Student Support in E-learning

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ABSTRACT

Online education is a way to provide a greater number of students to Higher Education. This type of teaching leads to a new way of approaching content. It leads to the construction of knowledge in a more interactive and more cooperative way. For this to happen, pedagogy also changes. New possibilities and new questions arise. The e-students also find other challenges, such as the need for greater autonomy, greater self-regulation capacity. Among the many factors that can be found, there is e-student support to achieve success and avoid dropout. According to Simpson (2012) there are several types of support among them non-academic support or as Ubachs & Konings (2016) point to a pedagogical support. It was on the basis of these assumptions that it was developed a curricular unit for the 1st year of Higher Education. In its structure, in addition to the formal content, forums (Forum Challenges) were placed for collaborative work among students mediated by the teacher. Fifty-two students of both sexes, who were enrolled in this scheme for the first time, participated in the study.

The evaluation that the students made points to a positive evaluation and intend to transpose this knowledge to other curricular units throughout their learning process. Second, we asked that they use 3 words to define the curricular unit. the highlighted aspects refer to methods of study, organization and reflection. We also have planning, responsibility and self-knowledge.

This type of support was considered by the students as one more value for them. They recognize their role in the approach to content. We consider investigations that seek to find ways of support to avoid student's dropout.

Keywords: online education; dropout; e-students; Higher Education; student autonomy

1. Introduction

The European Commission (2017) has emphasized the importance of increasing the skills of the population. To this end, the aim has been to implement more flexible and innovative teaching systems that allow lifelong learning. For this to happen was, and remains, necessary restructuring the education field, particularly in higher education. This concern has opened space for the emergence and development of distance learning.

Online education is a way to improve the number of students in Higher Education. This type of teaching leads to a new way of approaching content. It leads to the construction of knowledge in a more interactive and more cooperative way. For this to happen, pedagogy also changes. New possibilities and new questions arise. The e-students face other challenges, such as the need for greater autonomy and the need for greater self-regulation. Among the many factors that can be found, the support given to e-student helps achieving success and avoid dropout. According to Simpson (2012) there are several types of support among them non-academic support or as Ubachs & Konings (2016) point to a pedagogical support.

1.1. The context: Characteristics and challenges

As we said before the social conditions and the evolution of technology are strong allies of the emergence, implementation and development of online education. This is characterized by its spatial and temporal flexibility, as well as the means to be used to design learning. Teachers and students do not need to be in the same physical space and at the same time point for the pedagogical relationship happen. It is projected into the ubiquity of space and time. The virtual classroom allows geographically dispersed students to meet and share experiences, to work collaboratively. They can prepare their learning activities asynchronously or synchronously, if agreed in advance and according to the purpose of the task. Wankel & Blessinger (2013) refer to Web 2.0 as a social technology that allows the constitution of a global learning community. "Social learning that fosters collaborative and participatory learning" (page 7). This is another dimension of learning, communication and interaction between subjects, content and resources at their disposal. This type of technological resources facilitates interaction and promotion of collaborative learning.

The online education has undergone changes and updates according to the needs and the evolution of technology. It is necessary that the institutions of Higher Education follow these evolutions and incorporate them in their practice if they want to continue to compete in the technological society. This type of teaching is not distinguished from face-to-face teaching only by the introduction of technology. This by itself is only one element / factor in the equation. It is not a matter of translating the contents of a face-to-face teaching into a technological platform. Much more than this needs to be done. Conceição & Lehman (2011) recall that it is necessary to take into account that teachers need to learn how to use technology and how to adapt content in this system so that learning can happen. The teacher is asked, in addition to his theoretical knowledge about the content that it teaches, to appropriate the same, in pedagogical / didactic terms supported by technology. The curriculum of a course needs to be outlined taking into consideration the student learning promotion for a particular educational purpose. This means, it needs to be a student-centered curriculum.

In addition to the curriculum design, the teacher must also develop it by seeking to adapt its strategies and the technical means at its disposal considering the needs, interests and objectives of each individual. It should equip students with skills that make them more autonomous in their learning experience. To this end, it must equip students with instruments to enable this to happen.

