scales were correlated with academic achievement in students. Table 1 shows the correlation between academic achievement and meta-cognitive strategies, which proved to be statistically significant ($r= .235$, $p<0.05$). However, no significant correlation was found between academic achievement and the other two learning strategies (motivational with $r= .172$, $p>0.05$, and cognitive with $r= .043$, $p>0.05$).
To elaborate on these results, contingency tables were drawn between nursing student’s academic achievement and the use of learning strategies. The distribution results in this exercise show that practically the complete sample that attained high academic achievement (93.9%) used meta-cognitive strategies frequently or always. However, a smaller percentage of students with low academic achievement (75.8%) used meta-cognitive strategies frequently or always. Additionally, we observed that the order of strategy use among high achievement students was: meta-cognitive (95.9%), motivational (88.7%) and cognitive (83.7%).

To identify the learning strategy with the most important relationship or association to greater academic achievement, we used statistical correlation based on Pearson’s coefficient (see Table 2). The correlation was low in some cases. Only one of the correlations was statically significant, between meta-cognitive strategies and cumulative GPA (r= .228, p<0.05). This result proves that there is a significant but low correlation between meta-cognitive learning strategies and academic performance in participating nursing students.

<table>
<thead>
<tr>
<th>Learning Strategies</th>
<th>Motivational</th>
<th>Cognitive</th>
<th>Meta-cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Achievement</td>
<td>.172</td>
<td>.043</td>
<td>.235</td>
</tr>
<tr>
<td></td>
<td>.123</td>
<td>.704</td>
<td>.034*</td>
</tr>
<tr>
<td></td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

Table 1. Pearson’s correlation coefficient between nursing student’s academic achievement and use of learning strategies.

<table>
<thead>
<tr>
<th>Learning Strategies</th>
<th>Motivational</th>
<th>Cognitive</th>
<th>Meta-cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Success</td>
<td>.068</td>
<td>-.028</td>
<td>.204</td>
</tr>
<tr>
<td></td>
<td>.545</td>
<td>.803</td>
<td>.066</td>
</tr>
<tr>
<td></td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Academic Performance Indicators</th>
<th>Motivational</th>
<th>Cognitive</th>
<th>Meta-cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Success</td>
<td>-.021</td>
<td>-.048</td>
<td>.228*</td>
</tr>
<tr>
<td></td>
<td>.852</td>
<td>.667</td>
<td>.040</td>
</tr>
<tr>
<td></td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

| Cumulative GPA                 | -.021        | -.048     | .228*         |
|                                 | .852         | .667      | .040          |
|                                 | 82           | 82        | 82            |

Table 2. Analysis of statistical correlations between academic performance indicators and use of learning strategies.
A detailed examination of the cumulative GPA distribution and the use of meta-cognitive learning strategies found that a higher percentage of the students with a cumulative GPA of 3.50 or higher, which represents a grade of A, often or always used meta-cognitive strategies. Only three students from this group (7%) indicated having used this strategy sometimes or never, while in this same category, eight students (20.5%) were found with grades of B or C (a GPA below 3.5).

To examine the use of learning strategies in greater detail, first order factors in the learning strategies were analyzed. In the meta-cognitive strategies or control scale, two factors are distinguished (planning and revising); these were included in a statistical correlation analysis by the academic performance indicators present in the study.

From Table 3, it can be seen that the meta-cognitive strategy factors had a statistically significant correlation with variables that measure academic performance. The planning factor of the meta-cognitive strategies scale had a significant correlation with academic performance ($r=.232$, $p<.05$), and the other factor, revision, showed a significant correlation with cumulative GPA ($r=.225$, $p<.05$). Specifically, the results point towards the fact that meta-cognitive strategies based on control strategies used before, during and after studying are significantly related to the academic performance and cumulative GPA of participating nursing students.

Another objective involved analysis of the use of cognitive strategies based on the first order factors of this scale and academic performance indicators. From Table 4, two cognitive strategy factors were drawn which had a statistically significant correlation with performance rate. These were: Memorization ($r=-.247$, $p<.05$) and Anchor Elaboration ($r=.236$, $p<.05$). The analysis also showed that the memorizing factor had a significant correlation with cumulative GPA ($r=-.294$, $p<.01$).
The other objective included was to identify and examine the association between the use of motivational learning strategies based on the five specific first-order factors of the scale with relation to the academic performance of participating nursing students. Correlations based on the Pearson coefficient were used. Table 5 shows that the only factor among the motivational strategies that showed a statistically significant correlation with the students’ academic performance was applicability (r=.229, p<.05). Specifically, this points toward the fact that motivational strategies based on the search for the functionality and applicability of the contents studied correlated significantly with the global academic performance of participating students at the end of their last year. There was no significant correlation among the self-reinforcement, implication, association and gradual approximation factors.

### Table 4. Analysis of statistical correlations between cognitive strategy scale factors and academic performance indicators.

<table>
<thead>
<tr>
<th>Cognitive Strategy Scale Factors</th>
<th>Academic Success</th>
<th>Performance Rate</th>
<th>Cumulative GPA</th>
<th>Academic Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.002</td>
<td>-.016</td>
<td>-.011</td>
<td>.053</td>
</tr>
<tr>
<td>p</td>
<td>.987</td>
<td>.887</td>
<td>.921</td>
<td>.635</td>
</tr>
<tr>
<td>n</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

| **Generative Elaboration**      |                  |                  |                |                      |
| r                               | .055             | .019             | .099           | .165                 |
| p                               | .623             | .862             | .376           | .138                 |
| n                               | 82               | 82               | 82             | 82                   |

| **Anchor Elaboration**          |                  |                  |                |                      |
| r                               | .153             | .236*            | .172           | .186                 |
| p                               | .171             | .033             | .122           | .094                 |
| n                               | 82               | 82               | 82             | 82                   |

| **Memorization**                |                  |                  |                |                      |
| r                               | -.209            | -.247*           | -.294**        | -.188                |
| p                               | .059             | .026             | .007           | .091                 |
| n                               | 82               | 82               | 82             | 82                   |

### Table 5. Analysis of statistical correlations between motivational strategies scale factors and academic performance indicators.

<table>
<thead>
<tr>
<th>Motivational Strategies Scale Factors</th>
<th>Academic Success</th>
<th>Performance Rate</th>
<th>Cumulative GPA</th>
<th>Academic Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-reinforcement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.030</td>
<td>-.018</td>
<td>-.146</td>
<td>-.065</td>
</tr>
<tr>
<td>p</td>
<td>.791</td>
<td>.870</td>
<td>.195</td>
<td>.564</td>
</tr>
<tr>
<td>n</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

| Implication                          |                  |                  |                |                      |
| r                                    | .087             | .048             | .184           | .205                 |

38
Table 5. Analysis of statistical correlations between motivational strategies scale factors and academic performance indicators.

<table>
<thead>
<tr>
<th></th>
<th>p</th>
<th>n</th>
<th>r</th>
<th>p</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Association</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>.441</td>
<td>82</td>
<td>.667</td>
<td>82</td>
<td>.100</td>
</tr>
<tr>
<td>n</td>
<td></td>
<td>82</td>
<td></td>
<td>82</td>
<td></td>
</tr>
<tr>
<td><strong>Applicability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.046</td>
<td>.682</td>
<td>-.066</td>
<td>.558</td>
<td>.558</td>
</tr>
<tr>
<td>p</td>
<td>82</td>
<td></td>
<td>82</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td><strong>Gradual Approximation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>-.039</td>
<td>-.039</td>
<td>-.023</td>
<td>-.075</td>
<td>.044</td>
</tr>
<tr>
<td>p</td>
<td>.727</td>
<td>.836</td>
<td>.504</td>
<td>.692</td>
<td>82</td>
</tr>
</tbody>
</table>

With the intent of corroborating the identification of the learning strategies scale factors that are being correlated with academic performance, a regression analysis was conducted. From this exercise, a single model was obtained, with a determination coefficient of $R^2 = .265$. The results of the Analysis of Variance (ANOVA) carried out to evaluate the significance of the model ($F= 2.266, p= .020$), reveal a value of $p<.05$, indicating a significant correlation between the variables. Specifically, the cognitive strategy of Memorization ($t= -3.296, p<.01$) and the meta-cognitive strategy of Planning ($t= 2.049, p<.05$) were the only two factors that correlated significantly with academic performance. The relationship between memorization and academic performance was negative, which indicates that academic performance increases as memorization decreases. Meanwhile, the relationship between planning and academic performance was positive, which suggests that when this studying control strategy is implemented, the odds of improving academic performance increase.

Also, we sought to describe and compare the learning strategies used by college students according to gender. A descriptive analysis of median scores was conducted for each of the strategy scales included in the CEA-U. These scores were approximated to 3.00, which indicates that students often use the three learning strategies (motivational, cognitive and meta-cognitive). However, different patterns in the use of these learning strategies are observed with respect to gender (see Table 6). In light of the higher arithmetic medians, females use meta-cognitive learning strategies ($\bar{X}= 3.30$) more often, while males regularly preferred cognitive strategies ($\bar{X}= 3.11$). However, this difference was not statistically significant ($p>.05$).
Another of our objectives was to compare and describe the academic performance of students according to gender. To analyze the data concerning academic performance, three variables were used: academic success, performance rate and cumulative GPA. As indicated at the beginning of this section, the distribution of students in each one of these variables, allowed for their classification as either high or low academic performance students. As can be seen in Graphic 1, the majority of students from both genders showed a high level of academic performance (high performance) and passed all program courses with outstanding grades; their AR was close to or equal to 1.00, attesting to their success attaining attempted credits. 61.9% of the female group had a GPA of 3.5 to 4.0, compared to 52.6% of the male group. However, statistical analysis revealed that this difference is not statistically significant (r = -0.080, p > .05).

Table 6. Median score of learning strategy scales by gender among nursing degree college students, 2014.

<table>
<thead>
<tr>
<th>Learning Strategies Scale</th>
<th>Gender</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Motivational</td>
<td>2.98</td>
<td>2.84</td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>2.97</td>
<td>3.11</td>
<td></td>
</tr>
<tr>
<td>Meta-cognitive</td>
<td>3.30</td>
<td>3.00</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Academic performance by gender of participating nursing students
Regarding *academic success* by gender, there was a practically similar distribution between both female and male participants, revealing that around 42% of each group managed to approve all nursing program courses with grades of A, B or C (females with 42.9% and males with 42.1%). Comparing these results, academic performance based on course approval did not change with respect to gender.

To examine the academic performance rate by gender, a percentage distribution was prepared where both genders classified with high scores. However, the percentage of female was slightly higher at 85.7%, in comparison with males at 84.2%. Upon examining the distribution of performance rate without segregating for any variable, it can be seen that 70 of the 82 individuals (85.4%) attained a high performance rate, while 12 individuals (14.6%) showed a low performance rate.

Cumulative GPA distribution by gender was analyzed and found to be higher in female than males. In 54.0% of the cases, females reached a cumulative GPA of 3.50 or higher, while for males the figure is 47.4%. This difference was not statically significant, $r = -.025, p > .05$. Upon examining total sample distribution, it was observed that 43 of the participants, or 52.4%, had a cumulative GPA of 3.50 or higher. Meanwhile, 39 participants, or 47.6%, had a GPA under 3.50.

Another of our objectives was to analyze the association between degree program completion time and the use of learning strategies. This was examined using statistical correlations based on the Pearson coefficient (see Table 7). This analysis revealed that there was no statistically significant relationship between the use of learning strategies and nursing degree completion time. Notwithstanding the time it took students to complete their nursing degree, the majority of the participants in the study tended to use the motivational, cognitive and meta-cognitive learning strategies appropriately when using them often.

