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Perceptions of effectiveness, fairness and feedback of assessment methods: a study in higher education

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This paper draws upon a broader piece of research aimed at investigating assessment in higher education. It focuses upon the perceptions of undergraduates about issues of effectiveness, fairness and feedback, particularly in regard to the so-called learner-centred methods. In total, 378 undergraduate students participated in the study at the University of Minho (254) and at the University of Lisbon (124). Data were collected through questionnaires. Findings suggest that the most frequent assessment methods are written tests, oral presentations in group and project work. Participants who are assessed by methods which require their active involvement view assessment as a fairer and more effective process than students who are assessed by more traditional methods such as examinations and written tests. However, the idea of conflict in assessment emerged as a key distinctive feature associated with learner-centred assessment methods such as project work and portfolios. Implications of the findings for developing learner-centred methods in higher education are discussed.

Keywords: assessment; higher education; learner-centred methods; feedback; assessment methods

Introduction

The implementation of the so-called Bologna process in European universities brought about changes in curriculum restructuring with implications for teaching and learning strategies as well as for assessment methods (Flores and Veiga Simão 2007). A paradigm shift has been advocated, one which emphasises the key role of the students as active learners with implications for the design and development of learning outcomes and goals for training (Flores and Veiga Simão 2007; Simão, Santos, and Costa 2003). This paradigm implies a pedagogical reorganisation focusing on more flexible curriculum designs, on different ways of organising the pedagogical work of both university teachers and students, on tutorial support for students, on new assessment methods, and on a renewed focus on the link between teaching and research (Lima 2006).

Earlier empirical work has shown the importance of assessment and its key influence on students' learning (Marton and Säljö 1997; Boud, Cohen, and Sampson 1999; Scouller 1998; Rowntree 1987; Watering et al. 2008; Struyven, Dochy, and Janssens 2005; Laird and Garver 2010; Fernandes, Flores, and Lima 2012; Webber 2012).

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Assessment becomes then a key element in determining the ways in which students spend their time and what they see as important in learning, and this may have either positive or negative influences on their learning (Brown and Knight 1994). Therefore, more attention needs to be paid to assessment in curriculum design in higher education, because students look at assessment in the first place creating a defined representation of the curriculum (e.g. Meyers and Nulty 2008). In addition, the issue of trust in the professional judgments of the evaluators also needs to be taken into account when discussing assessment (Yorke 2011), particularly as far as their expertise is concerned as well as the rationale behind their evaluations.

The aim of this paper is to look at assessment methods in higher education from the point of view of undergraduate students. It also addresses their perceptions of effectiveness, fairness and feedback, particularly in regard to the methods which require the active involvement of students, also known as learner-centred methods.

Traditional and learner-centred methods of assessment

Traditionally, assessment in higher education includes the well-known examination or written test, which is said to promote hierarchy by identifying bad or good grades (Perrenoud 1999). It is also said to have a limited validity to meet employability agendas (Price et al. 2011). Also, the traditional assessment methods such as written tests and examinations do not inform the teacher as to the means by which the student has learned, and are seen as a means of punishing mistakes without seeking the means to understand and improve the learning process (Perrenoud 1999; Pereira and Flores 2012). However, the traditional examination may be appropriate in certain contexts and for certain purposes, for example for larger classes and for getting to know if students were able to learn given amount of factual knowledge. Craddock and Mathias (2009) assert that the use of different assessment methods is advocated as good practice in order to respond to students' different learning preferences. Also, traditional examinations lead to the tendency for students to learn only for the purpose of assessment rather than to retain and build on knowledge gained (Struyven, Dochy, and Janssens 2005). This kind of assessment is closely linked to existing school systems, namely in contexts in which an outcome-led perspective of teaching and learning is prevalent within the framework of accountability regimes. Drawing on Wen and Tsai (2006) we would argue that it is imperative that education systems become creative with regard to diverse and innovative assessment practices in order to enhance learning and academic achievement in response to criticisms of traditional examinations and their shortcomings (Craddock and Mathias 2009).