It is also up to the teacher to manage the students' expectations. As can be seen, the teacher's role changes. In the traditional conception of learning the teacher is seen as the holder of the knowledge and that transmits it to the student. We now have a more interactive learning, students

have a more active role in the construction of knowledge (Goulão & Henriques, 2018). It goes from being a transmitter of knowledge to be a facilitator of learning using the technological means at its disposal to achieve the objectives.

The option for online learning in a higher education institution must be accompanied by constant research to promote innovation which should cover not only the technical aspects, but also educational. According to Ubachs & Konings (2016), Institutions developing and delivering e-learning programs should have a comprehensive set of policies that relate to the effective provision for delivery of teaching materials and student support services" (pág.24).

Online learning and pedagogical support for students

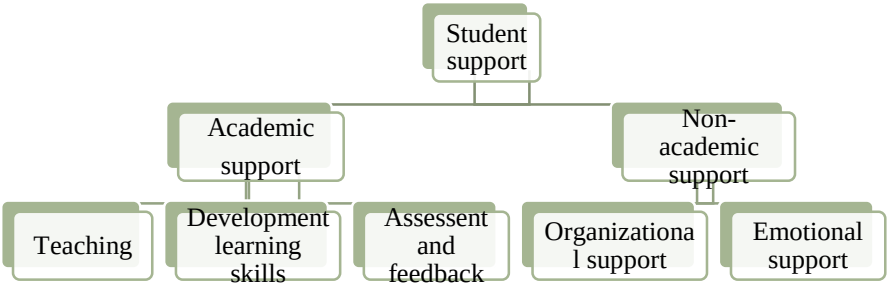
The adult student who needs to continue his / her higher studies is a different student, with different needs comparing to the more traditional student (Wankel & Blessinger, 2013). That is why, institutions need to have a training offer that presents a "value" to the student, which leads them to have a higher level of employability.

It was in this context that the acceptance of online teaching led to a strong implementation in various parts of the world. However, one of the concerns that underlies it is the high number of students who drop out without completing their course. In this regard Simpson (2012) states "Because, apart from issues of access, cost and quality, there is a very serious elephant in the distance education room - the elephant of student dropout" (p.6). This finding has worried the institutions where the distance education exists.

This situation has led to the development of various investigations to understand the reasons underlying failure and especially how this can be mitigated. Some researches (Paniagua & Simpson, 2018, Simpson, 2015, Fazio at al, 2000, Ubachs & Konings, Aggeliki Fotiadou et al., 2017) are carried out to understand what support online students need to ensure that the number of dropouts decreases.

Simpson (2012) states that the qualities and skills that a student must have to ensure their success in a distance learning environment can be grouped into three broad categories - *cognitive, emotional and organizational* (p.15). These categories in turn and according to this author, are divided into two major groups - academic support and non-academic support - Fig.1

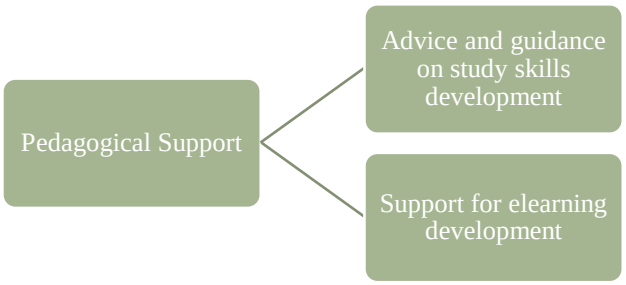
Figure 1. The structure of student support



(Source: Simpson, 2012, p.17)

Ubachs and Konings (2016), also point to a set of supports to be considered in this education system. Among these supports we find what they call Pedagogical support - "Support for learning is at the core of student support (...) E-learning may require students to acquire new skills or adopt new learning techniques" (p.140).

Figure 2. Ubachs a& Konings (2016) students support



(Source: the own)

The role of these supports would be to ensure that students develop skills to help them become better learners and thus ensure their success.