<table>
<thead>
<tr>
<th>Learning Strategies</th>
<th>Motivational</th>
<th>Cognitive</th>
<th>Meta-cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion Time</td>
<td>$r$</td>
<td>$p$</td>
<td>$n$</td>
</tr>
<tr>
<td></td>
<td>.100</td>
<td>.089</td>
<td>.132</td>
</tr>
<tr>
<td></td>
<td>.373</td>
<td>.428</td>
<td>.237</td>
</tr>
<tr>
<td></td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

Table 7. Analysis of statistical correlations between time to complete nursing degree and use of learning strategies.

4. Conclusions

We concur with some research that had sought to explain the relationship between learning strategies and academic performance in college students. Firstly, we found that meta-cognitive strategies had a significant relationship with academic performance, as opposed to the cognitive and motivational strategies. Two factors were present in the use of meta-cognitive strategies: planning and revision. A significant relationship was found between planning and academic performance as well as between revision and cumulative GPA. This relationship points toward a student profile with characteristics centered on self-regulation before the learning process and one focused on how to use strategies and when to use them. These findings can be linked to the chosen sample, as it consisted of students finishing their college degree who have been able to develop more structured strategies and to reflect on their own learning process.

Our study showed that a student with high academic performance uses control strategies during and after studying. According to Kurtz (1990), it is possible to observe the effectiveness of the chosen strategies and change them according to the demands of the task.

In the cognitive learning strategies scale, a significant relationship was found between memorization and anchor elaboration with performance rate (PR). The profile of a high academic performance student shows more signifier-centered than signified-centered characteristics, since there was a negative or inverse relationship between the memorization strategy and the approval of attempted credits (PR).

Regarding the elaboration factor, information was found to be centered on data present in the text, and students more often related it to previous knowledge and also gave it personal significance. In a certain way, our study responds to what was exposed by Ausubel (2002), who argues that, when cognitive strategies are used, the individual is processing the information in a reactive manner through an organized and systematic learning process.

Among motivational strategies, only one factor takes in the applicability strategies that showed a significant relationship with global academic performance. This points toward the search for the functionality and applicability of the contents studied. According to Symons, Snyder, Cariglia-Bull and Pressley (1989), inefficient strategies are abandoned in favor of more suitable ones.

Our study found a profile of students who highly emphasize meta-cognitive strategies, highlighting the use of planning and revision strategies. We infer that the student established his/her studying goals and self-regulates himself/herself in the process in order to achieve significant learning, as per Ausubel (2002).
Regarding the cognitive strategies, rote-centered factors and elaboration show a systematic and organized profile that relates previous knowledge with personal meaning. Finally, among motivational strategies, strategies involving applicability were observed, which implies application in order to learn.

Analysis of the use of learning strategies by gender revealed different usages, but these differences were not significant. Females showed a greater use of meta-cognitive strategies, while the males showed a preference for cognitive strategies. Although the observed differences by gender were not significant, they suggest that there is still space to strengthen the use of learning strategies, particularly motivational strategies among male students.

Finally, the students that participated in the study demonstrated having used all three types of learning strategies to some degree. However, results indicate higher median scores in meta-cognitive and motivational strategies among females, in comparison to higher median scores in the cognitive strategies scale for males, while motivational learning strategies were associated to the lowest median score.

The results indicate that a successful nursing student is one who centers on meaning, relating it to previous knowledge, and who uses meta-cognitive strategies that help him/her plan, supervise and revise his/her own studying process, facilitating the achievement of significant learning.

With respect to academic performance, regression analysis showed that distancing oneself from rote learning and instead emphasizing planning leads to better academic performance.

One of the limitations found when conducting this study was that it intended to study the entire student population that would finish the nursing degree program on May 2014. However, we found that not all students who requested graduation fulfilled the necessary requirements by the established date, which caused a reduction in the sample. By the time the questionnaire was administered, not all of the students were present in class, which prevented the participation of the whole sample selected. We are aware of the limitations that self-report format questionnaires have. Among them, the student answers retrospectively, meaning that he or she recollects information about the way he/she works, and no direct measurement of actual task performance can be obtained. This study helps us identify the needs, areas to improve in the process of continuing education, and learning assessment, thereby also helping in the process of agency accreditation.

In order to broaden this study, we recommend its replication in other nursing schools and applying different statistical analyses in the factors of each strategy and on academic performance. Furthermore, we recommend offering learning strategy seminars in the first introductory courses of the curriculum, and including activities that promote student use of learning strategies.
Curricula focused on meta-cognitive strategies should be developed, since these help students establish clear goals in order to attain the degree in the shortest possible time.

Our research focus in the future will be to analyze learning strategies in other schools, relating them to learning styles as well as studying new admissions and those students about to finish their degree.

References


A New Theoretical Construct in the Concept of Self-Regulated Learning

Óscar García Gaitero a, Óscar Costa Román b and José Julio Real García b

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Abstract: The following work is a reflection based on extensive bibliographical study that attempts to shed light on the importance of self-regulated learning in educational contexts. In these last years, several terms have been used interchangeably to refer to self-regulated learning. Among these terms, particularly noteworthy are the terms of self-directed learning, autonomous learning, independent learning, and self-learning. Nonetheless, the term self-regulated learning is the one that has prevailed. Self-regulated learning is a type of technical learning in which the learner manages his/her cognition, behaviour, affection and motivations actively and responsively (all of which are systematically oriented to achieving the set goals. Self-regulated learning is a new construct that considers the various types of cognitive, metacognitive, motivational, contextual and behavioural variables, all of which lead to a quality learning process. Students who self-regulate their learning and studying processes are more active, effective and efficient and demonstrate substantially higher levels of motivation.

Key-Words: Self-Regulated Learning, Metacognition, Self-Perceptions, Creating Writing, Self-Analysis.

1. Introduction

It was not until after the 1960s that the black-box learning models was abandoned, in which considerable importance was placed on input (teaching) and output (outcome) variables, without considering the processes that are developed from within the person that is learning (teacher-centred approach).
In the 1990s, the concept of self-regulated learning arose as a new construct in response to the need to reference that process while at the same time integrating the variables and components that had been addressed traditionally in an isolated manner. In this sense, the consideration of self-regulated learning was not referencing both what to learn, as well as how to learn. In addition, learning was not only being seen as the way, but also the goal.

Self-regulated learning is a non-stop inquisitiveness. It comprises that power and motivation that needs to be instilled in a student so that he/she always seeks the best possible strategy in relation to studying in order to achieve the greatest efficiency in his/her studies and be an effective and efficient student (Roces and González, 1998).

In this way, students self-generate thinking, feelings and behaviours in order to achieve their learning goals and start and direct their actual efforts in order to acquire knowledge and abilities instead of delegating them to the teacher, parents or other agents that participate in the educational process.

2. Development

Self-regulated learning theories attempt to explain and describe how a student learns and attains achievements, regardless of apparent limitations in their mental abilities, their socioeconomic backgrounds and dependent on their educational environments. On the other hand, these theories also seek an explanation and description of why a student may fail in reaching his/her academic outcomes, regardless of apparent advantages in those particular features.

In contrast to previous viewpoints on learning, self-regulated learning theories assume that students can:

1. Increment personally their abilities to learn through the selective use of metacognitive and motivational strategies
2. Select proactively, structure and also create advantageous learning settings
3. Play an important role in selecting the way and amount of instructions they require

With the intention of clarifying further the concept of self-regulated learning, at least in practice, theoreticians have made comprehensive descriptions of the characteristics of students that self-regulate their learning, based on diverse empirical research results. Zimmerman (1986, 1990) affirms that a student can be described as self-regulated at the level in which it is metacognitive, motivational and an active participant behaviourally in his/her own learning processes.
In the majority of the theoretical definitions of self-regulated learning, characteristics of students that self regulate their learning is usually found (Boekaerts, 1999; Schunk and Zimmerman, 1994)

Suárez and Fernández (2004) propose seven fundamental characteristics of self-regulated learning:

Self-regulated learning represents the ultimate aim of learning. According to Zimmerman (2001), self-regulation constitutes the fourth and last phase of development of complex cognitive-motor skillsets. The first phase is the observation stage of an expert model. The imitation phase is the second stage, which can be accompanied by feedback provided by the model itself. The third phase is the self-control stage in which the student learns for him/herself how to execute the skillset in a routine manner. Finally, the self-regulation phase is the one in which the student adapts the skillset based on the changes of the context.

Self-regulated learning includes activities such as setting academic goals; supervising the corresponding execution; addressing and focusing on the instructions; using affective strategies to organize, encode and repeat the information to be remembered; setting up a productive work environment and using resources effectively; maintaining positive beliefs on one's own capabilities, the value of learning, the factors that influence learning and anticipated outcomes of the actions; and experiencing pride and satisfaction with one's own efforts (Zimmerman, 1994).

When an attempt is made to use the term of self-regulation as an explicatory construct, difficulties then occur. The difficulty arises when we consider that all cognitive actions have motivational consequences and that those consequences promote future self-regulatory actions; as such, there are bidirectional relations between learning and motivation (Boekaerts, 1996; Borkowski, Estrada, Milstead and Hale, 1989).

Self-regulated learning has a complex character. So much so that references are habitually made to a conceptualization that is limited on the aspects it includes.

It is in the actual student and not other individuals (parents or professor) where control over his/her actions must emerge, Zimmerman and Kitsankas (1997). This suggests that the selection or control criteria on the part of the individual are essential for exercising self-regulation.

Self-regulated learning involves a development process in its acquisition. For Roces (1995) due to the fact that self-regulated learning is basically made up of knowledge, beliefs, learning skillsets, it is malleable in response to environmental influences. As such, self-regulated learning is formed when learners are involved in the instructional experiences.

The development of a self-regulated learning process is related to the characteristics of the task. This characteristic is especially related to the
knowledge of the field of study, type of task and the interest in it on the part of the student.

In addition to the previous characteristics, others may also be addressed. According to Zimmerman (2001), the majority of the self-regulated learning definitions require the deliberate use of specific processes, strategies or responses on the part of the students in order to increment their academic performance. In all the definitions, the first characteristic assumed is that the students are cognisant of the potential utility of the self-regulated processes in the improvement of their academic achievement.

On the other hand, a second characteristic that is assumed in the majority of the self-regulation definitions is the self-feedback during the learning process. This feedback circuit refers to the cyclical process in which the students supervise the effectivity of their learning methods or strategies and respond to that feedback in a variety of manners, from changes uncovered in their self-perception to other more evident changes in their behaviours, such as substituting certain learning strategies with other ones (Zimmerman, 2001).

The third common characteristic is a description of how and why the students choose to use certain self-regulatory process, strategies and responses. It is noteworthy to mention that it is this characteristic of the motivational dimension of self-regulated learning in which theoreticians disagree greatly.

As of the 1960s, teaching variables (input) and learning (output) ceased to be important, and instead, the processes that occurred within the student came to the forefront.

The student is no longer a passive agent and becomes an active agent instead, who not only repeats information but actually perform operation on it. This led to two major focuses of attention and study. The first one concentrates on the way in which the student captures and organizes information. The second one is centred on the motivational processes of learning.

In the 1990s, both the cognitive and affective-motivational processes were considered in conjunction, and it is in this context, that self-regulated learning rose to the forefront.

The study of self-regulated learning has been carried out from various theoretical perspectives:

3. Operant

This approach underscores the reinforcement of external stimuli (the relation between behaviour and environment), based on the principles of Skinner. From this perspective, the behaviours of self-regulation must be methodologically linked to external, reinforced stimuli (self-reinforcement)
and the decision of individuals to self regulate themselves depends on the type of immediate or subsequent rewards they will receive (for example, self-reinforcement with the promise to go and watch a film in original version).