Some authors have discussed the potential of methods such as portfolios, projects, collaborative assessment and simulations (Struyven, Dochy, and Janssens 2005; Tang et al. 1999; Almond 2009) for the development of student autonomy, sense of responsibility and reflection (Sambell and McDowell 1998). Webber (2012), for instance, argues that learner-centred assessment activities such as oral presentations by students, group and team projects and service learning assignments foster feedback, collaboration with peers and imply an increase in student–faculty contact. It is important to note that these methods described as learner-centred may also be used in ways that are not always learner-centred, especially when student autonomy, active involvement, and responsibility for learning are limited and oriented by strict norms and guidelines.

Earlier empirical work shows that the use of learner-centred methods provides a more effective and motivating learning environment (Tang et al. 1999; Birenbaum

and Feldman 1998) than traditional assessment methods. Sambell and McDowell (1998) also emphasise that these methods are designed to develop autonomy, responsibility and reflection, which is in line with the aims of the Bologna process. They are understood as promoters of more autonomous learning, which fosters students' sense of responsibility, enabling them to understand their own learning (Sluijsmans, Dochy, and Moerkerke 1999). As suggested by Tang et al. (1999) and Segers, Gijbels, and Thurlings (2008), using a portfolio to support student assessment, rather than other methods such as multiple choice tests, has a greater positive impact on the depth of student learning.

The main goal of higher education has changed. The aim is no longer for students to learn only scientific knowledge but also to develop soft skills in order to become successful in their future careers (Dochy, Segers, and Sluijsmans 1999). As far as group work is concerned, for example, Almond (2009) states that it allows students to expose themselves to written and oral presentations, to develop group management skills, to enrich interpersonal relationships and to enhance deep rather than surface learning. Similar results were found in other contexts (Fernandes, Flores, and Lima 2009, 2012). However, it is important to note a recent critique of Biggs's deep and surface approaches to learning model in which the authors refer to a lack of significant supporting evidence, imprecise conceptualisation, ambiguous language, circularity, and a lack of definition of the underlying structure of deep and surface approaches to learning (Howie and Bagnall 2013).

Formative feedback is also a key feature of the assessment methods that imply students' involvement and collaboration and a greater contact between students and faculty. Feedback is thus understood as a key element of student learning process and student self-regulation (Carless 2006; Carless et al. 2011; Nicol and Macfarlane-Dick 2006). The study by Poulos and Mahony (2008) intended to obtain a deeper understanding of the meaning and importance of feedback for students. Three main dimensions related to the effectiveness of feedback were identified: the perception of the feedback, the impact of feedback and the credibility of feedback. Data also suggested the need to promote consistent and transparent assessment practices, and clear criteria benchmark, for example. Sendziuk (2010) states that teacher feedback on student performance should be timely and prospective so that it can be useful not only for the present assignment but also for future situations. In addition, students must be aware of the criteria according to which they are assessed, and thus feedback needs to be presented in a way that allows them to recognise or judge their level of performance. It also should indicate clearly how to improve students' learning and to encourage them to reflect on the feedback that has been provided.

Thus, it is important to put into practice assessment methods that require the continuous active involvement of the students and to analyse the adequacy and coherence of existing methods in regard to the aims and purposes of a given module or course. Segers and Dochy (2001) claim that new assessment methods enhance the reflection of the competencies required in real-life practice. Moreover, they conclude that while these methods are promising with regard to validity and generalisation, teachers have to improve their educational practice, specifically in what concerns its alignment with the main goals of the programmes (Segers and Dochy 2001, 340). In this respect, Rasmden (2004) argues that teachers should take into account two essential aspects when it comes to choose assessment methods: (1) the methods alone are not what determine learning; (2) rarely is there a method that satisfies all education goals.

Despite the existence of studies in this field, further research is needed in order to better understand the practices and purposes of assessment in higher education and the perceptions of students associated with them. Recent literature points to gaps in research into the preferences of higher education students in relation to assessment methods used and their results (Watering et al. 2008), the comparison of assessment practices in different disciplines, institutions and countries (Gilles, Detroz, and Blais 2010) and the need for evidence on the effectiveness of the so-called alternative methods of assessment (Segers, Gijbels, and Thurlings 2008). The study reported in this paper aims to deepen knowledge in this field by analysing the perceptions of effectiveness, fairness and feedback of learner-centred assessment methods from the point of view of undergraduate students.

