

The impact of Continuous Assessment on a temporal perspective: the results of a pioneering experiment at the University of Barcelona (Spain)

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Abstract

This study completes the works by Gallardo, Montolio and Camós (2010) and Gallardo and Montolio (2011) and brings new evidence on the impact of continuous assessment on students' results. We use a complete dataset with information regarding both the subjects taught and the results obtained by students at the Public Administration and Management Diploma Course of the University of Barcelona (Spain) that was a pioneering experiment at this university in implementing the guidelines of the European Higher Education Area (EHEA) back in 2004. More precisely, we have information for seven academic years (2001/2002 – 2007/2008) on i) the lecturer who taught each subject; ii) the definition of the continuous assessment contained in the teaching plans when they were introduced; and iii) the students' marks in each subject. With this information we compare the results obtained by students before and after the implementation, following the Bologna process, of the continuous assessment controlling for who was responsible of the subject. The results present new evidence on the impact of continuous assessment taking into account a temporal perspective. It is generally accepted that the implementation and development of continuous assessment has been one of the most difficult changes in adapting to the EHEA guidelines. Moreover, it is at the same time a key and a controversial aspect of the adaptation process itself. Indeed, there is no agreement on how continuous assessment in higher education is defined and how lecturers should implement the new assessment procedure. The present study aims to provide further information in this complex process of changing the evaluation process in our universities.

Keywords

European Higher Education Area, continuous assessment, student's results, teaching plans, Public Administration and Management Diploma Course

1. Introduction and motivation

One important and difficult task when trying to evaluate the implementation of the European Higher Education Area (EHEA, hereafter) is to assess if these guidelines have achieved the desired impact on students performance.

The EHEA implies a new way of looking at the teaching-learning process. This, in turn, involves a number of changes to the student assessment system (AQU, 2003; Delgado et al., 2005; Delgado and Oliver, 2006; Cadenato and Martínez, 2008). As the students themselves have become the centre of the learning process, the assessment system should be designed as a tool to assist them in this process; e.g. providing them the opportunity to know throughout the term what they have (or have not) learned, to what extent they have achieved objectives of the subject or activity, in what areas they need to improve, and so on. This new learning process, therefore, demands that student assessment be continuous.

In general, one would expect that those students who actively participate in (a well defined) continuous assessment process should have a priori better results in comparison with previous assessment procedures implemented before the EHEA era (basically assessment through a unique final examination). Nevertheless the task of understanding if this goal has been achieved is far from easy. Many factors can influence the results obtained by the students and, moreover, to observe the counterfactual state, that is what would have happened to a student with different systems of evaluation, it is simply impossible.

Even being aware of these limitations, in this paper we complete the works by Gallardo, Montolio and Camós (2010) and Gallardo and Montolio (2011) that have assessed both the process of the implementation of the continuous assessment and its impact on students' results.

On one side Gallardo, Montolio and Camós (2010) analyse how the continuous assessment system was defined in the Diploma in Management and Public Administration at the University of Barcelona (one of the first degrees at the University of Barcelona in adapting EHEA criteria). The authors gathered data directly from the teaching plans written by the lecturers of each subject for the 2007-2008 and 2008-2009 academic years. They observe that, progressively, the continuous assessment system was accepted to such an extent that nowadays is the assessment formula used by practically the whole of the lecturers. Nevertheless, the authors find a high dispersion in how continuous assessment was defined in those academic years. It seems that there was (and maybe there still is) not a unified view of how to perform continuous assessment. This dispersion, although diminished over time, suggested some interesting questions about the need to collectively agree on the criteria that defines the continuous assessment, taking always in consideration the potential of the continuous assessment as a pedagogical tool.

On the other side Gallardo and Montolio (2011) examine whether a better definition of the continuous assessment reverts positively in the results obtained by students. First, they also use the teaching plans of all the subjects taught in same Diploma for the academic courses 2007-2008 and 2008-2009, to analyse the definition of continuous assessment that different lecturers used in their subjects. Next, they asked a panel of experts (academics with extensive careers in teaching innovation) their assessment of the definition of continuous assessment that the lecturers of this degree defined in their teaching plans. This yields a ranking of subjects depending on the definition of the continuous assessment. To relate this valuation of the continuous assessment with the performance of students they used information on grades obtained per student and per subject in those two academic years. They obtain that during these two academic years the definition of continuous assessment improved. Moreover, this improvement seems to be correlated with a better student performance.