Mace, Belfiore and Huchinson (2001) explain that operant conditioning is the behaviour that occurs depending on the consequences that the environment produces. There are two basic types of reinforcement: positive and negative. Positive reinforcers are stimuli that increase the probability of a response when presented in a situation. Negative reinforcers are unpleasant stimuli, which, when suppressed increase the probability of the response. In both cases, the outcome is one and the same – increase the probability of the desired response.

When discussing self-regulation, those that support this theory usually maintain that self-regulating responses of a person must be linked to reinforcement stimuli and following this approach, the decision to self regulate depends on the dimension of immediate or delayed rewards and of the time interval that transpires between them.


With respect to the effects of the social and physical environment, operant researchers do not delve into how to develop the self-regulation capability, but they do underscore the importance of external factors in self-regulation learning.

4. Phenomenological.

This perspective underlines the importance of self-perceptions, organized in a self-concept, which develop the will of the student to persist in the various educational tasks.

It is important to note that from the phenomenological perspective, the subjective perceptions of students are the most relevant, in comparison with the objective of the physical and social environment.

According to McCombs (2001), the basic self role during learning is generating motivation to persist in the learning activities. This author suggests that the self structures are divided into global and specific domain forms. The global self-concept refers to the image pupils have of themselves as self-regulated students, while the concept of specific domain is defined as the perceptions of subjects regarding their ability to direct and control their motivation, cognition, affect and behaviour in specific domains. It is particularly interesting to point out that phenomenology places more importance on the subjective perceptions that the students have of the physical and social environment than on the objective nature of the same. As such, McCombs (2001), in accordance with the phenomenological tradition,
indicates the importance of the professor transmitting self-confidence to the
students in their learning capability.

Regarding the key self-regulation processes, these are centred on self-
evaluation, planning and goal setting, tracking, processing, coding and
strategy retrieval (McCombs, 2001).

The ideal age in relation to the capability of self-regulation is between
seven and eight years, which is when the self-system processes are developed.

In relation to the mode of acquiring the self-regulation capability, self-
regulated learning depends on the self-system processes. These begin to be
developed around the age of eight; as such, it is the ideal point in time to begin
working the aspects that make it up and reinforce positive self-perceptions
(McCombs, 2001).

5. Information Processing

This theory arises in the advent of computers and attempts to explain the
human cognitive operation, specifically, aspects such as storage and
information processing.

The approaches of this posture date from the 1930s, in the advent of
computers. These approaches emerged into descriptions and explanations on
the human cognitive operation and in particular, on the storage and processing
of information, which led to learning models in terms of hardware and
software components.

Subsequently, the consideration of the limitations of the mental
capability in the self-regulating process, and, as such, the need to automate
more basic aspects in order to release capability related with affective-
motivational aspects were incorporated into their models accordingly.

The primary principle of this approach is the capability of individuals to
receive information from their environment, the actual processing of that
information, and the transmission of a response in relation to that processing.

6. Socio-cognitive

The two basic ideas that sustain this theoretical perspective of self-
regulated learning were proposed by Albert Bandura based on his socio-
cognitive learning theory (Bandura, 1991).

The first one is that human motivation is determined by the expectations
of the individual in reference to his/her own capability to achieve positive
outcomes and to the outcomes that the individual can attain (Bandura, 1971,

The second one comes from the triadic theory of human behaviour
(Bandura, 1986, 1991), which establishes the interaction between
environmental, personal and behavioural variables. From this perspective,
learning self-regulation is performed via cognitive and affective processes, which are in interaction with environmental and behavioural factors.

**Volitional.** Although there is considerable controversy surrounding the distinction between motivation and willingness, various authors, such as Corno and Kanfer (1993) and Kuhl and Beckman (1990), have established the difference between both on the basis that the former (motivation) is targeted to the creation of the impulse or intention to act, while the latter (willingness) has an influence on the ongoing use of those intentions in order to carry out that behaviour.

On the other hand, it assumes that through training, optimized use of volitional control strategies is obtainable, which are internal and external self-control processes of the subject; as such, a greater level of self-regulation of the behaviour is thus achieved.

**Vygotskian.** According to the Vygotskian perspective, acquisition of self-regulation on the part of the student is obtained in interactions with adults and in subsequent phases, it is interiorized gradually, based on the next area of development. This interiorization process is improved via the "internal dialogue" the student conducts with him/herself and on the tasks to be performed (Vygotsky, 1964), and which eventually leads to knowledge, self-control and command of the environment.

**Cognitive-constructivist.** The cognitive-constructivist theory is based on various sources, such as Barlett (1932) and, in particular the constructivist theories of Piaget (1954). From this perspective, students are considered to inherently create their own theories and framework on learning and the learning components (self-competence, effort, control, goals, task features, and strategies). Through the various learning experiences, new information is incorporated, the information is organized, and the theories and frameworks (assimilation process and accommodation) are modified, all of which is once again used to adapt behaviour. These processes ensure the student is not a mere reproducer, but also as a creator of knowledge.

Bearing in mind the evolution of the conceptual models of self-regulated learning in the past decades, there has been a change in the focus of various aspects of self-regulated learning.

Paris and Byrnes (1989), Paris, Byrnes and Paris (2001) and Paris, Lipson and Wixson (1983) describe the historical trends in research on self-regulated learning: As of the 1970s, research was primarily cognitive and it was not until the 1980s when researchers started to consider the various conditions involved in the implementation of the strategy, increasingly including metacognitive aspects of learning. In the 1990s, research was more concerned with the intervention in the classroom (Paris, Byrnes and Paris, 2001). Recent models for self-regulated learning have increasingly underlined the impact of motivational and volitional components in learning (Boekaerts and Corno, 2005).
Even though the authors have a common perception of learning self-regulation in general terms, as a cycle in which the self-evaluation of the learning process underscore the various aspects in the components included in the process.

When we use the terms of self-regulation competence or abilities, we are referring to the capability of the students to self-regulate their learning (based on the definition of the competence of Weinert, 2001), while the self-regulation strategy in general is a term that is used for describing the specific activities employed for reaching the learning objective in an efficient manner.

Based on the contributions of Corno and Mandinach (1983) regarding self-regulated learning and the recent motivational theories of the time, McCombs (1988; McCombs and Whisler 2000) suggests a model in which knowledge (conscience) and control (self-regulation) of the cognition and affectivity are involved in the metacognitive system.

The approach proposed by McCombs (1988) assigns a key role to self-efficacy judgements and personal control attributions and maintains that learning self-regulation requires a high-level of cognitive commitment.

The metacognitive system interacts, in turn, with the cognitive and affective systems, thus influencing the perceptions of the requirements of the task. Various schemes, knowledge and strategies related to the metacognitive, affective and cognitive system are involved, as well as memory of them which is combined and integrated in the memory of previous learning experiences.

The perceptions of the requirements of the task and of control over the personal action generate successful/unsuccessful expectations with regard to the rewards the outcomes provide (outcome expectations), as well as control or personal action expectation (efficacy expectations). The former references the most probable consequences a specific action will produce and the latter, the judgements on the actual capability to reach a certain execution level, which form the basis for produce a level interest and intrinsic motivation, vis a vis fulfilling the requirements of the task by applying the appropriate metacognitive, cognitive and affective strategies. At that point in time, the knowledge process (conscience) plays an important role of the relevant strategies and perceptions on the utility and cost of the strategies.

Based on the collection of strategies of the subjects, they establish their own judgements on the suitability of strategies to the requirements of the task.

The completion of the task leads to the self-evaluation of the task. The execution level is evaluated and is compared with the internal goals (internal criterion) or with the execution of the other ones (external criterion). Subsequently, the subject will attribute the outcome obtained to various causes, which will then lead to a new evaluation and to the establishment of different judgements on the personal control and self-efficacy in reference to the task completed. Judgements and sense of self-efficacy and self-control maintain a reciprocal influence between themselves and with the
metacognitive, cognitive and affective systems; as such, they generate an influence on the perceptions and future expectations, such as in motivation vs. similar learning tasks.

Borkowski's model (1992) focuses his attention in the relationship of the motivational, affective and metacognitive processes and attempts to explain the strategies used by an expert information processor.

Accordingly, it is based on the idea that any important cognitive act has motivational consequences, which promote, in turn, future self-regulatory behaviours (Borkowski, Estrada, Milstead y Hale, 1989). Borkowski and Muthukrishna (1992, p. 485) state that:

"...As strategic and executive processes become refined, the child comes to recognize the utility and importance of being strategic (general strategy knowledge accumulates), and beliefs about self-efficacy develop. More specifically, children learn to attribute successful (and unsuccessful) learning outcomes to effort expended in strategy deployment rather than to luck and they understand the intellectual competence can be increased through the self-regulated and/or self-directed activity. In these ways, the metacognitive model integrates cognitive acts (in the form of strategy use) with their motivational causes and consequences."

An optimum learner is therefore one who successfully integrates the primary components of the metacognitive system and cognitive, motivational, personal and situational characteristics.

These learners recognize the importance and utility of their strategies and they believe in the development of self-efficacy. They learn to attribute their successful or unsuccessful outcomes to the effort dedicated to using strategies instead of to luck and they understand the intellectual competence can be increased through the self-directed activity. As such, this model integrates cognitive actions (strategies) with their causes and motivational consequences. These motivational consequences, outcome of the feedback of the result of its completion and of its causes, gradually stimulate the selection of strategies and control over decisions.

7. Conclusions

Finally, Zimmerman (2001) considers that the majority of the theoreticians assume that the efforts of students to self-regulate themselves in their academic learning generally requires preparation time, monitoring and perseverance, because the outcomes of these efforts are not sufficiently attractive for students and as such, they are not motivated to self-regulate themselves.

Consequently, self-regulated learning postulates that greater emphasis is not situated in the transmission of conceptual-type content to our students but rather in learning to learn.
The key to learning is not for the students to generate summaries, outlines or underscoring but rather to attempt to underline that the student is the true actor in the planning, supervision and cognitive, behavioural and affective-motivational regulation of his/her learning process.

Finally, one of the most important contributions of the self-regulated learning approach is to consider the student as the true actor, who increments as he/she advances in the educational system. That importance, nonetheless, must be supported in the job of the professor as the mediator who needs to teach how to learn.

Teachers can easily recognise self-regulated students. This situation should be taken advantage of by professors in order to implement teaching strategies to ensure that students whose self-regulation strategies are less developed can benefit accordingly.

This is so because students who self regulate their learning and studying processes are more active, effective and efficient and demonstrate substantially higher levels of motivation. We as teachers should develop this operational competence in the classroom in order to achieve quality teaching.

References


Information and Communications Technologies (ICT) and Pre-Service Education Professionals: A Case Study of Motivation and Knowledge

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Abstract: The importance of knowing ICT training and motivation -so relevant in today's society- which currently offers the first year college students, mostly in degrees in Education, focuses the object of interest in this study. The following targets have been proposed: [1] knowing what basic skills regarding initial instrumental knowledge presents the prospective teacher (aptitudes) and [2] knowing their motivation for the educational use of ICT in the classroom (attitudes). For this purpose a non-experimental descriptive quantitative methodology has been used, with a sample of subjects (N=282) of the Autonomous Region of Extremadura (Spain). The results show that new degree college students possess a basic knowledge of ICT alongside a highly positive motivation towards the use of these. However, it is worrying that they only show an instrumental and technical knowledge of computing and telematic tools implied in social environments, but not pedagogical ones. Also they are unfamiliar with the true power of social, economic, political, ethical, influence as well as the effects and problems that their misuse can generate in their future students (addictions, manipulation, consumerism, etc.). Dimensions therefore for which they are urged to be trained at University for a proper performance as future professionals in education.