Methods

This paper reports on findings from a broad piece of research aimed at analysing assessment methods in higher education. The study was carried out at the University of Minho and at the University of Lisbon in Portugal. The research questions which this paper seeks to illuminate are:

(1) What kinds of assessment methods are most often used in various programmes?
(2) Do undergraduate students show more positive associations with assessment when they are assessed through learner-centred methods?
(3) How do undergraduate students perceive assessment in terms of effectiveness and fairness in regard to learner-centred methods?
(4) How do undergraduate students look at formative feedback as a way of supporting self-regulation in regard to learner-centred methods of assessment?

Participants

In total, 378 undergraduate students participated in the study from the University of Minho (n = 254) and from the University of Lisbon (n = 124) in Portugal. They were attending different programmes: 162 from Health Sciences, 103 from Psychology, 88 from Education and 25 from Engineering (Table 1). Seventy-nine participants are male students (20.9%) and 299 are female (79.1%). Their age ranges from 20 to 42 years old (mean: 21.89; SD: 3.42). These universities and programmes were selected on the basis on the following criteria: diversity of areas of knowledge, voluntary participation of the students and access to data. The selection of a university included in the so-called new universities (University of Minho) and a 'classic' university (University of Lisbon) was also a criterion taken into account.

Data collection and analysis

A face-to-face survey was administered to all 378 undergraduate students. Two researchers collected the questionnaire in a lecture theatre in both universities. The survey was designed to collect data on the following dimensions: ideas associated with assessment; methods of assessment; perceptions of fairness in regard to the most used assessment methods; importance attached to feedback as a means to support self-regulation and the importance of a reliable source of feedback. Informed

Table 1. Participants (n = 378).

Gender	Health sciences	Psychology	Education	Engineering	Total
Male	49 (13%)	12 (3.2%)	6 (1.6%)	12 (3.2%)	79 (20.9%)
Female	113 (29.9%)	91 (24.1%)	82 (21.7%)	13 (3.4%)	299 (79.1%)
Total	162 (42.9%)	103 (27.2%)	88 (23.3%)	25 (6.6%)	378 (100%)

consent and confidentiality were obtained. The construction of the scales was based upon the work of Figari (1996), Hadji (1994), Poulos and Mahony (2008) and Sendziuk (2010), in regard to frameworks, functions and modes of assessment as well as the importance attached to feedback and the reliability of the source of feedback.

The face validity and content validity of the scales were tested with 60 undergraduate students. This procedure enabled think-aloud sessions that included spontaneous commentaries and suggestions from the students, as well as simultaneous questioning from the researcher conducting the sessions. Also, five experts in the field were asked to provide written reflections about the scales.

The final version of the questionnaire included six scales with close-ended questions. In the first scale, focused on the ideas associated with assessment, 14 concepts were presented such as grades, verification of knowledge, reflection, learning, imposition, unfairness, help, success and anxiety. Students had to identify the extent to which they associated assessment with these ideas, using 1 = not at all to 4 = very much.

The second scale, related to methods of assessment, traditional (e.g. tests, examinations) and learner-centred methods (e.g. portfolios, project work in teams) were identified. A four-point Likert scale was used in this case ranging from 1 = not at all to 4 = always, in order to identify the frequency of the methods in the different programmes. The third scale, related to the perceptions of fairness of learner-centred methods, included two items (e.g. 'learner-centred assessment methods such as portfolios are fairer than traditional ones'). The fourth scale, related to the perceptions of effectiveness of learner-centred methods, included six items (e.g. 'learner-centred assessment methods such as portfolios enable a more effective learning'). The fifth scale, related to the importance attached to feedback in supporting self-regulation, included three items (e.g. 'formative feedback from the teacher helps me monitoring my learning'). Finally, the sixth scale, related to the importance of a reliable source of feedback, included two items (e.g. 'in my opinion, some teachers are able to enhance my learning'). In scales 3rd to 6th, a five-point Likert scale was used, ranging from 1 = strongly disagree to 5 = strongly agree.

To analyse the differences in terms of assessment methods in different programmes, as well as the perceptions associated with learner-centred methods, feedback and the concept of assessment itself, descriptive statistical procedures and multivariate analysis techniques were undertaken.

Findings

The use of the assessment methods in different programmes

The results of the total sample (see Table 2) indicate that the most common assessment methods are written tests, oral presentations in group and team work (mean 3.65, 3.38 and 3.21, respectively). On the other hand, the methods that are the least used are group

Table 2. Assessment methods: range, mean and standard deviation (n = 378).

