

## **ARE EPORTFOLIOS EFFECTIVE TOOLS TO PROMOTE SELF-REGULATION? AN EXPLORATION OF STUDENTS SELF-PERCEPTIONS**

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### **I.INTRODUCTION**

The promotion of self-regulation in higher education has become more and more relevant over the last decades since a growing number of research studies have established the link between self-regulation and learning performance (Cheng, 2011; Goulao & Cerezo Mendez, 2015; Macejka, 2014).

According to Bjork et al. (2013) for learners to become effective in the learning process they should not only be able to assess accurately the states of their own learning, but also be able to manage their own learning and activities in response to such monitoring.

The self-regulated learners, from a metacognitive point of view, can make decisions that regulate the selection and use of different forms of knowledge. They do this by planning, organizing, implementing, managing, and evaluating the whole process (Goulão, 2013).

Within this context, e-portfolios have attracted significant interest because of their potential to encourage and promote learner autonomy and self-assessment. They have been proved as useful pedagogical tools that emphasize the student's role in constructing understanding and the teacher's role in promoting understanding. While using e-portfolios students are encouraged to reflect on their learning, set learning goals, monitor their learning process, and self-evaluate. Consequently, e-portfolios seem to be a way to promote autonomy and self-regulation in students.

Reflection is the cognitive process that develops these metacognitive strategies and makes portfolios relevant. Without reflection, a learning portfolio would only be a dossier, a collection of works. However, students do not simply collect pieces of work, but undertake a reflection process through which they decide the samples to be included and why. Documenting is not only compiling work but also wondering about it. Consequently, a learning portfolio should include documentation, cooperation, and reflection (Blanch & Gimeno, 2011).

Reflecting on one's own learning process is not something most students are familiar with, and they need to be trained. Teachers play here a very important role since it is their duty to teach them how to do it guiding their reflection on what they have learned but also on the feelings and motivations related to learning and what they did to achieve their goals (Cash, 2016). A learning portfolio can be the right space to promote this student-teacher thinking process.

Considering the implicit characteristics of e-portfolios to develop reflection and self-regulation, our aim was to significantly increase this potential, by explicitly integrating the structure of self-regulation within a learning portfolio. In order to do that, we used Microsoft OneNote to build a self-regulation e-portfolio that would be user friendly and easily adaptable to the students' needs.

Within the different models of self-regulation, we followed the three-phased cyclical model proposed by Zimmermann (2000): Forethought, Performance and Self-reflection. These three phases were adapted to our e-portfolio following Pérez-Cavana's Personal Development Planning model creating the following pedagogical cycle (2019):

- Forethought – (Identifying / Planning)
- Performance – (Action /Recording)
- Self-reflection – (Reviewing / Evaluating)

This self-regulatory e-portfolio was aimed at facilitating the reflection process through the learning cycle proposed and the questions included in each of the sections to guide the students in their first experience with a tool of these characteristics. This paper presents an original contribution on how students have perceived how their own learning changed or improved while working with a self-regulatory e-portfolio.

## **II. OBJECTIVES**

- To increase the link between e-portfolios and self-regulation by explicitly integrating the structure of self-regulation in an e-portfolio.
- To measure the impact of e-portfolios on students' self-regulation.
- To investigate the students' self-perceptions of e-portfolio use.

## **III. METHOD AND MATERIALS**

### **1. PARTICIPANTS**

Participants included 56 students (48 female) from a large university in Spain. These students were in their third academic year at the time. The participants were all enrolled in the Pre-Primary Education degree and the study took place within their work in the subject English and its Didactics.

### **2. MATERIALS**

A mixed-method approach was used: a combination of a survey and qualitative thematic analysis of the students' reflections on their engagement with their e-portfolio.

An online survey was elaborated ad hoc using Microsoft Forms. The survey was integrated by 12 Likert-scaled questions that answered to the objectives set for this research. The questions were into six different dimensions: Identify, Plan, Action, Record and Review (to match our e-portfolio sections) and one more that summarized their general impressions towards the self-regulation e-portfolio. The survey was reviewed by experts following the Delphi method (Reguant & Torrado, 2016).

A descriptive analysis of the collected information was also carried out using the statistics program Statistical Package for Social Science v.27.