Key-Words: Knowledge, Motivation, Teacher Training, Pre-Service Teachers, Digital Literacy, Media Education, ICT in Education.

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1. Introduction

1.1. Problem of research

We live in a society exposed to continuous changes and technological developments in which ICT are constantly increasing their relevance and power. Each of the sectors of our life (social, labor, economic, etc.) is exposed to these changes and developments, which in turn affect the field of education, which is considered to be one of the cornerstones of our society.

ICT play a decisive role in the process of teaching-learning and this is reflected as such in scientific literature, which details the great level of interest shown in the study of basic skills presented by these students.

It is clear in today’s world that students must be technologically literate. It is a requirement which enables access to knowledge and allows them to navigate an ocean of information from which they can search, select and extract, etc., freely, autonomously and critically.

It is also essential to examine the student’s motivation since it is a key factor in learning. Today it is clear that a motivated student is one who is predisposed to learn. We agree with authors who maintain that one of the key advantages of the educational use of technology and media in the classroom is motivation, which is even more important than the ability to convey information and provide suitable learning content.

These therefore are the two main points of interest of the research performed. Focus will be placed on the initial training of future professionals in education, since it is on them that the education of new generations will depend because we will live in a world increasingly influenced by ICT; one in which both the basic training in these technologies and the right motivation for their implementation will be very important in establishing a new structure of the Teacher Training Curriculum in which ICT should have an important presence and future teachers should be trained according to the needs of a digital society.

1.2. Research focus

ICT in education are given preferential consideration by the educational and scientific community. Currently, researchers are in a fruitful and intense period in both theoretical production and field research, which is reflected in the remarkable growth that has occurred in recent years in the number of publications (books, articles in scientific journals, dissertations, etc.) which have focused on this field of knowledge. And one of the main lines of research in education science, which can no longer be considered new and innovative, is the verification of the initial training possessed by Teaching Studies students.

These students, as future specialists and education professionals have to be trained in the control and use of ICT, as they will become within the
educational community the main agent responsible for the implementation of their educational use and contribution to their full integration in schools (Tondeur, Van Braak, Sang, Voogt, Fisser & Ottenbreit-Leftwich, 2012; Rogers & Twiddle, 2013; Fluck & Dowden, 2013). Their training is crucial for the utilization of ICT in the classroom in an effective way (Gómez-Galán & Mateos, 2002 and 2004; Selwyn, 2006; Dawson, 2008; Peeraer & Van Petegem, 2012; Chai, Koh & Tsai, 2013).

The teacher will provide students with their ICT training foundation, which will be decisive for its proper performance in accordance with new social needs. Their formation is one of the most significant challenges in education in relation to the new social, economic and cultural context represented by the information society. We have always believed that such training must start through an elementary process, seeking the establishment of a solid foundation from which access to new technologies from a pedagogical perspective is facilitated (Soler-Costa, 2011). The role of education and the digital literacy is essential in the knowledge-based society (Juszczyk, 2006).

We suggest that the training a Primary Teaching student or prospective future teacher acquires must be primarily formative and reflective, in addition to being technical and instrumental, enabling them as such to make critical use of ICT as part of their environment (Rogers & Twiddle, 2013). It is important to stress this because technology is not only education, and students may be encountered who have not had this kind of training or any other preparation of an inadequate and/or insufficient nature.

This training is critical, especially in a society that is manipulated by the major power elite that dominate communication processes, especially large media corporations. ICT -especially the Internet and media with a great presence in the Western world like television- have the power to create a parallel, virtual reality, which can distort true reality. They can distort information in a subtle, undetectable manner, thanks to the sophistication of the digital paradigm. We are under the control of what Echevarría (2007) called the lords of air, controlling all communication flow in the third environment.

Students at all levels of education have to be trained to select and interpret information critically, and filter the vast amount of information, all of which is not necessarily competently treated. Sometimes, and paradoxically, an excess of information can cloud the underlying meaning of the data obtained. Quantity is imposed on quality, leading -and we agree with the technologist Lanier (2006)- to a global network and Internet which is uninformed and tedious. It should not be forgotten that we live in a changing society and for this reason training during our lives is essential (Montaser, Mortada & Fawzy, 2011; Kim, Choi, Han & So, 2012).
Also it is necessary to equip schools with relevant, technological and audiovisual material to enable students to acquire a solid background. Education Colleges, at which future teachers are now being trained, are slowly paying more attention to this, as it is clear that it plays a crucial role in the acquisition of ICT training. These are college students who will train and educate citizens, who will constitute the workforce of the future, the main creators and consumers of ICT (UNESCO, 2002).

We agree with the classic Delors report (1996) that improving the quality of education must begin through the improvement of training. If we understand ICT training as a key skill that students must develop during their learning process in the school, it is necessary to ascertain whether students have acquired it properly. And in this sense it is crucial to determine what level of digital competence they have when they first arrive at university.

On the other hand, motivation is an essential factor in student learning (Elliot & Dweck, 2005; Schunk & Zimmerman, 2008; Grosskopf, 2009; Akbiyik, 2010). It is one of the engines of learning as it promotes activity and thought. Therefore it can be said that a motivated student will be more willing to learn than one who is not. Domínguez-Rodríguez & Cañamero (2008) stresses the importance of motivation and emotion in learning in its study of educational research with college students.

One of the keys to capturing the attention and interest of students, and as a consequence facilitating their learning, is the introduction of ICT in the classroom. These are considered key tools in improving learning construction (Petrauskiene & Volungeviciene, 2006; Albirini, 2006; Mueller, Wood, Willoughby, Ross & Specht, 2008; Hiralaal, 2013). They enable work to be done more dynamically through the promotion of interaction which in turn encourages an active and participatory student spirit which negates passive presentation. Martín, Beltrán & Pérez (2003) considers ICT’s to be entertaining and attractive media, which draw students’ attention on their own.

It is important to note that a student’s learning and motivation is not so much the tools used by the teacher but the way in which they are introduced in the classroom. Means alone cannot produce learning. It is more than teachers delegating their educational capacity as if it were a machine or tool, regardless of the fact that their work is enhanced by those aids. When used in the classroom, these tools will facilitate the teachers’ work and free up more time to build the motivation potential of students (Cox, 1999).

One of the main themes of research in recent years has focused on the power of ICT tools as student motivators in the teaching-learning process. It is a proven fact that more and more educational institutions and universities are seeking ways to introduce these technologies into the classroom because of the high level of student interest in ICT. Teaching professionals are being encouraged to include them as a priority in teaching resources. This may be

We also find contributions that demonstrate that ICT facilitate students’ learning (Kennedy, Judd, Churchward, Gray, & Krause, 2008). This study shows that a high percentage of Australian first-year students (84 %) said that a mobile phone could assist them in their studies. These results highlight the positive attitude of students with regard to the role of ICT in the provision of educational aid.

2. Methodology

2.1. General background of research

The principal goal of our study is informed of the basic competence and ICT motivation featured by first-year students in Elementary and Primary School Education degrees (University of Extremadura, only this university exists in Extremadura, Spain) in order to [1] determine the initial conditions of future education professionals in relation to these technologies and means, and in parallel [2] to assess quality in college teacher education, aligning these important elements of our society, against a further study to be undertaken after graduation in which the same dimensions will be analyzed. In this research we start from a general hypothesis, in which we establish that pre-service education professionals at Extremadura (Spain), studying first year Education degrees, possess a significant initial knowledge of ICT as well as a positive motivation towards them.

2.2. Methods and participants

In this study the model of educational research has been chosen which is based on quantitative methodology, descriptive through surveys, and referred to as “non-experimental”. This was considered to be ideally suited to the achievement of the aims pursued and the verification or refutation of our working hypothesis.

The study population is made up of first-year University students enrolled at the College of Education at the University of Extremadura in Elementary and Primary Education Degrees. 282 subjects were studied of which 171 belong to Primary and 111 to Elementary Education. The sample group was selected using a non-probability accidental sampling, causal or convenience, as the individual selection criteria depended upon their accessibility.

2.3. Instrument and procedures

For data collection we have used a questionnaire developed from validated questionnaires by Gómez-Galán (2003) and Pino & Soto (2010). The type of questionnaire is self-administered and individual. It consists of 24
questions divided into the following parts: user instructions, socio-demographic data and the questionnaire body (items, Likert-type scales). The reliability of the scale determined through Cronbach’s alpha: \( \alpha = \frac{\kappa}{(\kappa - 1)} \left( 1 - \frac{\sum \sigma_i^2}{\sigma_{\text{sum}}^2} \right) \). Result of Cronbach’s alpha = 0.871. Thus, the instrument has demonstrated strong internal consistency through this test.

In order to plan our research accurately and for it to be executed in an orderly manner four work patterns were established: [1] the first being the building of the theoretical framework of the study, for which a comprehensive scientific literature review on the subject was conducted. [2] Second, the instrument used for collecting the said data was chosen. The use of a validated questionnaire was selected, one which suited the object of study, and enabled us to proceed to the third pattern of data collection in a reasonable amount of time [3] In the application of the questionnaire three phases were developed: [3.1] Awareness: An e-mail was sent to university teachers of the first year of Primary and Elementary Education Degrees specifying the date, place and time when questionnaires were to be conducted. [3.2] Questionnaire Application: the delivery of the questionnaires was proceeded with, and their anonymity ensured. They were completed individually by the subjects being studied [3.3] Return of results: The results were offered by e-mail to the Faculty interested in obtaining information for the purposes of the study, the said results being helpful in the planning of their academic syllabus, especially as it was centered on and involved the use of ICT. [4] As a fourth and final pattern, analysis and interpretation of the results was proceeded with. The data was processed to Excel spreadsheet and exported to SPSS 18.0 for Windows, which enabled the statistical analysis of the results.

3. Results

Our sample group consisted of 282 students, of whom the majority is female (a total of 214 women compared to 68 men). They are mostly under 20 or between 20 and 30 years of age, 49.6% and 47.2 % respectively, with subjects over 30 years in the minority (3.2%), more than half of those who were surveyed are studying Primary Education (60.6%) and 39.4 % Elementary Education. The great majority belong to the social middle class (79.1%).

The evaluation on ICT-related knowledge made by future teachers is generally positive, with special skills being noted in programs of personal interaction like WhatsApp, e-mail and social networks (Facebook, Twitter, etc.), in which the majority deem themselves to be highly skilled (72.3% ) or fairly skilled (22.7%). This positive self-assessment must be added to the correct management of the e-learning platform of University of Extremadura (Moodle), where more than half of the university students are considered to be fairly skilled (55.3%), or highly skilled (34 %).
Just over half the students also consider themselves to have good management of basic programs (such as word processing and slide presentation) 50.7% and in the use of web browsers (Google, Yahoo, Bing, etc.) 50.4%. 37.9% consider themselves to be very skilled at basic programs and 38.4 % in the use of search engines on the web. 39.4% consider themselves to be fairly skilled at managing blogs and highly skilled in chats and forums (19.1%).

