



The Promotion of Self-Reflection in Students in Online Education: The Use of Exam Wrapper

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Abstract

The ability to self-regulate learning is an important factor in the learning process. Students must be capable to analyze their learning path and know how to adapt their strategies to the demands of the task to achieve success. Our results were obtained from 67 students online, 76.1% female and 23.9% male. Their average age is 37.7. The results point to a primacy in the choice was the reading of the texts of the course in question. These students indicate that they used, on average, about 12.7 hours to prepare the moment of evaluation. Regarding their perception of self-reflection, there was a high consensus regarding promotion to help study habits. They plan to use this methodology in other course units. Our results also point to a positive and significant correlation (95%) between the number of hours of study and the classification they hope to obtain. In conclusion, from the responses obtained, it was found that students understood the purpose of this reflection and that from this they were able to perceive some aspects that should be considered at another time of evaluation. This leads us to believe that this induced self-reflection produced the expected results.

Keywords: *Online learning, adult students, Learning self-regulation, metacognition.*

1. Introduction

Online teaching has become an increasing experience for numerous people. Changes in the social, economic and technological level were in the root of this increase. This led to the need to obtain new skills and / or reformulate old ones, leading individuals to look for ways to fill this need [1]. Online education was the answer found that allows a large number of people to obtain their studies [2]. It clearly has a great advantage over face-to-face teaching due to its flexibility of space, time and pace. The success for a large part of these students, is related to their ability to self-regulate their learning and their metacognitive capacity.

There are several factors converging that make the learning process happen. Knowing how each one adapts and transforms information into knowledge can help make this process more meaningful. Metacognition is the knowledge about the learning process itself. It is understanding how to learn over a period of time, what strategies to use. It is, therefore, the ability to find, evaluate and use information. These too can be changed over time in order to give a more appropriate response to the learning situation and, thus, ensure a better knowledge of the situations. Metacognitive resources can be developed, improved, adequate and to do that strategies are used to promote this development.

This implies that learners are autonomous and responsible in their own learning process. For Flavell [3][4], metacognitive knowledge involves three key variables:

1) Self-awareness: The ability to analyse strengths and weaknesses and how to overcome them.
2) Task analysis: It deals with what students know about the task and what they need to do to achieve success.

3) Strategy selection: Here are the problem-solving strategies that allow learners to understand and comprehend new knowledge.

We have, then, that metacognition promotes responsible, self-reflective and knowledgeable learners of their own learning processes in order to be able to exercise control over their apprenticeship. By placing the emphasis on metacognition, we are facilitating lifelong learning. This is because a learner who knows himself as such (his strengths and weaknesses, how his thinking is structured) is better prepared for the learning situations that occur throughout his life. Flavell [3] is considered the founder of the concept of metacognition, which, according to him, involves active monitoring and self-regulation of cognitive processes.

There are ways to help develop this metacognitive ability. Among these techniques are the Exams Wrappers [5]. This type of intervention can help improve students' metacognition. A wrapper exam is a way for students to reflect, in a structured way, on their assessment test and understand the result of their performance [6]. Wrappers exams guide students to reflect on three important components for learning — study skills used, type of mistakes made in the test and the necessary adjustments for future assessments (changes to study habits to better prepare for the next one) evaluation) — Figure

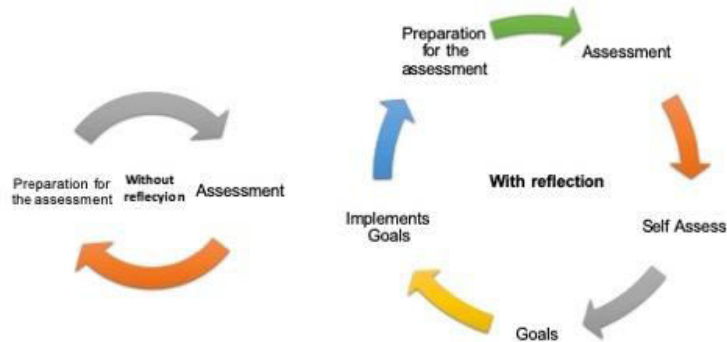


Figure 1. Differences between the study with and without reflection

The implementation of this tool aims to help students to understand their metacognitive skills to take them into account in a future evaluation. Thus, identifying study strategies to improve their classification [7] Pate, Lafitte, Ramachandram and Caldwell [8] refer that, although it is necessary to know the true impact of wrapper exams, they can be used as a way to promote lifelong learning. The recommendations of the study carried out by Gezer-Templeton, et al [7] go in the same direction when they state that students report, as positive, the use of this type of tool and plan to use it in the future.

2. Methods

2.1. Research objectives

Our research's aim were

- Determine students' expectation about their grades and time spent preparing to do the assessment;
- Measure the association between expected grade and time spent preparing for an assessment;
- Identify strategies used to prepare for the assessment;
- Identify students' perceptions regarding a self-reflection exercise and its usefulness to aid studying and, on their grades, and future assessments.