	Mean	SD	Range
Written tests	3.65	0.65	1–4
Group oral presentations in classroom	3.38	0.67	1–4
Group work	3.21	0.73	1–4
Reports done in group	3.08	0.80	1–4
Project work in teams	2.90	0.82	1–4
Individual work	2.62	0.84	1–4
Individual reports	2.49	0.85	1–4
Individual written reflections	2.31	1.00	1–4
Oral tests	2.26	0.83	1–4
Individual project	2.25	0.78	1–4
Small written tests	2.17	1.05	1–4
Individual oral presentations in classroom	2.16	0.86	1–4
Individual portfolios	1.95	0.80	1–4
Individual critical reviews of texts	1.94	0.91	1–4
Critical reviews of texts in group	1.90	0.90	1–4
Portfolios in group	1.85	0.92	1–4
Group essays	1.75	0.82	1–4
Individual essays	1.58	0.73	1–4

portfolios and group and individual essays (mean 1.85, 1.75 and 1.58, respectively). Table 2 presents the frequency related to each method of assessment.

A multivariate statistic method of discriminant analysis was used to determine what kinds of assessment methods are the best descriptors to discriminate the different programmes. This method determines the optimal combination of variables in a way that the significant functions provide the most overall discrimination between groups. As Table 3 shows, there are three linear combinations of variables – discriminant functions – with statistical significance ($p < .001$) that best differentiate students attending different programmes.

The first function (accounting for 65.33% of the variance of results) identifies the programme of Education, with positive correlations of assessment methods related to individual written reflections and individual portfolios. Negative correlations were found in the case of the written tests. Learner-centred methods differentiate the programme of Education from the other programmes which seem to be centred in more traditional methods of assessment.

The second function explains only 23.75% of the variance and discriminates the programmes of Psychology and Engineering with positive correlations coefficients in regard to small individual written tests. The third function with statistical significance explains 10.92% of the variance and separates students of Engineering from students of other programmes, with results directly related to the team project.

Ideas associated with assessment and their relationship with learner-centred methods

In the total sample (n = 378), the most frequent ideas associated with assessment (see Table 4) are neutral (tests or examinations and grades), with the mean 3.24 and 3.16, respectively, one being positive (learning, with the mean 3.15). The least frequent ideas are negative ones such as unfairness and fear with 2.34 and conflict with 2.08. Table 4 also shows that a higher percentage of participants make neutral and positive

Table 3. Discriminant analysis (n = 378).

Programme	Functions at group centroids		
	1	2	3
Health	–1.22	–0.56	0.00
Psychology	0.25	0.95	–0.60
Education	2.14	–0.56	0.24
Engineering	–0.70	1.68	1.66
Assessment method	Structure matrix		
Individual written reflections	**.64***	–.06	–.17
Written tests	**–.43***	.25	–.27
Individual portfolios	**.47***	.17	.07
Critical reviews of texts in group	.27*	.24	–.14
Portfolios in group	.34	–.21	.35*
Small written tests	.04	**.47***	.25
Oral tests	–.20	–.33*	.06
Reports done in group	.16	.27*	.14
Group work	.07	.27*	–.05
Individual oral presentations in classroom	–.14	–.24*	–.05
Group oral presentations in classroom	.18	.28	**–.54***
Individual project	–.05	–.20*	.05
Project work in teams	.14	.11	**.42***
Individual work	.12	.10	.28*
Chi-square test			
Eigenvalue	1.77	0.65	0.30
Rc	.80	.63	.48
λ	.17	.47	.77
Chi-square	654.33**	278.79**	95.58**

Abbreviation: Rc – canonical correlation.
Bold. Largest absolute correlation (> .40) between each variable and any discriminant function.
*p < .05; **p < .001.

associations with assessment, at a high level (very much). Moreover, the negative associations are in lower degrees (a little). The exception is anxiety, with 44.2% of respondents who answered 'to some extent'.

Based upon the literature and also upon the discussions with the five experts who helped in validating the questionnaire, a consensus was reached in the distinction between traditional and learner-centred methods of assessment. Examples of the former are written and oral tests and examinations, and examples of the latter are individual and group portfolios and team projects.