2. Methods

2.1. Research objectives

The objectives of our work were

a) In general, to know the evaluation of the students to the formal curricular unit X and designed to support the students in their learning process.
b) Check whether there were significant differences between genders.
   - H0 = There are no significant differences between men and women in how to evaluate, in general, curricular unit X.
   - H0 = There are no significant differences between men and women in how to evaluate, in their different dimensions, curricular unit X.
c) To know how the students define the curricular unit X

2.2. Participants

Our sample included 112 undergraduate level adult's students in online context. These students were recruited from the Z course. The sample included 16,1% men, and 83,9% women. The average age for participants in the study was 39.01 years with a standard deviation of 7,626 years. All participants were from an online university and they are at their 1st year.

2.3. Procedures and Instrument

A questionnaire designed to this research was created. The questionnaire was split in 3 parts. The first is related to characterization data of the sample (gender and age). The second part concerns the evaluation of curricular unit X. This part has the structure of a Likert Scale. It include

23 statements. The rating scale ranges from 1 (Strongly disagree) to 4 (Strongly agree). The second part is subdivided into 5 dimensions. They are:

Table 1 - Dimensions of the 2nd part of the questionnaire and its operationalization

Dimension	**This means**	**itens**
Dimension 1: Content approach	The evaluation of the forms and the means used to approach the contents of the curricular unit	7
Dimension 2: Usability	Evaluation of how students perceive the exploitation of content in different media to achieve their learning objectives.	3
Dimension 3: Professor	The evaluation of the teacher's behavior in the management of the curricular unit and the effective monitoring of students.	5
Dimension 4: Skills	The evaluation of the contribution of the curricular unit to acquire skills linked to a student's self-knowledge and their contribution to improving their self-regulation	5
Dimension 5: Knowledge transfer	The evaluation of the impact of the knowledge acquired in this curricular unit in the approach to other curricular units	3

The third part concerns the general evaluation of the curricular unit. It is composed of three questions. Two intend to evaluate the students experience in the curricular unit. For this, they had a Likert scale of 5 points [1 (Nothing important) to 5 (Very important)]. In the last question we used the Free Word Association Test. We wanted students to define the curricular unit using three key words for them.

The questionnaire was administered to the participants via “Google Docs”, in the end of first semester. The link to the questionnaire was in the curricular unit X. Students were informed of the nature of the questionnaire and completing it was optional.

2.4. Data analyses

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

The purpose of this research was to examine gender differences.

To verify the agreement and disagreement of the values obtained for each of the parties and the general scale, the result of the average was divided by the number of items in each part so that we can find the average values between 1 and 3. The first level is the lowest level of agreement and the highest level 3 – Tab 2.

Table 2. 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

Source: (The own)

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 – Tab. 3.

Table 3. 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

Source: (The own)

3. Results and Discussion

3.1. General Questionnaire – Part 2

The mean score for the 23 items was 84.71 (SD = 7.605). A high Cronbach's alpha (α) value of .95 was obtained.

Then we determine the level of agreement and the degree of consensus on the General Questionnaire – Tab 4.

Table 4. Average and SD: General scale

Variable	*Average*	*SD*
General Questionnaire	3.68	0.33

Source: (The own)

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

In terms of a global questionnaire the values obtained [t(112) = .394, p=.694] for the variable gender show us the lack of effect this one represents. That is, we accept H0, which refers to the lack of effect of gender on the global questionnaire.

3.2. Dimensions of the questionnaire

3.2.1. Dimension 1: Content approach

The mean score for the 7 items was 25.43 (SD = 2.55). A high Cronbach's alpha (α) value of .83 was obtained.

As we did before, we will now verify the level of agreement and consensus results in Dimension 1 of the questionnaire – Tab. 5.

Table 5. Average and SD *per* item: Dimension 1

Variable	Average *per* item	SD
Dimension 1 Content approach	3.63	0.36

Source: (The own)

The average value *per* item, in Dimension 1 of questionnaire expressed clear concordance of results and a Moderate/high consensus.