The results are less positive when asked about educational field tools such as author’s programmes (Clic, J-Clic, Hot Potatoes, etc.) and Internet guided search activities (Webquest), as well as multimedia devices (overhead, webcams, etc.). Almost half of the students surveyed (47.5%) consider that they have some management of educational author’s programmes, 15.2 % have fairly good management, and only 2.8 % of respondents rated their management of these programs as good. Just over half of respondents (50.8%) considered that they have some management of Webquest, 18.4 % fairly good management and only 5.7 % rated their management as being good. With regard to their assessment of their management of multimedia devices, the highest percentage believe they have some management (41.5%), followed by those who rate their management as being fairly good (35.8%) while the option of good management was chosen by (13.8%), the only ICT tools in which all of the students consider themselves to have good management, to a greater or lesser extent, are programmes of personal interaction and the virtual learning platform.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Total</th>
<th>Average</th>
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<tbody>
<tr>
<td>1= None; 2= Somewhat; 3= Quite; 4= Much</td>
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<tbody>
<tr>
<td>Basic Programs</td>
<td>.4</td>
<td>11.0</td>
<td>50.7</td>
<td>37.9</td>
<td>100.0</td>
<td>3.26</td>
</tr>
<tr>
<td>Interpersonal Relations Programs</td>
<td>0</td>
<td>5.0</td>
<td>22.7</td>
<td>72.3</td>
<td>100.0</td>
<td>3.67</td>
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<tr>
<td>E-learning Platform</td>
<td>0</td>
<td>10.6</td>
<td>55.3</td>
<td>34.0</td>
<td>100.0</td>
<td>3.23</td>
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<tr>
<td>Author’s Education Programs</td>
<td>34.4</td>
<td>47.5</td>
<td>15.2</td>
<td>2.8</td>
<td>100.0</td>
<td>1.87</td>
</tr>
<tr>
<td>Search the Network</td>
<td>.7</td>
<td>10.6</td>
<td>50.4</td>
<td>38.3</td>
<td>100.0</td>
<td>3.26</td>
</tr>
<tr>
<td>Multimedia Devices</td>
<td>8.9</td>
<td>41.5</td>
<td>35.8</td>
<td>13.8</td>
<td>100.0</td>
<td>2.55</td>
</tr>
<tr>
<td>Guided Internet Searching</td>
<td>25.2</td>
<td>50.7</td>
<td>18.4</td>
<td>5.7</td>
<td>100.0</td>
<td>2.05</td>
</tr>
<tr>
<td>Blogs, Chats and Forums</td>
<td>7.1</td>
<td>34.4</td>
<td>39.4</td>
<td>19.1</td>
<td>100.0</td>
<td>2.71</td>
</tr>
</tbody>
</table>

Table 1. Knowledge. Key: 1=None; 2= Somewhat; 3= Quite; 4=Much

As regards attitudes and motivations, overall, students agreed, more or less directly, with positive statements towards ICT, showing an interested attitude towards them. Most respondents agree that they strongly agree that ICT are essential in today's society, 59.6%, and in good agreement 34.4%. More than half of respondents strongly agree that knowing how to use computers and the Internet will be essential to continue studying and, in the future, to find a quality job, 57.4%, and in good agreement 36.9%. Almost half of the students also agree that they strongly agree that ICT are good for
their academic training, 49.6%, and in good agreement 42.9%. 41.8% of respondents are very interested in what they can do with computers and the Internet, or fairly interested, 48.6%. 37.9% of students said they strongly agreed that ICT are an instrument to assist themselves in their learning process, or fairly interested 51.1%. The statement in which we found a low percentage of students who strongly agree (20.9%) although partially agree (55%), is the one in which it is stated that the Internet offers countless learning opportunities, with very few inconveniences, as well as being a tool designed for education. The statements in which all of the students slightly, partially or fully agree are two: ICT are good for their education and learning how to use them properly is essential to continue studying and finding a good job.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percentage</th>
<th>Total</th>
<th>Average (0-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am interested in everything connected with computers and the Internet</td>
<td>1.1, 8.5, 48.6, 41.8</td>
<td>100</td>
<td>3.31</td>
</tr>
<tr>
<td>ICT are good for my education</td>
<td>0, 7.4, 42.9, 49.6</td>
<td>100</td>
<td>3.42</td>
</tr>
<tr>
<td>ICT help in my learning process</td>
<td>7, 10.3, 51.1, 37.9</td>
<td>100</td>
<td>3.26</td>
</tr>
<tr>
<td>Learning to use computers and the Internet</td>
<td>0, 5.7, 36.9, 57.4</td>
<td>100</td>
<td>3.52</td>
</tr>
<tr>
<td>Internet is essential to study and get a job</td>
<td>4, 5.7, 34.4, 59.6</td>
<td>100</td>
<td>3.53</td>
</tr>
<tr>
<td>ICT are essential in today's society</td>
<td>2.1, 22.0, 55.0, 20.9</td>
<td>100</td>
<td>2.95</td>
</tr>
<tr>
<td>Internet provides learning opportunities with few drawbacks.</td>
<td>2.1, 22.0, 55.0, 20.9</td>
<td>100</td>
<td>2.95</td>
</tr>
</tbody>
</table>

Table 2. Reasons for using ICT. Key: 1=None; 2=Somewhat; 3=Quite; 4=Much

Almost half of the surveyed students (48.6%) believe that the Faculty in which they are enrolled has adequate audiovisual equipment and technology to provide proper training in ICT; however, 29.1% disagree with that assessment. The rest of the students chose not to answer (DK/NA/REF: don't know, not available or refusal) as to whether their institution has such material, 22.3%.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
<th>Validation</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>82</td>
<td>29.1</td>
<td>29.1</td>
</tr>
<tr>
<td>DK/NA/REF</td>
<td>63</td>
<td>22.3</td>
<td>22.3</td>
</tr>
<tr>
<td>Yes</td>
<td>137</td>
<td>48.6</td>
<td>48.6</td>
</tr>
<tr>
<td>Total</td>
<td>282</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3. Your faculty possesses sufficient audiovisual and technological material to acquire adequate training in ICT.
More than half of college students (63.5%) believe they have adequate and timely training, which enables them to make critical use of ICT within their respective environments. On the other hand 25.2% consider their training to be inadequate or insufficient 5.7% of the subjects feel they are not receiving or have not had training at all. This 5.7% represents those individuals, who believe they are more fully skilled, i.e., and have already had suitable training.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
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</thead>
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<tr>
<td>Not possess</td>
<td>16</td>
<td>5.7</td>
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<tr>
<td>Inadequate</td>
<td>71</td>
<td>25.2</td>
<td>25.2</td>
<td>30.9</td>
</tr>
<tr>
<td>Fair</td>
<td>179</td>
<td>63.5</td>
<td>63.5</td>
<td>94.3</td>
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<tr>
<td>Great</td>
<td>16</td>
<td>5.7</td>
<td>5.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>282</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4. Your faculty possesses sufficient audiovisual and technological material to acquire adequate training in ICT.

With regard to their use of these tools, the instruments most commonly used by most of the students surveyed are personal interaction programmes and 74.8% indicate that these are used extensively by them. Educational programmes 46.1% and Webquests 42.2% are those which are least used by college students. The only tools that are used to a greater or lesser extent (slightly, fairly or broadly) are personal interaction and basic programs and the e-learning platform of University of Extremadura.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total</th>
<th>Average (0-4)</th>
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<tr>
<td>Basic Programs</td>
<td>0</td>
<td>4.6</td>
<td>44.7</td>
<td>50.7</td>
<td>100</td>
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<tr>
<td>Interpersonal Relations Pro-</td>
<td>0</td>
<td>7.1</td>
<td>18.1</td>
<td>74.8</td>
<td>100</td>
<td>3.68</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>E-learning platform</td>
<td>0</td>
<td>10.6</td>
<td>45.0</td>
<td>44.3</td>
<td>100</td>
<td>3.34</td>
</tr>
<tr>
<td>Author’s Education Programs</td>
<td>46.1</td>
<td>45.4</td>
<td>7.8</td>
<td>.7</td>
<td>100</td>
<td>1.63</td>
</tr>
<tr>
<td>Search the Network</td>
<td>1.8</td>
<td>6.0</td>
<td>45.4</td>
<td>46.8</td>
<td>100</td>
<td>3.37</td>
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<tr>
<td>Multimedia Devices</td>
<td>20.2</td>
<td>48.9</td>
<td>21.3</td>
<td>9.6</td>
<td>100</td>
<td>2.20</td>
</tr>
<tr>
<td>Guided Internet Searching</td>
<td>42.2</td>
<td>37.6</td>
<td>15.2</td>
<td>5</td>
<td>100</td>
<td>1.83</td>
</tr>
<tr>
<td>Blogs, Chats and Forums</td>
<td>16.3</td>
<td>36.9</td>
<td>31.2</td>
<td>15.6</td>
<td>100</td>
<td>2.46</td>
</tr>
</tbody>
</table>

Table 5. Use ICT. Key: 1=None; 2=Somewhat; 3=Quite; 4=Much

With regard to the inferential analysis, after calculating the Chi square test \( \chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} \) and contingency coefficient at the junction of nominal and scale variables, no significant differences in knowledge, use of ICT or motivation features by the students surveyed, were noted, regardless of age, gender, specialty, or social class.

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4. Interpretation and Discussion

To simplify the presentation and discussion of the interpretation of the data, in seeking conclusions, the different dimensions of study will be established. First, we center on the knowledge and motivation in ICT by university students. Overall responses of college students reveal significant knowledge of ICT, most believe they correctly manage personal interaction programs (e-mail, social networks, Whatsapp, etc.) as well as the virtual teaching platform of the University of Extremadura. More than half of those surveyed consider their management of basic programs and web browsers to be sufficient. With regard to their use of these tools we find that the means most commonly used by university staff are interrelated and basic programs, especially the first mentioned. Educational programs and Webquest are tools that are used less. All of this indicates that ICT tools are used in their daily lives primarily for entertainment and leisure, and for the purposes of media and social relations (see e.g. Gómez-Galán, 2007 and 2011; Pećanac, Lambić & Marić, 2011; Pattaro, 2015).

Most undergraduate students are motivated and show great interest in ICT. They are aware of their importance in our society. They know that their operation with computers is essential in allowing them to continue studying and finding a job (cf. Albirini, 2006; Petrauskiene & Volungeviciene, 2006; Kim, Choi, Han, & So, 2012; Hortovanyi & Ferincz, 2015). They see the learning process as being facilitated by this technology but their assessment of Internet as being a tool designed to aid education without it having any drawbacks is seen as a dangerous. Thorough training in this regard towards the proper use of Internet by future education professionals is necessary as the interpretation that it has been designed for training is erroneous (Gómez-Galán, 2003 and 2011).

It is also significant that they are divided on the adequacy of audiovisual equipment present at the college in which they are enrolled as well as the appropriate technology being available to enable good training in ICT to be carried out. Such doubts suggest that technologies are under-resourced or under-utilized (cf. Barton & Haydn, 2006; Goktas, Yildirim & Yildirim, 2009; Murray & Rabiner, 2014).

Another disturbing response is that more than half of the students believed they have received adequate and timely training to enable effective use of ICT as part of their environment. This indicates in direct relation to the response given on the educational nature of the Internet, their ignorance of the nature of current communication processes, in which powerful media groups have acquired so much economic, social and political influence as well as all the accompanying pedagogical implications (analysis of advertising, consumerism, addiction potential, etc.). Training regarding this point is required (see Gómez-Galán & Lacerda, 2012; Buckingham, 2013;
On the other hand, we detect the insufficient previous training being given to university students. In ICT gaps have been found in the management of educational authors’ programmes, guided Internet search activities and multimedia devices, where a large percentage of students confess to not having any management capacity and with only a very small percentage deeming themselves to be highly skilled. Educational programs and Webquest are the least used of these tools.

These results have led us to conclude that there is only one underlying reason which can explain the fact that education environmental tools are practically unknown to Teaching Degree students, bearing in mind that the initial training of newly admitted students to the College is being researched - i.e., the training received in their earlier stages of education needs to be assessed- given, it would seem, that such tools are not used by Primary and Secondary/High School teachers as part of teaching content in the classroom (see also Gallego & Alonso, 2000, Van Braak, Tondeur & Valcke, 2004; Sime & Priestley, 2005; Drent & Meelissen, 2008; Leask & Pachler, 2013; Hammond, 2014; Aesaert, Van Nijlen, Vanderlinde, Tondeur, Devlieger & van Braak, 2015).