Drawing upon the use of learner-centred methods in contrast to traditional ones two contrasting groups were defined, differing in the frequency they refer to the use of learner-centred methods: one reporting a frequency under percentile 25 (n = 128) and other reporting a frequency above percentile 75 (n = 62). Based on these two groups, the aim was to investigate the implications of the use of learner-centred methods in regard to the ideas associated with assessment with an independent-samples t-test procedure (Table 5). The Levene test does not reject the null hypothesis, permitting us to assume homogeneity of variances. In order to contrast the results of the two groups, an independent-samples t-test procedure was carried out in relation to the associations made with assessment and to the perceptions of fairness

Table 4. Associations to assessment in the total sample: mean, standard deviation and percentages (n = 378).

	Mean	SD	1 – not at all	2 – a little	3 – to some extent	4 – very much	% missing
Neutral associations							
Tests or examinations	3.24	0.68	0.5	11.9	48.1	37.8	1.6
Grades	3.16	0.71	0.3	16.9	47.6	33.9	1.3
Positive associations							
Learning	3.15	0.66	1.1	9.0	51.6	30.2	8.2
Verification of knowledge	3.07	0.62	1.1	12.4	63.0	22.0	1.3
Success	3.04	0.62	0.3	16.1	60.8	21.2	1.6
Reflection	2.92	0.68	1.6	21.7	57.7	17.7	1.3
Participation	2.79	0.70	2.9	27.2	55.3	13.2	2.9
Certification	2.71	0.72	3.4	33.1	47.4	13.0	3.2
Help	2.63	0.74	5.0	36.8	45.2	11.1	1.9
Negative associations							
Anxiety/stress	2.84	0.85	6.9	24.3	44.2	23.0	1.6
Imposition	2.38	0.83	12.7	45.8	28.8	10.3	2.4
Unfairness	2.34	0.80	13.0	46.6	30.2	7.9	2.4
Fear	2.34	0.82	13.5	47.9	27.8	9.3	1.6
Conflict	2.08	0.75	20.4	54.8	18.3	4.2	2.4

and effectiveness, to the importance of feedback in supporting self-regulation and to the importance attached to the reliability of source of feedback in terms of its usefulness.

The analysis of the differences in means of the two groups reveals that there are no differences with statistical significance between the observations with respect of associations made with the assessment concept by the two groups of students. There is an exception in regard to the association related to conflict ($p < .01$), with a higher mean among the undergraduate students who state that they are assessed through learner-centred methods.

Table 5 also shows that undergraduate students who report being assessed more frequently through learner-centred methods state that assessment methods are more effective and fairer than students who report being assessed more frequently by traditional methods. In regard to the importance attached to feedback and the reliability of the source of feedback, there are no differences with statistical significance between the two groups. Students who report the most use of traditional methods attach the same importance to receiving feedback, and to the importance of the reliability of the source, as students who report being assessed through learner-centred methods.

Discussion and conclusion

This paper set out to examine issues of effectiveness, fairness and formative feedback of different methods of assessment from the point of view of undergraduate students. It adds to existing literature on assessment in higher education as it enables us to better understanding undergraduate' perceptions of assessment and assessment methods, particularly the so-called learner-centred methods. This study makes a contribution to overcome the missing links in existing research into the preferences of higher education students in relation to assessment methods and their results (Watering et al. 2008), into

Table 5. Associations with assessment: differences between groups defined by frequency of the use of learner-centred methods (n = 190).

	Low (n = 128) Mean (SD)	High (n = 62) Mean (SD)	t-value (188 df)
Associations			
Tests or examinations	3.30 (0.71)	3.15 (0.70)	1.39
Grades	3.18 (0.72)	3.17 (0.71)	0.09
Learning	3.25 (0.6)	3.11 (0.7)	1.4
Verification of knowledge	3.15 (0.64)	2.94 (0.61)	2.1
Success	3.03 (0.68)	3.00 (0.54)	0.34
Reflection	2.90 (0.70)	3.02 (0.64)	–1.07
Anxiety/stress	2.84 (0.9)	2.92 (0.73)	–0.65
Participation	2.87 (0.68)	2.78 (0.70)	0.8
Certification	2.68 (0.75)	2.76 (0.71)	–0.65
Help	2.60 (0.73)	2.71 (0.69)	–1.01
Imposition	2.42 (0.85)	2.4 (0.80)	0.11
Unfairness	2.31 (0.79)	2.37 (0.75)	–0.48
Fear	2.30 (0.81)	2.33 (0.72)	–0.21
Conflict	2.00 (0.75)	2.37 (0.8)	–3.08**
Perceptions			
Effectiveness	3.22 (0.58)	3.42 (0.56)	–2.26*
Fairness	3.10 (0.82)	3.48 (0.72)	–3.07**
Importance of feedback	4.17 (0.53)	4.2 (0.42)	–0.39
Importance of the reliability of the source of feedback	4.11 (0.52)	4.07 (0.5)	0.46

