ICT for Inclusive Learning: how Can ELearning Help it?

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1. Introduction

Education is one of the guarantees of equality of opportunities in today's society. It is linked to personal and social fulfillment of individuals. Education is a means of responding to changes that our society suffers with implications in different spheres of people's life, in particular, at work [1]. For this reason no longer make sense to think of an initial formation that supports the entire working life of people. It became necessary to almost constant training, lifelong learning, so that the subject could give an effective response to the challenges that are posed, in particular in its labour market. Allied to these changes in society we find the changes at the level of information and communication technologies. Modern technological media became a powerful ally in lifelong learning to enable people with a personal, family and work active life to continue their education because of the flexibility of time, space and rhythms that they provide [2].

The integration of ICT in the education is a complex process that depends on multiple factors and on several orders. The growing need to update knowledge and to reconcile this with the different aspects of life have made the distance education, in general, and ICT in particular, a powerful ally.

Another side of this study is connected with attitudes and their implications on behaviour.

1.1. ICT & ELearning

The technologies of information and communication are highlighted in our society in various areas and, in particular, in the education field. It's important to know which alterations arise in this field, with this use.

The e-learning may contribute to make the learning process more attractive to students and to create learning environments richer, where students are more active in the building their knowledge [3]. E-learning, in a broader view, must be understood as change in the learning culture. It's extremely important to know the factors that are implicit in the way the knowledge is built in this environment, as well as the ones that difficult or help the process and the relevant conditions that contribute to the refereed process [4].

Because its characteristics and the way of structuralizing the education, the necessity to rethink the concept of learning and the way of equating it, leading to the search of a new pedagogical paradigm, that was more adjusted and that respond to the existing necessities appeared. Allied to this methodological alteration, it was an alteration of mentalities and roles of the intervenient in the process.

1.2. Attitudes

In a simple way attitudes are taken as a form of rapid assessment of a given psychological object. Attitudes tend to be stable over time, resistant to persuasion and a way to predict behaviors. From a functional point of view, attitudes are a form of adaptation to surroundings. It is in this sense that have been made several studies that seek to research the role of attitudes in education and their implications in this field [5].

Several empiric works tried to revalue the consistence of the relation attitude - behaviour concluding that this is influenced by several factors of personal and social order.

The relative importance of the attitudes and of the subjective norms vary consonant the behaviours and the subjects, but it is assumed that both, together, determine the behavioural intention.

Evaluation is the main characteristic of these attitudes, being a rule of inference, which seeks to explain the relationship established between the stimulus that represents the attitudinal object and the evaluative response to that stimulus. Evaluative responses are those that express themselves in terms of approval or disapproval, for or against, approach or separation, repulsion or attraction or similar answers.

2. Method

2.1. Objectives

Our research's aim was, on one hand, to identify how one group of Distance Learning students feels about and evaluate the integration of ICT in education and the elearning on their learning process. On the other hand, to verify their behavior comparing genders.

2.2. Design and participants

A questionnaire designed to this research was developed plus questions about the some elements of identification of our sample.

A total of 80 elearning students participated in the survey, as volunteers; all responses were anonymous. The 26 males and the 54 females had a age range of 26 – 60 years (M = 38.40, SD = 7.51).

2.3. Materials and procedure

The questionnaire was compiled from the literature and it has a structure of a Likert Scale. It include 28 statements. The scale was divided in two sub-scales *Part I - Studends' attitudes toward the use of ICT in educational field* e *Part II - Students' attitudes toward the use of elearning for learning*. The items' evaluation was between Strongly agree and Strongly disagree.

In addition, questions to indicate de number of year in distance learning system, the sex and the age were include.

Participants were asked to complete the questionnaire at their own pace and online.

2.4. Data analyses

Responses were coded according to the sense of the statement, according with this:
Statements: 1, 2, 4, 6 – 10, 12 – 14, 16, 17, 21, 22, 25, 27 and 28
    - Strongly Agree – 4 / Agree – 3 / Disagree – 2 / Strongly disagree – 1
Statements: 3, 5,11,15, 18 – 20, 23, 24 and 26
    - Strongly Agree – 1 / Agree – 2 / Disagree – 3 / Strongly disagree – 4

The fidelity of the scale was studied by calculating the internal consistency of total scale and of the two parties, by the Cronbach's alpha –α. In all analyses, the alpha level adopted was .05.

It was the purpose of this research to examine sex differences.

To verify the agreement and disagreement of the values obtained for each of the parties and the general scale, the result of the sum was divided by the number of items in each part so that we can find the average values between 1 and 4. The first level is the lowest level of agreement and the highest level 4 – Table 1.

Table 1. Level, Average and meaning of evaluation [6]

Level	Average evaluation	Evaluation's meaning
1	1.0 to 2.2	Clear Disagreement
2	2.3 to 2.8	Evaluative Undefined
3	2.9 to 4.0	Clear Agreement

The standard deviation (SD) is also used to identify the consensus of the mean values obtained for each part. The standard deviation is an indicator of low, moderate, or high consensus – Table 2.