These previous works also highlighted the difficulty to analyse the impact of continuous assessment on student's performance. First, the evaluation process itself was (and maybe

it still is) not well established by many factors such as the lack of clear guidelines as to what is meant by continuous assessment or how to apply it following “a common” criteria across lecturers; the existence of overcrowded classrooms implying that the number of students per group could be up to hundred students; lecturers not properly trained for the change in the assessment procedure; huge time requirements of dedication from lecturers, not only to plan the new way of assessing students but also to design and implement it (completion and correction activities, continuous feedback, etc.); the low value of teaching (and teaching innovation) in the evaluation criteria to access contractual figures provided by the Spanish university system; and reluctance of students to change the evaluation system given that the continuous assessment implies active participation in a variety of activities throughout the semester (in front of a passive attitude possible in other types of assessment).

Second, it is very difficult to understand the ultimate determinants of a student performance. There are many factors influencing the final marks that the students obtain, being the assessment system just one of them. Other factors such as personal circumstances, the difficulty of a given subject, or circumstances related with the lecturer teaching the subject could also influence the final performance of students. In this sense, it is impossible for us to account for the personal determinants of students’ grades, but we can try to control for factors related with the “supply of education” (that is, control for aspects form the lecturer side) to isolate the impact of the continuous assessment on students achievements.¹

Therefore, this paper aims to overcome some of these last issues by providing more evidence of the impact of continuous assessment on students’ performance but taking a long-run temporal perspective to isolate the impact that different lecturers could have in the obtained results of the students.

¹ In fact, the idea for this paper comes from the comments received from various participants to the different conferences where the work by Gallardo and Montolio (2011) was presented. We thank all of them for positive and useful feedback.

More precisely, we compare the results obtained by students before and after the implementation of the continuous assessment but controlling for who was the lecturer responsible of the subject. In this sense, we complement the results obtained in Gallardo and Montolio (2011) but being sure that the variability that the change in the responsible of a subject (as it happened many times) is neutralized and, hence, we reduce the variability of the factors that could affect the students' results. Although there are still many factors that could influence the observed results, we move forward in assessing the impact of the introduction of the continuous assessment in our universities.

2. Objectives and methodology

In order to achieve the above mentioned goal we use a complete dataset with information regarding both the subjects taught and the results obtained by students at the Public Administration and Management Diploma Course of the University of Barcelona that was a pioneering experiment at this university in implementing the guidelines of the European Higher Education Area (EHEA) back in 2004.

In the first stage of implanting EHEA guidelines, during the 2002-2003 academic year, the University of Barcelona selected a small number of degree courses in which to implement a pilot scheme for adapting to the new regulations. These would serve as a guide for other courses, in what was labeled a convergence process. One of the programs selected was the Public Administration and Management Diploma Course, a diploma course comprising 184 credits which has been offered by the University of Barcelona's Faculty of Law since the academic year 1991-1992 (see Solé, 2009). In 2004, this course also received the recognition of the Catalanian Government's Department of Universities as a pilot experiment for EHEA adaptation. It was during the academic year 2004-2005 that all the subjects taught at the Diploma, as a pioneering experience in the UB, applied (one way or another) the EHEA guidelines, among which there was the need to move the assessment process towards a continuous assessment procedure (see UB, 2009).

The experiences gathered from these pilot experiences made the University of Barcelona, in 2006, to defined new regulations concerning the assessment system in order to adjust it to the EHEA guidelines for all the courses taught. Since then, continuous assessment has been the accepted form of assessing students.

As it is well know, this new definition of the assessment process induced an important change in the lecturers' own methodology. They included in their courses a variety of activities to be assessed and thus constitute part of the student's final mark. Such a new environment called for a rethinking and redesigning of the entire teaching approach (sometimes this process was rather informal). In general, the students, used to a learning system which was totally passive, were required to do more autonomous work (completing various assignments, participating in class, etc.) in order to pass the subject while lecturers faced the challenge of designing an entire course to promote this type of continuous student work and the resulting learning process.