*$p < .05$; **$p < .01$ (adjusted with Benferroni correction).

the comparison of assessment practices in different disciplines and institutions (Gilles, Detroz, and Blais 2010) and into the effectiveness of learner-centred methods of assessment (Segers, Gijbels, and Thurlings 2008). In this section a summary and discussion of the main findings are presented.

With regard to the kinds of assessment methods that are used more in different programmes, findings show that the most frequent ones are written tests, oral presentations in group and team work. However, differences amongst the different programmes were found. In Education there were positive correlations in regard to assessment methods related to individual written reflections and individual portfolios. Negative correlations were found in the case of the written tests. In other words, in the programme of Education, learner-centred methods are more dominant than in other disciplines which continue to rely on more traditional methods of assessment. Also, findings indicate that students of Engineering differ from students of other programmes in regard to assessment methods directly related to team project.

As for the ways in which undergraduate students perceive assessment in terms of effectiveness and fairness associated with learner-centred methods of assessment, the participants who refer more frequently to these kinds of methods understand assessment as a fairer and more effective process than students who refer to traditional methods. Findings related to the extent to which undergraduate students show more positive associations with assessment in the context of learner-centred methods of assessment, reveal that there are no differences with statistical significance with an exception with regard to the association related to conflict. In this case, a higher number of undergraduate students state that they are assessed through learner-

centred methods. This may be explained, at least in part, by the nature of assessment methods themselves, e.g. portfolios and team projects. These are methods that are more systematic, are developed over time and require negotiation, collaboration and the integration of different perspectives amongst students and between students and faculty. They also entail a closer interaction between faculty and the students and they occur over time. Also, in these kinds of methods, discrepancies between beliefs and practice may be more easily identified, i.e. the gap between what one says is going to do and what one really does in practice. This is also visible in the coherence, adequacy and consistency (or lack of it) in teaching and assessment and their connection to learning.

In regard to the importance attached to feedback and the reliability of the source of feedback, there are no differences with statistical significance between the two groups. Students who report the most frequent use of traditional methods attach the same importance to receiving feedback, and to the reliability of the sources as the students who report being assessed through learner-centred methods. However, this deserves further research in order to examine the kinds of concepts and practices of feedback used by both faculty and students.

It is important to analyse further how higher education students look at external 'feedback messages' to promote self-regulatory competencies of learning and to understand the meaning, value and usefulness of external feedback (provided by faculty). It is also interesting to recognise the features that are associated with finding clues which enable faculty to enhance feedback, making it more appropriate and easily captured by the students, and, therefore, more effective for the self-regulation of the learning process. Earlier work suggests the need to improve the quality of feedback to students in higher education with implications for the redesigning of curricula (Beaumont, O'Doherty, and Shannon 2011). In this respect, Zabalza (2007) argues for a 'new culture at university' that implies, amongst other things, the consideration of a set of competencies for faculty including the methodological dimension, the evaluative dimension and the supportive dimension. Of key importance are follow-up assessment methods of students' learning (Zabalza 2007). This implies that the role, means and timing of assessment practices need to be understood within a clear and transparent framework for both faculty and students.

This also requires a closer look at assessment practices in order to create opportunities in higher education to take into account the characteristics of higher education students such as autonomy, active involvement, and responsibility for their learning. Faculty needs to develop assessment and pedagogical practices that foster self-regulatory competencies in the students. This may well foster the development of what Price et al. (2012) describe as 'assessment literacy', arguing that students need to be assessment literate and to understand assessment criteria and standards, in order to direct their learning.