Table 2. Level of standard deviation and its level of consensus [6]

Standard Deviation	Level of consensus
0.0 to 0.29	High
0.3 to 0.59	Moderate / High
0.60 to 0.89	Moderate /Low
≥ 0.90	Low

3. Results

3.1. General Questionnaire

The mean score for the 28 items was 85.25 (SD = 6.80). A high Cronbach's alpha value of .80 was obtained.
Then we determine the level of agreement and the degree of consensus on the General Questionnaire – Table 3.

Table 3. Average and SD: General scale

Variable	Average	SD
General Questionnaire	3.04	0.24

The average value per question, in full questionnaire expressed clear concordance of results and a high consensus.

In terms of a global questionnaire the values obtained [t(80) = -.489, n.s] for the variable sex expressing the lack of effect. That is, we accept H0, which refers to the lack of effect of gender on the global questionnaire.

3.2. Part I - Studends' attitudes toward the use of ICT in educational field

The mean score for the 11 items was 33.97 (SD = 2.72). A moderate Cronbach's alpha value of .54 was obtained. As we did before, we will now verify the level of agreement and consensus results in Part I of the questionnaire – Table 4.

Table 4. Average and SD: Part I

Variable	Average	SD
Part I – ICT in Educational field	3.03	0.23

The average value per question, in Part I of the questionnaire expresses clear concordance of results and a high consensus.

When we check the effect of gender on the level of students' attitudes regarding the use of ICT in education [t(80) = -.340, n.s], we found that this effect does not exist . That is, H0 is accepted, ie, no significant differences between sexes in Part I of the survey.

However, this effect can be found at the level of statement 8 [t(80) =-2.26, p<.05] *(Do not use the internet in training is to be exceeded).* That is, men and women differ significantly in how to position themselves against this statement. Men have a higher average in the same meaning that it is they who most agree with this idea.

The results indicate that men and women are positioned similarly with respect to the variable evaluated. The exception, as we have seen, is in to item 8.

3.3. Part II - Studends' attitudes toward the use of elearning for learning

The mean score for the 17 items was 49.24 (SD = 4.88). A high Cronbach's alpha value of .76 was obtained.

Through the results of Table 5 we may analyze the degree of concordance of results and the degree of consensus of the same, with respect to Part II of the questionnaire.

Table 5. Average and SD: Part II

Variable	Average	SD
Part II – Elearning for learning	3.05	0.31

The average value per question, in Part II of the questionnaire allows us to affirm that there is a clear concordance of results. With regard to the level of consensus, the value of the standard deviation, lead us to conclude that there is a moderate/high level of consensus. When we check the effect of gender on the level of students' attitudes regarding the use of elearning in the learning process [t(80) = -1.33, n.s], we found that this effect does not exist. That is, H0 is accepted, i.e., no significant differences between sexes, in Part II of the survey.

However, this effect can be found at the level of statement 14 [t (80) = -2.03, p <.05] *(The elearning introduces greater flexibility in the teaching – learning process).* That is, men and women differ significantly in how to position themselves against this statement. Men have a higher average in the same meaning that it is they who most agree with this idea.

The results indicate that men and women are positioned similarly with respect to the variable evaluated. The exception, as we have seen, is in to item 14.

4. Conclusions

The contexts of ICT use, as well as the goals you want to achieve with its incorporation and its use influence the impact of effective practices and, consequently, the ability to transform and improve learning [7] [8].

This study revealed that generally these students had positive attitudes towards learning using Internet. Although our sample believes it is important and necessary ICT an elearning's usage, in education and apprenticeship, they are aware of their implications and to the need for knowledge of these systems for a better use of their potential. This perception was not gender specific.

It is also important to refer the more autonomy in the learning process means more maturity, more self-discipline and more motivation, by the students. More freedom means more responsibility to do not lose the main objective – the academic formation, the current preparation and acquisition of tools that allow learning throughout life. These new scenarios and learning formats should lead to a change of attitude and of posture towards this entire process. This change must be in both sides – students and professors.

References

[1] Carneiro,R. (2003). *Fundamentos da Educação e da Aprendizagem: 21 ensaios para o séc. XXI*. Porto: Fundação Manuel Leão
[2] Goulão, Maria de Fátima. (2010). 'Distance Learning - A Strategy for Lifelong Learning, in *Horizons in Education,* Gregory, 55-65. Atenas: Papanikos & Nicholas Pappas Editores
[3] Mason,R. & Rennie,F. (2008). *E-learning and Social Networking Handbook – Resources for Higher Education.* London: Routledge
[4] Barberà, E. & Badia, A. (2004) *Educar com aulas virtuales: Orientaciones para la innovación en el proceso de enseñanza y aprendizaje.*Madrid: A. Machado Libros, S.A.
[5] Ajzen, I. (2001). Nature and Operation of Attitudes. *Annual Review of Psychol*ogy, 52, 27–58
[6] Morgado, J. (2000). *A (Des) Construção da Autonomia Curricular*. Porto: Asa
[7] Coll,C. & Monereo,C. (Eds.). (2008). *Psicología de la educación virtual.* Madrid:Ediciones Morata, S.L.
[8] Goulão, Maria de Fátima (2010). How ICTs are changing the educational field (CD-ROM). In *ICL 2010 Interactiv Computer Aided Learning* Proceedings; Hasselt, Bélgica, 15 – 17 Setembro 2010