The analysis of the teaching plans (for the academic year 2007-2008) revealed eight tasks that lecturers considered as being part of the continuous assessment. A *global test* is a final test (theoretical and/or practical) usually done at the end of the term. This task was common and can be understood as an inheritance from the former evaluation system, which was based completely on a global test. *Mid-term exams* are theoretical or practical tests commonly done during the term. *Exercises and case studies* consist of practical exercises or analytical case studies that students are assigned to do, normally in class. This type of task, if programmed weekly, is similar to daily work and enables a sustained assessment of students. *Essays* are written assignments handed in by students and involving reading, comprehension and reasoning of a text. *Teamwork* consists of a final essay usually done throughout the term by several students working together. *Oral presentations* correspond to the performance of students when expounding an essay and/or exercise in class. "*Various activities*" comprises those tasks defined by lecturers in a rather vague manner. The activities are not clearly defined and, a priori, it is not

possible to know the type of activity that students will be required to do. *Student progress* relates to the student's attendance and the interest shown in class.

A part from understanding what continuous assessment really meant for lecturers when implementing it, we collect information for seven academic years (2001/2002 – 2007/2008) being the academic year 2004-2005 (the one of the application of the continuous assessment in the Diploma) just in the middle of the time period. This way we have information on students' results when the continuous assessment was not implemented at all (2001/2002), to be compared with those results obtained in an academic year with the continuous assessment fully implemented (2007/2008).

In such a long time period although the structure of the Diploma regarding the number of subjects and their contents have been fairly stable, this is not so with regard the lecturers teaching them. We have clearly identified 38 subjects (basically compulsory and optional courses) that were consistently taught from the academic year 2001/2002 to the academic year 2007/2008.² However, analysing who taught those courses we find that during the period under analysis there was mobility of the lecturers. As shown in Table 1, there is certain mobility of the lecturers responsible of each subject, this is particular true for the academic year 2005-2006, the one precisely after the implementation, as a pilot scheme, of the EHEA guidelines, among them the requirement of writing up a teaching plan and the implementation of the continuous assessment to students.

For the whole period under analysis, there is one subject that changed 4 times lecturer, 5 subjects that changed 3 times, 6 subjects that changed 2 times, 6 subjects that changed 1 time and 20 subjects experienced no changes in the lecturer teaching the contents of the subject.

We precisely rely on those subjects that, in seven academic years, have not changed the lecturer and, hence, we can hypothesize that any change in the academic results obtained

² The Public Administration and Management Diploma Course has, on average, 52 subjects: 17 compulsory, 23 optional and 12 free-choice.

by students between the academic year 2001-2002 (continuous assessment was not implemented at all) and the academic year 2007-2008 (continuous assessment was implemented)³ could be the consequence of a change in the assessment procedure (and by extension by changes in the teaching methodology). It is clear that the results we present in the next section are completely descriptive and there are still many unobserved factors (such as student's characteristics) that we cannot control for and, hence, warns us to derive any conclusion regarding causality. Nevertheless, the results here presented aim to be another brick in the assessment of the implementation of the EHEA guidelines.

Table 1. Lecturer changes.

	2001-2002	2002-2003	2003-2004	2004-2005*	2005-2006	2006-2007	2007-2008
<i>Number of lecturer changes (with respect previous academic year)</i>	0	7	4	3	10	7	7
<i>% of changes over total subjects analysed (38)</i>	0%	18.4%	10.5%	7.9%	26.3%	18.4%	18.4%

Note: * In the academic year 2004-2005 there EHEA guidelines were implemented in the Diploma in a University of Barcelona's pilot scheme.

³ As presented in Gallardo, Montolio and Camós (2010) in the academic year 2007-2008 the vast majority of lecturers in the Diploma course define the continuous assessment as a set of activities done throughout the semester, concluding that continuous assessment was extensively used. However, they observe a lack of homogeneity of criteria: different activities and different weights assigned to each task were used, depending on the subject. Moreover, some activities were vaguely defined as “*various activities*” and were, therefore, uninformative, i.e. not properly described to the students at the beginning of the academic year.

3. Main results

Table 2 presents the students' marks (by grade) obtained in each subject in the academic year 2001-2003; similarly, Table 3 present the students' results for the academic year 2007-2008. Table 4 presents the differences between both years. The subjects presented in those tables are only those that did not have any change in the lecturer during the whole period.