### **3. PROCEDURE**

In order to explore the impact of e-portfolio use, an e-portfolio was created as explained earlier. Students worked with the e-portfolio during their term with the teacher's guidance and, when the term was over, they were asked to complete the survey as well as a document with open questions regarding their perceptions on e-portfolio use.

#### IV. RESULTS

The questions included in the survey are summarized in Table 1. All the questions related to the pedagogical cycle (Identify-Plan- Action- Record-Review) start with the sentence: *Working with the e-portfolio has helped me to...* but have been summarized in the table for space reasons. The last three questions refer to their general perception when working with the e-portfolio (General).

**Table 1**

*Means, Mode and Standard Deviation of survey questions results*

<b>Dimensions</b>	<b>Questions</b>	<b>M</b>	<b>Mo</b>	<b>SD</b>
Identify	identify learning goals	3.76	4	0.84
Plan	plan my work	3.78	4	1.08
Plan	monitor learning process	3.66	4	0.83
Action	be aware of decisions	3.46	4	0.91
Action	keep control of my work	3.71	4	0.98
Record	keep evidence of my work	3.89	4	0.98
Review	reflect on my learning process	3.69	4	1
Review	self-evaluate	3.85	4	0.85
Review	make changes in the way I learn	3.46	3	0.87
General	I would like to use in other subjects	3.33	4	1.04
General	it has met my expectations	3.53	4	0.80
General	general degree of satisfaction	3.45	4	1.04

Table 1 summarizes the results obtained in the survey. The questions are categorized according to their corresponding dimension. It can be noticed that in a 1-5 scale, the mean for all the questions is higher than 3.2. All the scores range from 3.3 to 3.9.

Results show that the most highly rated question was the one that refers to the Recording function of their portfolio. 83.64 agreed or strongly agreed with the statement *Working with the portfolio has helped me to keep evidence of my work*.

The statement *Working with the e-portfolio has helped me to self-evaluate my work* was also valued with a 3.9 mean. 74.21% of the students strongly agreed or agreed with it. Within the Review dimension, the statement *Working with the e-portfolio has helped me to make changes in the way I learn* which belongs to the same dimension, had one of the lowest scores (3.5).48.21% of the students strongly agreed or agreed with the contribution of the portfolio to provoking changes in their way to learn.

As for the questions referred to the general dimension of working with their e-portfolio, the students valued their general degree of satisfaction with a 3.4 out of 5. Very similarly, they also valued their degree of met expectations with a 3.5 and with a 3.3 the possibility of using it in other subjects.

As regards the descriptive analysis, students were asked about the positive and challenging aspects of working with the e-portfolio. With respect to their perception of the positive aspects, several themes were identified: organizing work, reviewing for the exam, highlighting learning goals, reaching conclusions after each unit, and realizing strengths and weaknesses.

The thematic analysis also highlighted some aspects that were considered challenging or difficult: students seemed to feel that it was quite time-consuming at the beginning. Making OneNote work was also mentioned since there are different versions of the application.

## V. DISCUSSION

The results strongly suggest that students perceived working with their self-regulation e-portfolio as useful: it supported their learning and helped them to feel they were in control of their learning. Students considered e-portfolios as an innovative tool that was practical for their learning.

A further promising finding seems to be the students' realization of e-portfolios as a valuable tool to keep evidence of their learning and to help them self-evaluate, thus demonstrating the dual nature of e-portfolios, as a workspace and as showcase (Barrett, 2010).

Our study suggests that even a short experience with e-portfolios shows an impact on the students' approach to learning. E-portfolios have helped them to raise awareness on their learning goals, their learning process, and their evaluation of their own learning, therefore, we can conclude that e-portfolios encourage the necessary reflection to promote self-regulation (Cash, 2016).

We started the study with three objectives in mind: integrating self-regulation in an e-portfolio to increase their link, investigating the students' perceptions on e-portfolio use and measuring the impact of a self-regulation e-portfolio on students' self-regulation. It can be concluded that the self-regulation pedagogical cycle used to create the e-portfolio helped to make the relationship between e-portfolios and self-regulation clear, that students' perception towards the tool is overall positive and that it does have impact on their self-regulation. Working with e-portfolios for longer periods of time, adapting self-regulation e-portfolios to the students' needs and highlighting e-portfolios potential for replication in other areas are the future research lines that could be explored more in-depth in further investigations.

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