The lack of prior training, therefore, designed specifically for ICT education, implies the need to have this introduced during their attendance at university. Focus will be required to be placed on technical and instrumental training in specific teaching programmes which as future teachers, they will need to be trained in to enable their understanding and use as teaching resources -and further enhance the use and integration of these tools to achieve specific learning goals- (cf. Haydn & Barton; 2007; Goktas, Yildirim & Yildirim, 2008; Khan & Hasan, 2013; Tondeur, Roblin, van Braak, Fisser & Voogt, 2013; Fluck & Dowden, 2013, Barak, 2014).

The information obtained in this study, which reveals gaps in technical and instrumental training of educational hardware and software and others in critical knowledge of the information society, is something that university professors and managers of education colleges will need to know in order to fill these important gaps during initial teacher training.

Finally, the results of the Chi square test must be interpreted as well as the contingency coefficient at the junction of nominal scale variables. It has been previously mentioned that no differences in sex, age, social class and specialty of respondents regarding their ICT skills and their motivation to use them were found. Results which show that today all citizens (regardless of gender, age, social position, etc.) are familiar with ICT. This comes as no surprise in a society where all areas of our lives are directly or indirectly influenced by them, as is its relevance as a means of communication, access to information, knowledge, entertainment, leisure, etc. Their power of social penetration is so great that even the most socially or financially disadvantaged
citizens make frequent use of the latest ICT, either through private or public employment (or through educational institutions, libraries, knowledge centers, etc.).

5. Conclusions

The first and main conclusion that can be drawn is that the specific aims pursued in this research have been achieved, and confirmation of our working hypothesis confirmed. It can be said therefore, that students of Education degrees (pre-service education professionals) at the Autonomous Community of Extremadura (Spain) begin their training with significant technical and instrumental knowledge of ICT, but basically those that are inclined towards communication and entertainment/leisure systems. Likewise, they display positive motivation towards them. They have, in this sense, both the skills and appropriate attitudes towards technology and media. However, they lack a deeper understanding of the true nature of the tools used and their real social dimension, which will assume vital importance in the education of future students. This lack of understanding is also apparent in the non-recognition of the problems that are associated with unsuitable use derived addictions, manipulation, consumerism, etc., they offer no criticism or reflection, and are ignorant of the crucial dimension of their economic, political and social impact. Nor have they adequate knowledge on how to use them as teaching resources, and harbor doubts that Colleges of Education possess sufficient and proper training resources.

It is necessary, therefore, that the syllabus of initial teacher training includes pedagogical software and hardware, and that the issue of ICT is also analyzed as an object of study, from a critical standpoint, keeping the future training of those who will be its students in mind. We believe that these results are very important when one considers that both teacher training and motivation are keys to the achievement of full integration of ICT into educational institutions and comprehensive training of citizens.

References


Foreign Language Teaching and Learning in a Reading Comprehension and Writing Online Module: A Higher Education Analysis

Carolina Arrieta Castillo a, Nicole Roberts a, Paola A. Palma Rojas a, Suly M. Corredor Sánchez a

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Abstract: The Spanish section of the Department of Modern Languages and Linguistics at The University of the West Indies at Saint Augustine decided to begin teaching a two hour module of the courses: SPAN 1001 and 1002 to first year students, in the online mode in the academic year of 2014-2015. This paper’s principal objective is to reflect upon students’ and teachers’ perspectives on benefits and challenges of the blended learning mode of delivery for Spanish programme. It examines the online reading and writing module to assess student writing interaction as well as to determine best practice in the teaching of these skills in the foreign language at the tertiary level in a twenty-first century Caribbean context. In order to carry out this reflection, action research was used therefore its data collection consisted of observations of the course design before and after the innovation, student surveys and teacher interviews. Among the most relevant findings are: students and teachers prefer to have an online delivery of this class rather than the previous face to face class; the variety of activities lead to higher interaction among students; change of roles for teachers and students, fostering more active learning among students; and a rise of digital culture for academic purposes. However, some restructuring is required in terms of teachers’ feedback delivery and students’ and teachers’ required time for activities. As recommendations the paper suggests continued promoting of this online module since it develops both technological literacy and higher written interaction in the first year of the Spanish programme.

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Key-Words: Blended Learning, online teaching and learning, blended language teaching, Teaching Reading Comprehension and Writing Online, Tertiary Education.

1. Introduction

Online learning is spreading rapidly through higher education, compelling us, as teachers, to face existing assumptions of the teaching and learning process. In fact, higher education institutions are more and more challenged to meet the demands and expectations of the society for prospective students. In Spanish at the University of the West Indies, (UWI) St Augustine campus, the conventional face-to-face mode of language teaching was the norm. However, it was felt that students in the Spanish programme needed to be kept up to date with the use of technology and communication technology in reading comprehension and specifically in writing, and as teachers, we theorised that teaching reading and writing online would increase student writing interaction. Graham, Allen and Ure (2003) found that, by a great majority, Blended Learning (BL) was implemented for the reasons of (1) improved pedagogy, (2) increased access and flexibility, and (3) increased cost-effectiveness.

In order to employ a blended learning environment in the Spanish programme, and as a part of continuous curriculum review, the Spanish section decided to modify the first year of the Spanish Language program during the 2014/2015 academic year. At the entry level for the degree program in Spanish students read two courses; SPAN 1001-Spanish Language IA (Semester 1) and SPAN 1002-Spanish Language (Semester 2). Both are divided into three components: i) Conversation and Listening Comprehension, ii) Reading Comprehension and Writing and iii) Communicative Grammar. Up until the 2013/2014 academic year the Reading Comprehension and Writing module (2 hours) was taught as a face to face class only. In that module students dedicated one hour to the writing component which we (the Instructors) found to be quite limited. We felt that our students were not practising enough written production and there was limited written interaction. The section decided to deliver the Reading Comprehension and Writing module fully online while keeping the face to face classes for the other two modules.

The teaching team for semester one comprised Carolina Arrieta Castillo, Suly Corredor Sánchez, Nicole Roberts and Jairo Sánchez Galvis. At that time, we formulated the idea for the use of action research so as to research and reflect on the online course and to write up the results in the form of a paper. In semester two, the teaching team comprised Carolina Arrieta Castillo, Suly Corredor Sánchez, Paola Palma Rojas and Nicole Roberts. Denscombe (2010) describes practical action research as a strategy used to solve a particular problem. In this study, the project sought to assess
the impact of the online mode of instruction on the quantity of student writing produced. The Action Research method offers a blend of theory and practice. This method was considered appropriate as students partaking in the course would benefit as much as the Instructors who would find the reflection involved in this particular research of great benefit. Perhaps most importantly, we also felt that this kind of research would contribute to overall Instructor effectiveness in the teaching of Reading Comprehension and Writing in Spanish. In addition, it should be noted that this research is significant at the level of administration at the UWI. Our findings would certainly contribute to the knowledge base regarding best practice in the area of teaching and learning in Reading Comprehension and Writing in Spanish at the UWI, St. Augustine.

The purposes of this study are to examine the perceptions of both students and teachers with regard to the online reading and writing module, to assess student writing interaction and to attempt to establish best practice in teaching Reading Comprehension and Writing in Spanish at the tertiary level in a twenty-first century Anglophone Caribbean context.

The research questions for the above purposes are:
1) What are the benefits and challenges of an online reading and writing module both in teaching and learning Spanish as a second language at the tertiary level in the Anglophone Caribbean?
2) To what extent does the online module facilitate increased writing interaction among students?

2. Literature Review

Since the implementation of the use of technology in language teaching, different authors have tried to define the concept of Blended Learning (BL). For the purpose of this study, we adopt the definition suggested by Graham (as cited in Gruba & Hinkelman, 2012, p.3) who defined BL as the combination of “face-to-face instruction with computer-mediated instruction”. In the courses SPAN 1001 and SPAN 1002, two of the components remain being taught face-to-face, enriched with the use of different learning technologies in class, while the component Reading Comprehension and Writing is taught fully online through the platform myeLearning (Moodle) and other online resources.

Recent teaching approaches in Higher Education and foreign language teaching seek to switch methodologies from teacher-centered to student-centered. Bonk and Graham (as cited in Gruba & Hinkelman, 2012, p.4) explain that “transforming approaches” to blended learning uplift substantial changes in pedagogy, as this focuses on changing the role of the learner from “passive receivers of information to active co-constructors of knowledge”. In online learning environments the learner has the opportunity to do
collaborative work, interact in real contexts, negotiate meaning, as well as to develop their own learning strategies. This aligns with the objectives from The Common European Framework of Reference for Languages (CEFR) which suggests the adoption of an action-oriented approach for foreign language teaching because:

“…it views users and learners of a language primarily as ‘social agents’, i.e. members of society who have tasks (not exclusively language-related) to accomplish in a given set of circumstances, in a specific environment and within a particular field of action. While acts of speech occur within language activities, these activities form part of a wider social context, which alone is able to give them their full meaning. We speak of ‘tasks’ in so far as the actions are performed by one or more individuals strategically using their own specific competences to achieve a given result. The action-based approach therefore also takes into account the cognitive, emotional and volitional resources and the full range of abilities specific to and applied by the individual as a social agent”. (Council of Europe, 2011, p.9)

2.1. Advantages for the student and linguistic acquisition

Different authors have focused on analysing the advantages and disadvantages of implementing the use of Information and Communication Technology (ICT) in language teaching.

**Increased motivation.** Warschauer (1996), found that during the early years of introducing ICTs in education, students overall had a positive attitude towards using computers. This motivation could be related to the fact that some years ago computers and the Internet were a novelty, but more recent studies (Hung & Yuen, 2010; Greenfield, 2003; Miyazoe & Anderson, 2010; Segupta, 2001) have also reported a positive attitude from the students. In general, the virtual environments, paradoxically, are perceived as more ‘real’ and closer to daily life than working in a traditional classroom. Participating in a forum or a social network, which Walther (1996) defined as CMC (Computer Mediated Communication), is a more common writing activity, and therefore more meaningful, than writing on paper about a given topic.

According to Bartolic-Zlomislic & Bates (1999), online teaching reduces the levels of anxiety in the learner, as the anonymity granted by this mode can encourage greater participation even from the shy ones (Educational Benefits section, para. 2). Similarly, Sengupta (2001) concluded from a case study that in online interaction, students feel more motivated to participate and more engaged in activities which contribute to balancing the number and the frequency of students’ interactions. Moreover, students make a greater effort to produce better texts when these will be read by a wider amount of readers. Forums, wikis and other resources allow continuous written interaction as well as collaborative work (Weasenforth, 2002).
Access. Today, second language learners have access to more information and resources on the internet which assist them with their reading and writing activities. Loucky (2009) found that reading in a foreign language was more meaningful when the learner had access to these tools as Internet provides the learner with possibilities to interact directly with the foreign culture through forums, wikis, blogs, newspapers, videos, podcasts, etcétera. The student finds the material and resources from the internet not only in its original format and context, but also linked to other resources that complement and widen the variety of input\(^b\).

Flexibility. Online learners have the flexibility to work at their own pace. Some of the activities may allow the learners to choose materials with which they prefer to work and in a way that they find will facilitate their learning process. By allowing students to take the responsibility for their learning path, online learning helps to develop student’s autonomy and independence, which is the aim of the student-centered learning approach (Jones, 2007).

Grammar and Spell Checkers allow for a degree of flexibility among students. They take care of some aspects of low-level cognitive processes by providing immediate feedback about common errors; allowing students time to focus their attention on high-level processes, such as, recognizing types of texts, inferring meaning and developing ideas.