Table 2. 2001-2002 students' results.

	%E	%VG	%G	%S	%F	%ENT	SR	PR
Subject 1	5.1%	12.0%	36.8%	26.5%	7.7%	12.0%	91.3%	80.3%
Subject 2	0.5%	2.7%	15.8%	20.8%	27.9%	32.2%	58.9%	39.9%
Subject 3	0.5%	0.5%	10.5%	15.2%	25.1%	48.2%	51.5%	26.7%
Subject 4	0.0%	2.1%	6.3%	15.6%	28.1%	47.9%	46.0%	24.0%
Subject 5	0.0%	3.7%	11.1%	40.7%	7.4%	37.0%	88.2%	55.6%
Subject 6	0.9%	0.0%	17.2%	45.7%	16.4%	19.8%	79.6%	63.8%
Subject 7	0.0%	4.5%	15.0%	32.3%	30.8%	17.3%	62.7%	51.9%
Subject 8	1.6%	2.4%	17.7%	21.8%	15.3%	41.1%	74.0%	43.5%
Subject 9	0.0%	9.6%	14.9%	31.9%	20.2%	23.4%	73.6%	56.4%
Subject 10	0.0%	11.1%	33.3%	40.0%	0.0%	15.6%	100.0%	84.4%
Subject 11	3.7%	7.4%	13.0%	25.9%	14.8%	35.2%	77.1%	50.0%
Subject 12	2.3%	6.8%	22.7%	22.7%	4.5%	40.9%	92.3%	54.5%
Subject 13	0.0%	7.2%	9.9%	17.1%	33.3%	32.4%	50.7%	34.2%
Subject 14	0.0%	11.4%	22.9%	37.1%	5.7%	22.9%	92.6%	71.4%
Subject 15	0.0%	20.0%	20.0%	23.3%	10.0%	26.7%	86.4%	63.3%
Subject 16	6.7%	6.7%	6.7%	26.7%	13.3%	40.0%	77.8%	46.7%
Subject 17	0.0%	25.0%	50.0%	25.0%	0.0%	0.0%	100.0%	100.0%
Subject 18	0.0%	12.5%	12.5%	18.8%	25.0%	31.3%	63.6%	43.8%
Subject 19	6.3%	0.0%	6.3%	25.0%	12.5%	50.0%	75.0%	37.5%
Subject 20	0.0%	7.0%	14.0%	53.5%	14.0%	11.6%	84.2%	74.4%
Average	1.4%	7.6%	17.8%	28.3%	15.6%	29.3%	76.3%	55.1%

Note: E: "Excellent" (*Matrícula de honor*); VG: "Very Good" (*Excelente*); G: "Good" (*Notable*); S: "Sufficient" (*Aprobado*); F: "Fail" (*Suspense*); ENT: "Evaluation Not Taken" (*No presentado*). SR: "Success Rate" (defined as the total number of students that pass the subject (E+VG+G+S) divided the total number of registered students minus the number of students that have not taken the evaluation (ENT)); PR: "Performance Rate" (defined as the total number of students that pass the subject (E+VG+G+S) divided the total number of registered students). Source: own elaborations.

From these tables we observe that there are no big changes on the results obtained in the subjects of the Public Administration and Management Diploma; more precisely, in those subjects that for seven academic years were taught by the same lecturer. To some extent this result is fairly normal given how many factors can affect the students results (that we cannot control for) and how difficult is to identify the impact of any educational policy on results. However, we must admit that two results need more attention. On one side it seems that the number of students evaluated, that is, taking the final exam in the academic year 2001-2002 or following the continuous assessment in the academic year 2007-2008, increased by 5.1%. This result is line with one of the aims of the continuous assessment that is to have students more involved during the course and to avoid students to get disconnected from the subject.

Table 3. 2007-2008 students' results.