This study suggests recommendations for further research. It would be important to understand the kinds of feedback used (oral, written, individual, in group, etc.) and their effects both in the case of traditional and learner-centred methods of assessment. This would enable us to build on earlier work in this field (Lizzio and Wilson 2008; Fernandes, Flores, and Lima 2012) especially in regard to the nature, context and socio-emotional features associated with feedback. As Black and Wiliam (1998) state, systematic formative assessment practices contribute to improve students' learning. Moreover, students with difficulties benefit more from formative assessment and students who benefit from formative assessment in classrooms show better results in

examinations and tests than students who are used to attending classes in which summative assessment prevails. Assessment practices should take into account the active participation of students in order to improve their learning and achievement. If this is to occur, formative assessment needs to be integrated in the teaching and learning process.

References

Almond, R.J. 2009. Group assessment: comparing group and individual undergraduate module marks. *Assessment & Evaluation in Higher Education* 34, no. 2: 141–48.

Beaumont, C., M.O. O'Doherty, and L. Shannon. 2011. Reconceptualising assessment feedback: a key to improving student learning? *Studies in Higher Education* 36, no. 6: 671–87.

Birenbaum, M., and R.A. Feldman. 1998. Relationships between learning patterns and attitudes towards two assessment formats. *Educational Research* 40, no. 1: 90–97.

Black, P., and D. William. 1998. Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice* 5, no. 1: 7–74.

Boud, D., R. Cohen, and J. Sampson. 1999. Peer learning and assessment. *Assessment & Evaluation in Higher Education* 24, no. 4: 413–26.

Brown, Sally, and Peter Knight. 1994. *Assessing learners in higher education*. London: KoganPage.

Carless, D. 2006. Differing perceptions in the feedback process. *Studies in Higher Education* 31, no. 2: 219–33.

Carless, D., D. Salter, M. Yang, and J. Lam. 2011. Developing sustainable feedback practices. *Studies in Higher Education* 36, no. 4: 395–407.

Craddock, D., and H. Mathias. 2009. Assessment options in higher education. *Assessment & Evaluation in Higher Education* 34, no. 2: 127–40.

Dochy, F., M. Segers, and D. Sluijsmans. 1999. The use of self, peer and co-assessment in higher education: a review. *Studies in Higher Education* 24, no. 3: 331–50.

Fernandes, S., M.A. Flores, and R. Lima. 2009. A tutoria no contexto do Project-Led Education (PLE): potencialidades e desafios. In *Tutoria e Mediação em Educação*, ed. A.M. VeigaSimão, A.P. Caetano and I.P. Freire, 89–113. Lisboa: Educa.

Fernandes, S., M.A. Flores, and R. Lima. 2012. Students' views of assessment in project-led engineering education: findings from a case study in Portugal. *Assessment & Evaluation in HigherEducation* 37, no. 2: 163–78.

Figari, G. 1996. *Avaliar: que referencial?* Porto: Porto Editora.

Flores, M., and A.M. Veiga Simão. 2007. Competências desenvolvidas no contexto do Ensino Superior: a perspectiva dos diplomados. In *Actas das V Jornadas de Redes de Investigación en Docencia Universitaria*. Alicante, Espanha: Universidade de Alicante. http://www.eduonline.ua.es/jornadas2007/comunicaciones/2E1.pdf

Gilles, J.L., P. Detroz, and J.G. Blais. 2010. An international online survey of the practices and perceptions of higher education professors with respect to the assessment of learning in the classroom. *Assessment & Evaluation in Higher Education* 36, no. 6: 719–33.

Hadji, C. 1994. *Avaliação: as regras do jogo*. Porto: Porto Editora.

Howie, P., and Bagnall, R. 2013. A critique of the deep and surface approaches to learning model. *Teaching in Higher Education* 18, no 4: 389–400.

Laird, T.F.N., and A.K. Garver. 2010. The effect of teaching general education courses on deep approaches to learning: How disciplinary context matters. *Research in Higher Education* 51: 248–65.

Lima, L.C. 2006. Bolonha à Portuguesa. *A Página da Educação* 160: 9.

Lizzio, A., and K. Wilson. 2008. Feedback on assessment: student's perceptions of quality and effectiveness. *Assessment & Evaluation in Higher Education* 33, no. 3: 263–75.

Marton, F., and R. Saljo. 1997. Approaches to learning. In *The experience of learning. Implications for teaching and studying in higher education*, ed. F. Marton, D. Hounsell, and N. Entwistle, 39–58. Edinburgh: Scottish Academic Press.