Undoubtedly, conclusions from recent studies on Second Language Teaching that highlight the importance of the learners’ individual differences (Martín Peris, 2000) are underscored in our program where for example, there are dyslexic students who could specifically benefit from the use of technology (Mejía, Díaz, Florian-Gaviria & Fabregat, 2012).

2.2. Advantages for the teacher and the university.

The role of the teacher changes from being a transmitter of knowledge to a mediator. Learners have a variety of resources available online that help to develop autonomy in their own learning process. In this way, Johannesen & Eide (2000) affirm that the responsibility of the teacher is to make the appropriate arrangements to facilitate the learning process.

The teacher is able to monitor the participation of each student and communicate with them individually in a continuous and egalitarian manner. This makes the amount and quality of teacher-student interaction higher than in face-to-face interactions.

\(^b\) Refers to the external factors that determine the learning context of the foreign language to which the learner is exposed. According to Ellis (1994), input are forms of language that may appear in written or spoken form, for example in interactions with a native speaker or the teacher, as well as in non-reciprocal discourse as when watching a film, listening to the radio or reading a newspaper.
Economic benefits. Online tutoring not only benefits the students economically by reducing the expenses of transportation to and from the campus, but also the expenses of books and other learning materials may be cut. The university does not receive an additional income for this type of course; however, Bartolic-Zlomislic & Bates (1999) affirm that previous studies have demonstrated that online courses are “at least as cost-effective as conventional courses” (Economic Benefits section, para. 7).

2.3. Limitations

Some of the limitations that were expected for the implementation of this course are related to preparedness, time management and computer literacy. It requires that the teacher, as well as the student have some knowledge about how to use certain online applications. Johannesen & Eide (2000) believe that technical aids can also generate reluctance to learn due to many different factors. They affirm that a programme or application which does not function can lead to dissatisfaction and frustration. On the contrary, if it functions as it should, it will increase student and teacher motivation thereby enriching the learning experience. However, it is expected that the teacher and the students are ready to embrace this method of delivery. Johannesen & Eide (2000) believe that the use of technology in teaching can create some level of reluctance, which was evidenced in the initial survey to the UWI Instructors and students; both demonstrated an initial lack of acceptance of the proposal of this online module to the two courses. Among our teachers and students, there was a common belief that this new method would increase the amount of work and would require more dedicated time for the activities from both parties.

Bartolic-Zlomislic & Bates (1999) found in their research that the fact that the course has 24/7 access creates “unrealistic expectations of the course” (Student Preparedness section, para. 3). Teachers and students may believe that they are expected to work online all the time. On the other hand, as the course material and activities are available permanently, students may opt to delay their work. This can affect other students, especially in those activities where interaction and collaborative work is required.

3. Research Methodology

Participants in the study came from the cohort of students entering the first year of the Spanish programme of the UWI in August 2014. The study was conducted over two semesters. The initial group comprised 61 students (54 female and 7 male). However, this changed to 45 female and 4 male giving an overall total of 49 students in semester 2. The first year of the programme was chosen as we strongly felt that students at this level should be
exposed to and ultimately display a command of the online environment as relates to reading and writing in a foreign language.

SPAN 1001 - Spanish Language IA is 13 weeks in length. In week 1 of the online course, students were asked to familiarise themselves with the use of the platform and to complete a general questionnaire assessing both motivation and technological knowledge. One in-class session of one hour’s duration was held at the start of semester and sought to orient students to the platform (myeLearning) and material to be used in the course. This session was repeated at the start of the second semester. The table below gives a comparison of the elements of both the face to face and the online modules. It shows that in the face to face class, students produced 3 tareas (tasks) and 8 written texts which decreased to 3 tareas in the second semester of the online course. However, students now produced drafts (minimally 3) of written assignments prior to submission. Moreover there were no forum interactions in the face to face class but these became mandatory in the online course.

<table>
<thead>
<tr>
<th>Elements of the course</th>
<th>Face to face</th>
<th>Online I semester</th>
<th>Online II semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of final assignments</td>
<td>3 tareas 8 assignments for a portfolio 2 quizzes</td>
<td>10 tareas 2 quizzes</td>
<td>3 tareas 2 quizzes</td>
</tr>
<tr>
<td>Amount of drafts for final Assignments “Tareas”</td>
<td>0</td>
<td>0</td>
<td>3 Drafts</td>
</tr>
<tr>
<td>Contributions in forums</td>
<td>0</td>
<td>at least 4 weekly 4x13(weeks)</td>
<td>at least 4 weekly 4x13(weeks)</td>
</tr>
<tr>
<td>Type of resources</td>
<td>Hard copy texts</td>
<td>Online material (Blogs, wikis, forums, glossaries, e-mail, social media and online dictionaries)</td>
<td>Online material (Blogs, wikis, forums, glossaries, e-mail, social media and online dictionaries)</td>
</tr>
<tr>
<td>Workload</td>
<td>Students</td>
<td>2 hours - face to face weekly 2 hours work at home</td>
<td>Weekly 4-6 hours 54.3% Weekly 6-8 hours 22.9%</td>
</tr>
<tr>
<td></td>
<td>Teachers</td>
<td>Face to face weekly class Class planning weekly</td>
<td>Forum interaction Class planning</td>
</tr>
<tr>
<td>Feedback</td>
<td>Marking as required weekly</td>
<td>Marking</td>
<td>Marking</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------</td>
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</tr>
<tr>
<td></td>
<td>Teacher: Marks on assignments</td>
<td>Students: Qualitative feedback to classmates</td>
<td>Students: Qualitative feedback to classmates</td>
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<tr>
<td></td>
<td></td>
<td>Constant interaction in forums</td>
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<td>Teachers: Constant interaction in forums</td>
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<tr>
<td></td>
<td>Reading material made available on MyeLearning (Moodle)</td>
<td>Reading material made available on MyeLearning (Moodle) and internet</td>
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<tr>
<th>Flexibility</th>
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<td>A fixed weekly class schedule</td>
<td>Activities available during the week 24/7</td>
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Table 1. Comparison of the elements of both the face to face and the online modules.

In the online module, students had ‘Actividades’ as well as ‘Tareas’ to complete each week. These took varied forms and were mainly independent, although ‘foros’ were used to provide students with opportunities to express ideas and opinion through discussion and written interaction. The shorter ‘actividades’ were seen as important to the development of reading strategies, while the longer ‘tareas’ were seen as crucial to providing students with
moments for more thoughtful reflection. Two quizzes were also included and these were conducted online.

At the end of each semester (November, 2014 and April, 2015), students were asked to complete a questionnaire which we created in order to facilitate our evaluation of the modules based on their (student) perceptions. This qualitative data source focussed on the following areas with subsequent guiding statements/questions:

- **Course pedagogical design.** This course is organised in a way that helps me learn / The course assignments and lectures usefully complement each other / The course instructions (material, video tutorials etc.) are clear.
- **Language Competence development.** This course helps me improve my writing in Spanish / This course helps me improve my reading and comprehension in Spanish / This course develops my writing ability to interact with other people in Spanish.
- **Teacher guidance.** The Instructor is helpful when I have difficulties or questions / The Instructor provides meaningful feedback on my work / The Instructor provides meaningful guidance on my progress/work.
- **Student performance.** I participate actively in all / I organise my time so that I meet deadlines well in advance / I review my contributions prior to posting. I guide discussions in for a / How many hours per week on average do you work on this course?
- **Overall course perception.** This course develops my ability to think critically / What is my goal in a Spanish degree? / How satisfied are you with this course? / Considering both the limitations and possibilities of the subject matter and the course, how would you rate the overall effectiveness of the course? / If you could choose, would you rather have face to face or online Reading Comprehension and Writing classes?

The data from the student surveys were gathered, read through and analysed. The results of the survey made at the end of semester I (November, 2014) regarding the heavy workload were taken into account to slightly alter the design of the content of semester II (2015). The course Instructors also gave their assessments of the course through a face to face meeting at the end of the second semester (Instructors meeting, April, 2015). In this questionnaire the Instructors discussed all aspects of the course and reflected on analysing best practice and on improving the course structure. All of this data was collated and is analysed in detail in this paper.

### 4. Results/Findings

**4.1. Materials and Sources**

*Selecting texts in real contexts.* Following the principles of the communicative approach in teaching a foreign language, the selection of texts that made up the course material was determined by their appropriateness to
real life. For instance, a normal activity of the component was to read and get familiar with a digital newspaper article. Afterwards, students were able to produce a written article as close to the authentic material as possible. As one of the Instructors indicated:

“Very often the material I select to work with comes from digital sources. However, if I want the students to work with it in the face-to-face session, I need to print it out and give it to them as a hard copy” (Instructors meeting, April, 2015)

This quotation suggests that face-to-face methodology results in the alteration of the context in which the text was produced. Whereas students of the old module had no choice but to wait to get home in order to access the online material, the students of the online module could access the text in its real platform and in “class time”.

“Many times students were asked to research on a fact or a story and they had to wait to get out of class to connect to the network and visit the pages required to complete the activity” (Instructors meeting, April, 2015).

Additionally, as this Instructor pointed out, the specific dynamics and resources not available in a regular class prevented our students from working with materials in the real context, i.e. the digital context. Thanks to the online module, texts were accessed in the original format and platform.

This aspect also seems to influence the motivation of our students. As one student said: “It was by far more motivating to write my post in a real blog than just on a paper emulating a blog” (SPAN1002 - Students Survey, April, 2015). This comment confirms one of the guidelines of the Communicative Approach which suggests that the more realistic the practice appears, the more motivated the students will be.

Access to learning content 24/7. The learning is not limited to class time. The most positive aspect of the 24/7 access to learning content was that students could take the course activities at their own pace and when they felt most inspired. As one student said: “I prefer the online course because it allows me to complete the assignments on my own timing and schedule” (SPAN1001 - Students Survey, November, 2014). Indeed, the new module required students to make decisions about their work schedule by deciding when to complete the assignments. However, there was one drawback in this regard; problems were observed in tasks that required interaction, especially in those groups where members tended to wait until the end to carry out the activity:

“The majority of the group members this semester I had always waited till the night of the discussion deadline to post things when myself
and a few others would post earlier in the week and wait forever for others to discuss with. This jeopardized my marks with regard to participation and was certainly not fair” (SPAN1002 - Students Survey, April, 2015)

As this comment pointed out, the fact that students could access material whenever they wanted, facilitated some of them working just before the deadline. This was not a general complaint, but a situation that arose in one group and, according to the students, made difficult to carry on this type of interactive tasks. It must be noted that this was also an issue for the Instructor in charge of the group: “I tried to monitor the forums everyday for a while but the majority of contributions were posted close to the deadline” (Instructors meeting, April, 2015). Instructors eventually adapted their own schedules to their students’ schedules. Thus, the dynamics of each group made the experience of each Instructor very different. For instance, in the following quotation, the Instructor notes: “In my group the weekly activity began right after we posted the instructions” (Instructors meeting, April, 2015). Or as another claimed: “Even if I was not connected, most of the activities were completed by Wednesdays” (Instructors meeting, April, 2015).

Therefore, access to learning content 24/7 was perceived as a challenge by some students and Instructors. The exploitation of this aspect of the online module depends on the decision making of the students and the degree of autonomy in their learning process.

Access to a greater number of resources. Given the large number of resources available online, Instructors had to have a much more critical sense in selecting materials. As one Instructor indicated:

“As a teacher, you select the material that you think is serious, appropriate and well written, but you also know that some websites might contain data errors of which you are not necessarily aware” (Instructors meeting, April, 2015).