The value obtained in the T statistic [t(112) = -.330, p=.742], relative to this dimension leads to the acceptance of H0. That is, there are no significant differences between men and women in the way they position themselves in this dimension.

3.2.2. Dimension 2: Usability

The mean score for the 3 items was 10.75 (SD = 1.44). A high Cronbach's alpha (α) value of .88 was obtained.

As we did before, we will now verify the level of agreement and consensus results in Dimension 2 of the questionnaire – Tab. 6.

Table 6. Average and SD *per* item: Dimension 2

Variable	Average *per* item	SD
Dimension 2 Usability	3.58	0.48

Source: (The own)

The reading of these results allows us to say that there is a high level of agreement and a moderate level of consensus.

The value obtained in the T statistic [t(112) = .446, p=.656], relative to this dimension leads to the acceptance of H0. That is, there are no significant differences between men and women in the way they position themselves in dimension 2.

3.2.3. Dimension 3: Professor

The mean score for the 5 items was 18.02 (SD = 2,29). A high Cronbach's alpha (α) value of .92 was obtained.

The following data relate to the level of agreement and the level of consensus in Dimension 3 – Tab.7

Table 7. Average and SD *per* item: Dimension 3

Variable	Average *per* item	SD
Dimension 3 Professor	3.60	0.46

Source: (The own)

At the level of agreement the average is at level 3 pointing to a clear level of agreement. With regard to consensus we are at a moderate / high level. At the level of dimension 3, there are also no significant gender differences [t(112) = .370, p=.712].

3.2.4. Dimension 4: Skills

The average score for the 5 items was 19.10 (SD = 1.62). A high Cronbach's alpha (α) value of .89 was obtained.

The values presented in Table 8 allow us to affirm that there is a clear level of agreement and a high level of consensus.

Table 8. Average and SD *per* item: Dimension 4

Variable	Average *per* item	SD
Dimension 4 Skills	3.82	0.32

Source: (The own)

Still in relation to this dimension, and as in the other dimensions, there are no significant differences between gender [t (112) = 1.39, p=.165].

3.2.5. Dimension 5: Knowledge transfer

The mean score for the 3 items was 11.41 (SD = 1.04). A high Cronbach's alpha (α)value of .83 was obtained.

In table 9 we find the values that allow us to affirm that there is a clear agreement and a moderate / high consensus in the responses to this dimension.

Table 9. Average and SD *per* item: Dimension 5

Variable	Average *per* item	SD
Dimension 5 Knowledge Transfer	3.80	0.35

Source: (The own)

Lastly, we found here the pattern that has been observed in the other dimensions regarding the differences between men and women. That is, there are no significant differences between genders [*t (*112) = .097, p=.923].

3.3. General evaluation of the curricular unit

We will then present the values of the statistics of these two questions (Tab.10)

Table 10. Statistics part 3

	Average	SD	Mode	Máx.	Min.
a) On a scale of 1 to 5, what evaluation do you make of your experience in this course unit?	4,43	.625	5	3	5
b) On a scale of 1 to 5, what is the overall assessment that makes this course unit?	4,57	.565	5	3	5

Source: (The own)

As it can be seen (Tab.11), the students who attended the X curricular unit considered, for the most part of students, that their experience was very important. Also for most students, this curricular unit, in general, was very important.

Table 11. Results part 3

a) On a scale of 1 to 5, what evaluation do you make of your experience in this course unit?		
Scale Score	**Freq.**	**%**
3	8	7.1
4	48	42.9

5	**56**	**50**
b) On a scale of 1 to 5, what is the overall assessment that makes this course unit?		
3	4	3.6
4	40	35.7
5	**68**	**60.7**

Source: (The own)

3.4. Definition of curricular unit X

In the third part of our questionnaire we used the Free Word Association Technique to get us to the definition of curricular unit X. For the application, participants are asked to write three words considering the word or the concept inducer (stimulus). In our case, the concept-stimulus was curricular unit X. Based on this technique we found seventeen main concepts with semantic similarity. According to their typology, these concepts were grouped into three broad areas that answer the questions: What is it? How? Why? (Table 12).