Meyers, N.M., and D.D. Nulty. 2008. How to use (five) curriculum design principles to align authentic learning environments, assessment, students' approaches to thinking and learning outcomes. *Assessment & Evaluation in Higher Education* 34, no. 5: 565–77.

Nicol, D., and D. Macfarlane-Dick. 2006. Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education* 31, no. 2: 199–218.

Pereira, D., and M.A. Flores. 2012. Percepções dos estudantes universitários sobre a avaliação das aprendizagens: um estudo exploratório. *Avaliação (Campinas)* 17, no. 2: 529–56.

Perrenoud, Philippe. 1999. *Avaliação: da excelência à regulação das aprendizagens: entreduaslógicas*. Porto Alegre: Artmed.

Poulos, A., and M.J. Mahony. 2008. Effectiveness of feedback: the students' perspective. *Assessement & Evaluation in Higher Education* 33, no. 2: 143–54.

Price, M., J. Carroll, B. O'Donovan, and C. Rust. 2011. If I was going there I wouldn't start from here: A critical commentary on current assessment practice. *Assessment & Evaluation in Higher Education* 36, no. 4: 479–92.

Price, M., C. Rust, B. O'Donovan, K. Handley, and R. Bryant. 2012. *Assessment literacy: The foundation of improving student learning*. Oxford: The Oxford Centre for Staff and Learning Development.

Ramsden, Paul. 2004. *Learning to teach in higher education*. London: RoutledgeFalmer.

Rowntree, Derek. 1987. *Assessing students: How shall we know them?* London: KoganPage.

Sambell, K., and L. McDowell. 1998. The values of self and peer assessment to the developing lifelong learner. In *Improving student learning – Improving students as learners*, ed. C. Rust, 56–66. Oxford, UK: Oxford Center for Staff and Learning Development.

Scouller, K. 1998. The influence of assessment method on students' learning approaches: Multiple choice question examinations versus assignment essay. *Higher Education* 35: 453–72.

Segers, M., and F. Dochy. 2001. New assessment forms in problem based learning: The value-added of the students' perspective. *Studies in Higher Education* 26, no. 3: 327–43.

Segers, M., D. Gijbels, and M. Thurlings. 2008. The relationship between students' perceptions of portfolio assessment practice and their approaches to learning. *Educational Studies* 34, no. 1: 35–44.

Sendziuk, P. 2010. Sink or swim? Improving students learning through feedback and self-assessment. *International Journal of Teaching and Learning in Higher Education* 22, no. 3: 320–30.

Simão, José Veiga, Sérgio Machado dos Santos, and António de Almeida Costa. 2003. *Ensino Superior: Uma visão para a próxima década*. Lisboa: Gradiva.

Sluijsmans, D., F. Dochy, and G. Moerkerke. 1999. Creating a learning environment by using self-, peer- and co-assessment. *Learning Environment Research* 1: 293–319.

Struyven, K., F. Dochy, and S. Janssens. 2005. Students' perceptions about evaluation and assessment in higher education: A review. *Assessment & Evaluation in Higher Education* 30, no. 4: 331–47.

Tang, C., P. Lai., D. Arthur, and S. F. Leung. 1999. How do students prepare for traditional and portfolio assessment in a problem-based learning curriculum? In *Themes and Variations in PBL: Refereed proceedings of the 1999 Bi-ennial PBL Conference*, Vol. 1, ed. J. Conway and A. Williams, 206–17). Australia: Australia Problem-Based Learning Network (PROBLARC).

Watering, G., D. Gijbels., F. Dochy, and J. Rijt. 2008. Students' assessment preferences, perceptions of assessment and their relationships to study results. *Higher Education* 56: 645–58.

Webber, K.L. 2012. The use of learner-centered assessment in US colleges and universities. *Research in Higher Education* 53: 201–28.

Wen, M.L., and C.C. Tsai. 2006. University students' perceptions of and attitudes toward (online) peer assessment. *Higher Education* 51: 27–44.

Yorke, M. 2011. Summative assessment: dealing with the 'measurement fallacy'. *Studies in Higher Education* 36, no. 3: 251–73.

Zabalza, M. 2007. *Competencias docentes del professorado universitario. Calidad y desarrolo profesional*. Madrid: Narcea.