This comment highlights the importance of instilling critical thinking in students regarding the validity of information available on the web. For both Instructors and students alike, it is necessary to evaluate the authority of the sources.

In the main, students pointed to the large number of resources that the online platform offers as one of the positive aspects. One of the students commented: “When completing course activities it is very easy to jump from one page to another to get additional information” (SPAN1002 - Students Survey, April, 2015). Indeed, online texts are structured with hyperlinks that take the reader from one page to another with ease, allowing the students to delve into topics that attract their attention. Related to this aspect, another
Different types of activities. One of the most positive aspects according to the students was the diversity of activities carried out each semester. This module required two main activities: reading and writing. The online platform gave the opportunity to read and write in different formats and procedures: glossaries, forums, wikis, quizzes, blogs, emails, etc. As one of the Instructors said: “The searching and creation of course material was much easier in this module thanks to the variety of tools available on the net” (Instructors meeting, April, 2015). This quotation suggests that the range of possibilities that all tools mentioned above provide for a class of writing skills was perceived as an advantage by the Instructors.

In addition, it seems that the variety offered more teaching options, and not necessarily more difficulties:

“We used various applications and programs such as wikipedia, gmail or facebook. No explanation was needed because both students and Instructors were familiar with them” (Instructors meeting, April 2015).

When an obstacle presented itself, students were able to overcome the digital challenges:

“There was a task in which we had to make a screenshot of our assignment. I had no idea of how to do it. Now it seems incredible that I
did not know how to do such a basic task” (SPAN 1002 - Students Survey, April, 2015).

The variety of activities is also related to the motivation of the students: “I like the variety of the activities and assignments for each week. It is something to look forward to and it really does capture my interest” (SPAN 1002 - Students Survey, November, 2014).

Capturing the interest of the students is one of the main objectives of educational practice. If we grasp the attention of our students on the course topics, it is guaranteed that they will be motivated to complete the task and reap the benefits of the course. One of the students mentioned an activity of the course:

“I always wanted to open a blog, because I wanted to share my experiences with the rest of the world, but I was not motivated enough to do it on my own. So when we were told to write it, I thought it was a fun assignment” (SPAN 1002 - Students Survey, April, 2015).

Thus, the variety of tools at our disposal became one of the greatest advantages in our online Reading Comprehension and Writing module. Screenshot of the activity "glossary of health" (Semester 2, 2015) in which students had to define a word related to the health field and add a related image


4.2. Students and teachers’ roles

*Intervention not simply attendance.* One of the benefits of the online delivery mode is that participation does not depend on the student's’ attendance. As one Instructor said:
“Normally, in every face-to-face dynamic, there are a few students who do not actively participate. You see them trying to be invisible and leaving the questions to be answered by their classmates” (Instructors meeting, April, 2015).

The confusion between attendance and participation facilitates the mindset of some students who believe that their simple presence in class is valued by the Instructors. However, learning a foreign language requires the practice of skills through an active learning engagement. In the online module, participation was linked to contributions in the forums and not to mere attendance. The perception of the students is that this format demands a more active role from them.

“Many second language lessons are monologues of the teachers, and students contributions take up little class time, but in this course it was just the opposite” (SPAN 1002 - Students Survey, April, 2015).

This active role is also reliant on the efficiency of the module in preventing the student from being tempted not to engage in class, either because of laziness or shyness. As one of our students said:

“I like that we can actively participate in forums and contribute to our classmates’ opinions because sometimes participation in a classroom environment is hindered due to timidity and fear of being wrong” (SPAN 1001 - Students Survey, November, 2014).

This quotation suggests that written communication encourages students to participate more and diminishes the fear of being wrong. It is clear that the ease of their work being amended by written communication encouraged students to participate more. All in all, the fact that the online module required a greater commitment from the students was considered beneficial by both students and Instructors.

Student’s written performance can be followed and evaluated easier by the instructor. The evaluation of the learning process not only involves assigning a grade to the students’ work. In our case, it was essential to give feedback on how to improve writing skills.

“The possibility of having the forum entries of our students recorded every week allowed us to make individual tracking of their written interaction. This monitoring is just impossible in a face-to-face module” (Instructors meeting, April, 2015).

Every successful evaluation goes through a process of monitored learning in which feedback is crucial. This weekly monitoring was intended to
give feedback on different types of mistakes: grammar, vocabulary, coherence, etc.

By contrast, there was a dramatic increase in the Instructor’s workload due to the amount of feedback that the module required. At the beginning of the course, Instructors agreed upon an agenda which entailed that feedback will be given weekly. This task became especially hard in the second semester, when Instructors were enrolled in a greater amount of departmental activities and courses/modules. As one of the Instructors said:

“Weekly feedback was time-consuming. You need to read carefully the contributions, grade them and send it to each of your students with a justification for it” (Instructors meeting, April 2015).

Another Instructor also reflected on this same issue:

“I do not believe it is necessary to correct every sentence or every single post. Most of the time students acted as peer reviewers by asking their classmates for clarification. There is an invisible feedback, it is not explicit, and yet, it works” (Instructors meeting, April 2015).

According to the Instructors, the feedback on students’ work came from other students as well as from the tutors of the course. However, the perception of some students was that the amount of feedback received from Instructors was insufficient:

“The course is designed in a way that facilitates learning, however, the lack of feedback from the tutor made it very difficult to track my progress during the semester” (SPAN1002 - Survey April 2015).

As this quotation implies, the perception of some students was that the comments from their Instructors were crucial to their charting progress in their written skills. Thus, getting the commitment of the Instructors with a realistic schedule is a challenge to be considered for the coming years.

4.3. Results

Greater written production and interaction. Significant among the data sets collected (and previously indicated in the methodology section) is the number of texts that were produced by the students of the component. Summing up forums and final tasks, the minimum number of texts required to pass the component in the first semester was about 10 final tasks and about 40 forum posts. In the second semester, due to the reduction in final tasks, the minimum number of texts to be produced was 3 final tasks and 40 forum posts. Considering that in the former face-to-face modality of this component each student was required to produce 11 texts, the online modality showed an increase in students’ overall written texts production.
Interaction in the face-to-face module was mostly oral and the written texts were produced out of the class. As this Instructor indicated:

“We normally used class time to give explanations on how to write better. When I asked students to produce their own texts there was no interaction, either among them or with me” (Instructors meeting, April 2015).

The online module solved that problem thanks to the forum tool. “We finally interact with each other by written means” (Instructor meeting, April 2015).

To write these tasks and forum posts students also needed to read and reply to each other’s posts.

“They have written more, they have read more. We also gave them more written feedback to read. It is possible that their written skills benefitted from this” (Instructors meeting, April 2015).

Therefore, the student’s practice of reading comprehension and writing production and interaction has been greater. Whether it has been better is an indicator that was not intended to be addressed in this study, even though it would be interesting to do so in a future research.

**Time spent.** Time spent was another of the major challenges of the project. When considering the material of the component, tutors decided to create meaningful learning activities that required active searching for information by students. As a result, students complained that they took too long doing the activities. In fact, the survey conducted at the end of semester 1 showed a ‘disturbing’ factor; 27 out of 56 students said that they spent more than 6 hours per week doing the activities of the module (9 of them spent more than 8 hrs.). As one student explained:

“...during the first half of the semester, there were too many activities to complete before the deadline, which required a lot of time for only one aspect of the course. Sometimes only one activity took more than an hour to complete…” (SPAN1001 - Survey, November 2014).

This was taken into account when creating the course for the second semester. The changes made resulted in 26 out of 35 students who spent less than 6 hours per week working on the component (Survey of April 2015) The same student quoted above continued:

“...But now it has gotten better. The assigned work can be completed within the allotted time and there is no rush to complete the assignments hours before the deadline as they can be easily completed during the week in intervals” (SPAN1002 - Survey April 2015).
Whereas in semester I the dedicated time for the activities seemed to increase the amount of work, student’s feedback on the new methodology in semester II showed that it was possible to adjust the workload to students’ and instructor’s expectations.

**Digital culture.** What began as a challenge: familiarity with digital tools integrated into the course, was meant soon to become a profit. In the Student Survey made at the beginning of the semester I course, nearly half of the students admitted to being wary of online learning. Hence a “Queries forum” was created in order to solve problems related to activities and digital skills:

“After week 5, we started feeling that the students were getting familiar with the platform. In the first half of semester I there were about 7 to 9 posts every week in the “Queries forum”, most of them enquired about the use of the platform. This same forum registered only 1 to 2 posts in the second half of that semester” (Instructor meeting, April 2015).

According to this Instructor, the decrease in the number of enquiries in the “Queries forums” is explained by the increasing familiarity of the students with the platform. The process of learning through the myeLearning (Moodle) platform was directly linked to the improvement of computer skills: “The course allows us to improve our computer skills, which is crucial in the world today” (SPAN 1001 - Students Survey, November, 2014). And this other student who admits that “Thanks to this course, I have discovered Google Drive and now I even use it to make the grocery list” (SPAN 1002 - Students Survey, April, 2015).

As we have seen in the literature review, one of the main challenges of this kind of project is the reluctance of some Instructors to integrate digital tools and sources in their teaching strategies. The Spanish section of UWI was not an exception. After the online course experience, the digital challenge is perceived as: “Writing emails, uploading pictures, doing screenshots... Nothing done in this module should be beyond the capabilities of a member of a tertiary education institution” (Instructors meeting, April, 2015). It also seems reasonable to expect that all members of staff at the Institution get familiar with the myeLeaning (Moodle) platform which is used at the University: “Besides the external tools, this module has forced me to know the ropes of myeLearning” (Instructors meeting, April, 2015). Therefore, the online course experience has improved the digital culture among both students and Instructors. It has also helped them to overcome any reluctance to technology.

**5. Conclusions**
The Spanish Language section of UWI decided to modify the programme from the existing face-to-face modality only to a blended learning programme by delivering online the Reading Comprehension and Writing module. The data gathered in this study suggest that the online course implementation project proved efficient for improving the academic quality, having more advantages than disadvantages at the teaching and learning level, according to both students’ and Instructors’ opinions.

- The following challenges must be taken into account in future applications of the online course:
  - One of these is finding a balanced and fair workload with other modules of the course by reducing either the number or the length of course activities.
  - Future course Instructors need to better inform both students and other teachers about the benefits of blended learning in our programme, which allows students to acquire digital literacy.
  - It will also be essential to establish a working agenda for the Instructors that allows them to provide consistent feedback, as this task is perceived as necessary for students.

This study did not aim to investigate the influence that online delivery had in the acquisition of written skills. Further research on this area is necessary so as to find out whether or not there is evidence of superior results in the written skills of the students who participate in the module.

Nevertheless, several advantages were identified that concern the academic quality of the programme. This module proved to enhance teaching, learning and student development experiences as well as the commitment of students to this programme by:

- Increasing students’ motivation because of the diversity of activities and different roles that students have in online learning. In addition, their participation in the course is not limited solely to attendance but to the intervention in forums. This promotes the modality of active learning.
- Granting students access to more resources in more realistic contexts that facilitate the learning process and allows the realistic practice. This makes the student more communicative, which is a fundamental aspect in teaching and learning foreign languages.
- Creating flexibility in the learning process that encourages autonomy, inviting students to create their own work schedule as they carried out the weekly ‘tareas’ and engaged with the various class activities.
- Increasing written interaction not only among students but also between students and teachers, thereby reinforcing staff-student contact.
- Facilitating student acquisition of necessary digital skills for success in a modern workplace. This is a fundamental attribute of the distinctive UWI graduate.

Perhaps the greatest advantage identified in the online delivery module is the ongoing monitoring and evaluation of students’ writing skills which improves their overall academic quality.

References