2.2. Procedures and Instrument

For the data collection, an Exam Wrapper was built. This consisted of 3 distinct parts. The first part concerned identification data. The second part was divided into 4 aspects — Classification to obtain, Preparation time, Activities used and changes for the next evaluation period. Finally, the 3rd part perception about this type of self-reflection, with regard to its help to improve study habits, classification and the hypothesis of applying this methodology in other curricular units of the course. We therefore have the following composition:

- How did you prepare the exam?
 - Activities
 - Time
- What changes for the next assessment test?
- What perception about the implications of this type of self-reflection?
 - Study Habits
 - Classification
 - Application in other curricular units.

We used the Exam Wrapper at the moment immediately after the delivery of the first evaluation work and before they know the evaluation. The Exam Wrapper was made available online and the link to it was introduced in the message to students to take it. All students are studying online, in the 1st and 2nd year. The response to the Exam Wrapper was made voluntarily.



3. Results

3.1. 67 students participated in our study who are studying online. Of these, 76.1% are female and 23.9% are male. Their average age is 37.7 (SD = 7.9), with a minimum of 19 and a maximum of 51 years.

3.2. We will proceed to the presentation of the data from parts 2 and 3. We will proceed to present the following data.

1. *What evaluation do you expect to get on your A-folio (assessment test A)? (indicate only one number)*

Table 1. Expected evaluation

Average	SD	Mode	N
2.8	0.70	3.0	52

We found that these students estimated that, on average, their rating will be 2.8, on a scale of 0 to 4. This question was not answered by 25 students.

The data in table 2 refer to the average preparation time to carry out this assessment.

2. *Approximately, how much time did you spend preparing for this folio (assessment test)? Please calculate an estimate in hours and do not use intervals*

Table 2. Hours of preparation for the assessment

Missing	Average	Mode	SD	Min.	Max	N
2	12.7	8	12.8	0	64	65

As can be seen, the preparation average time was 12.7 hours, with a wide range between the minimum and maximum time.

We now proceed to present the results obtained from the last question of this group. It is associated with the learning activities that this group of students used in their preparation for the assessment test (e-folio A). The values obtained are illustrated in the 7 graphs that follow and grouped in Table 3.

Table 3. Study activities used

	Average	SD
2.1. Read the course unit texts	38.0	25.3
2.2. Consult diagrams and videos	26.1	26.8
2.3. Review notes	20.0	24.6
2.4. Make study material: notes / schematics / concept map	27.5	22.8
2.5. Study in a group or with a friend	7.8	18.7
2.6. Apply self-questionnaire	9.8	17.0
2.7. Consult material external to that indicate in the uc	15.83	21.7

We found that the activity most used by these students was Read the course unit texts. On the other hand, the least used was Study in a group or with a friend. We also found that there is a wide dispersion in the selection of the various activities.

We now proceed to present the data of the 3rd part regarding the perception of this type of self-reflection. This part consists of 3 questions on a 4-point Likert scale, ranging from strongly agree (4 points) to strongly disagree (1 point). In it, we intended to analyse the extent to which this type of self-reflection can help to improve study habits and, also, their classification. Finally, if you think it is important to apply this reflection to other curricular units in your course. The results are as follows in table 4.



Table 4 . self-reflection

	<i>This type of self-reflection helps me to improve my study habits</i>	<i>This type of self-reflection helps me to improve my ranking</i>	<i>I hope to apply this type of self-reflection in my other curricular units</i>
Average	3.67	3.42	3.65
Mode	4	4	4
SD	.504	.655	.595

From the results obtained, we found that, for these students, this type of self-reflection helps them to improve their study habits and, with that, their classification. This can also be extended to other areas of study.

Finally, we tried to study whether there was a relationship between the number of hours it took to prepare the assessment with the rating they expected to obtain. To make this analysis we used Pearson's correlation coefficient. We can see from the value obtained by this statistical test that there is a significant positive correlation between the number of hours of preparation and the estimated classification, $r = .30$, $p = 0.031$. Thus, a greater number of hours of preparation is associated with a higher estimated rating.

Finally, analysis of the question

Based on your answers to the previous question, please indicate at least three items that you plan to do differently in preparation for the next assessment,

refer us to the questions of Time, Planning, for more Participation active in the study process, as well as the reinforcement of some forms already used.

Table 5. New study activities

Activities		Operationalization
Time Issues	11	Spend, manage, ...
Planning	8	From study, activities, ...
Participation (more active)	7	In the forums, with a colleague, in a group, ask more questions
Form	21	Annotations, Concept maps, Schemes, Abstracts, apply self-questionnaires, consult more material, do more research.

4. Conclusion

Lifelong learning has become a constant in today's societies. With this, the growing need for each one to know himself as a learner. Knowing our strengths and weaknesses is important in a learning situation. This self-knowledge, this metacognitive knowledge is a key element in ensuring success. In this sense, it is important to use strategies that help students to promote their metacognition. Wrapper exams are an example of this. The work of Schuler et al. [6], after using this instrument, points to an improvement in metacognition. The results of Soicher & Gurunk [5] go in the same direction. Our study, just as an intervention, points to a recognition of the importance of such an analysis, as well as its extension to other curricular units. As a future suggestion, we think it is pertinent to use the wrapper exam at all times of assessment, as well as to explore with students their answers, in particular, those related to their study strategies

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