	%E	%VG	%G	%S	%F	%ENT	SR	PR
<i>Subject 1</i>	6.4%	20.5%	30.8%	25.6%	2.6%	14.1%	97.0%	83.3%
<i>Subject 2</i>	2.2%	2.2%	2.9%	20.4%	30.7%	41.6%	47.5%	27.7%
<i>Subject 3</i>	0.0%	1.6%	9.7%	24.2%	39.5%	25.0%	47.3%	35.5%
<i>Subject 4</i>	0.0%	3.2%	4.3%	13.8%	24.5%	54.3%	46.5%	21.3%
<i>Subject 5</i>	0.0%	9.3%	16.3%	30.2%	18.6%	25.6%	75.0%	55.8%
<i>Subject 6</i>	0.0%	2.2%	18.7%	44.0%	27.5%	7.7%	70.2%	64.8%
<i>Subject 7</i>	0.0%	3.7%	6.5%	28.7%	47.2%	13.9%	45.2%	38.9%
<i>Subject 8</i>	0.0%	2.7%	12.7%	30.0%	19.1%	35.5%	70.4%	45.5%
<i>Subject 9</i>	0.0%	11.5%	26.9%	26.9%	7.7%	26.9%	89.5%	65.4%
<i>Subject 10</i>	0.0%	19.2%	34.6%	15.4%	0.0%	30.8%	100.0%	69.2%
<i>Subject 11</i>	3.0%	15.2%	12.1%	15.2%	12.1%	42.4%	78.9%	45.5%
<i>Subject 12</i>	6.3%	10.4%	18.8%	31.3%	12.5%	20.8%	84.2%	66.7%
<i>Subject 13</i>	2.7%	4.0%	8.0%	54.7%	9.3%	21.3%	88.1%	69.3%
<i>Subject 14</i>	0.0%	16.0%	20.0%	40.0%	0.0%	24.0%	100.0%	76.0%
<i>Subject 15</i>	0.0%	27.3%	18.2%	18.2%	0.0%	36.4%	100.0%	63.6%
<i>Subject 16</i>	0.0%	2.9%	17.1%	37.1%	25.7%	17.1%	69.0%	57.1%
<i>Subject 17</i>	3.8%	7.7%	53.8%	26.9%	0.0%	7.7%	100.0%	92.3%
<i>Subject 18</i>	0.0%	0.0%	11.1%	44.4%	33.3%	11.1%	62.5%	55.6%
<i>Subject 19</i>	5.0%	5.0%	15.0%	65.0%	0.0%	10.0%	100.0%	90.0%
<i>Subject 20</i>	0.0%	12.5%	30.0%	35.0%	5.0%	17.5%	93.9%	77.5%
Average	1.5%	8.9%	18.4%	31.4%	15.8%	24.2%	78.3%	60.1%

Note: see Table 2.

Moreover, both the success rate (SR) and, especially, the performance rate (PR) increased between the two academic years. The performance rate, on average increased from 55.1% up to 60.1%. This was mainly due for a high percentage of students passing the subject while the percentage of the students failing the subject remaining nearly unaltered.

Table 4. Differences between academic year 2007-2008 and 2001-2002 in students' results.

	%E	%VG	%G	%S	%F	%ENT	SR	PR
<i>Average 2001-2002</i>	1.4%	7.6%	17.8%	28.3%	15.6%	29.3%	76.3%	55.1%
<i>Average 2007-2008</i>	1.5%	8.9%	18.4%	31.4%	15.8%	24.2%	78.3%	60.1%
Differences	0.1%	1.2%	0.5%	3.1%	0.2%	-5.1%	2.0%	4.9%

Note: see Table 2.

4. Conclusions

This paper aims to bring more descriptive information to the academic area regarding the assessment of the EHEA implementation and completes and complements the previous studies of Gallardo, Montolio and Camós (2010) and Gallardo and Montolio (2011). We compare the results obtained by students before and after the implementation of the continuous assessment controlling for who was responsible of the subject taught.

The results seem to indicate new evidence on the impact of continuous assessment taking into account a temporal perspective. More precisely it seems that the new assessment methodology reduced the number of students not being finally assessed and increased those students that pass the subject, that is, increase the success rate and specially the performance rate of students.

It is generally accepted that the implementation and development of continuous assessment has been one of the most difficult changes brought about by adaptation to the EHEA, while at the same time a key, though controversial, aspect of the adaptation

process itself. Indeed, there is no agreement on how continuous assessment in higher education is defined and how lecturers should implement the new assessment procedure. The results of the present study would indicate that it is worth keep working on improve the definition and implementation of the this complex process of changing the evaluation process in our universities given that it seems that there is a positive impact on students results.

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