Table 12. Main concepts

Group 1 – *What is it?*	Freq.	Group 2 – *How?*	Freq.	Group 3 – *Why?*	Freq.
Functional	23	Organization / Planning	31	Methods of Study and Learning	28
Essential	20	Objectivity	9		
Enriching	5	Reflexivity	9	Learning process	10
Motivator	11	Study aid	9	Education	
Effective	12	Experiential	14	Self-Regulation of Learning	15
Inviting	9	Overcoming	5		
				Self	20
				(Autonomy / Self-learning / Self-knowledge / Self-assessment / Self-confidence)	20

Source: (The own)

In figure 3 we find the iconographic representation of the answers in globality.

Figure 3: Iconographic representation of the design curricular unit X

Source: (The own)

The students evaluated, globally, the experience they had in the curricular unit X as very important.

By the values of α, in general, and in the dimensions, we can understand that it is a robust evaluation element for the purpose that was conceived.

From the above results we find that the gender variable is not relevant to the way the curricular unit X is evaluated in its general structure, as well as in the different dimensions.

Dimensions 4 and 5 were those that obtained higher values of agreement and that more consensus gathered in them. At the other end we have dimension 2, with a lower value at the level of agreement and the one that has less consensus among the students.

The acquired skills dimension and the knowledge transfer dimension, when obtaining the highest levels, point to the fact that the objective of the curricular unit is being fulfilled. By that we mean, the curricular unit gives the students skills to better understand their own methods of learning. Which give them the opportunity to be more self-regulated and more autonomous in their process of study. These same competencies are not limited by the approach they take in unit X. This knowledge can be transferred to the approach to other curricular units of the course.

Other dimensions, despite their relevance, are presented as structuring this process.

The results of the second part and the third part of our data collection instrument are reinforced by the way students conceive and evaluate the curricular unit X. For these students, the curricular unit is seen as *functional* and *essential* as it addresses the issues of *organization / planning* of study in a way, not only theoretical but also practical - *Experiential*. Students are faced with tasks that require them to put into practice the theoretical knowledge. In the perception of these students this happens by allowing them to know themselves as learners, their strengths or limitations and, with that, to be more *self-regulated* in their learning process. This knowledge helps students become more *autonomous,* with more *self-confidence*, promoting a more appropriate *self-evaluation*.

4. Conclusion

It was our concern to know the evaluation that students made to unit X, the nuances that could exist in terms of gender and how they defined it.

Our results point to a positive evaluation of the students, understanding that the knowledge they developed in the course unit can be applicable in other curricular units. What moved us into designing and developing this curricular unit within a formal undergraduate course was to provide students with not only theoretical knowledge about how to learn but also to give students guidance for other curricular units. Motivation (Lehaman & Conceição, 2014), such as self-confidence as learners and being able to manage their study time, are essential factors skills that need to be reactivated or acquired by the students so that they feel more adapted to their role, particularly in an online teaching environment. To this end Ko and Rossen (2017) "(...) students accustomed to traditional classroom procedures must make unexpected and often jolting adjustment to their study habits" (p.293).

The studies point to the importance of meta-knowledge and strategies of self-regulation of learning as factors that promote student success.
The promotion of situations that lead the students to know each other better reinforces their capacity for autonomy.

We believe, therefore, that situations that lead to the acquisition of formal content, but which provide the possibility for students to get to know each other better, recognizing their strengths and weakness, strengths their autonomy.

Online teaching points to the need for the learner to be more autonomous, to be more self-regulated in their learning process, as these characteristics are fundamental to increase their success.

We believe, therefore, that situations that lead to the acquisition of formal content, but which provide the possibility for students to get to know each other better, recognizing their strengths and strengths, and thus strengthening their autonomy.

Online teaching points to the need for the learner to be more autonomous, to be more self-regulated in their learning process, as these characteristics are fundamental to increase their success.

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