EVALCOMIX®: A WEB-BASED PROGRAMME TO SUPPORT COLLABORATION IN ASSESSMENT

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ABSTRACT

For many years assessment strategies and practices have emphasized on the one hand the importance of integrating assessment and learning and, secondly, the need to develop technological tools that facilitate this relationship and integration. In this paper, firstly we describe the EvalCOMIX® web service and then we present the opinions of university tutors and students that have used this web service in their courses. We conclude that EvalCOMIX® is actually more than a just a web-based programme for assessment. Through its use, on the one hand, it can encourage student participation in the assessment process, by selecting or defining criteria, building tools and processes used in self-assessment and peer assessment. In addition, students receive valuable and relevant information about their performance and progress, so that improvements can be incorporated both in their learning process and the results they achieve.

KEYWORDS

Assessment, e-Assessment, Assessment as Learning, Empowerment, Participative Assessments.

1. INTRODUCTION

For many years assessment strategies and practices have emphasized on the one hand the importance of integrating assessment and learning and, secondly, the need to develop technological tools that facilitate this relationship and integration.

To support the integration of learning and assessment the development of the EvalCOMIX® tool began in 2010. It has subsequently transformed into a web-based programme that both enables and facilitates the implementation of the concept of assessment as learning and empowerment.

In this chapter, firstly we describe this web programme and then we present the opinions of university tutors and students that have used the EvalCOMIX® programme in their courses.

2. FROM ASSESSMENT OF LEARNING TO ASSESSMENT AS LEARNING AND EMPOWERMENT

Traditionally the assessment of learning has been characterized by maintaining a separation between teaching and learning (Falchikov, 2005, p. 82) and employing a narrow range of systems which do not always reflect the objectives of the curriculum and often fail to specify the marking criteria, therefore giving little or no power to students, missing the opportunity to make them responsible for their own learning process and, among other things, causing adverse feelings and lasting negative consequences.

Faced with this situation, common in most educational contexts, many authors with innovative approaches to their practices and contributions are now proposing alternative scenarios that increasingly place the focus of assessment on students' progress and learning rather than on just providing a final grade.

In relation to this we would highlight the contributions of; Carless (2007) on learning-oriented assessment; Rodríguez-Gómez and Ibarra-Sáiz (2011) who expand this concept whilst emphasising the possibilities and importance of electronic forms of assessment; Taras (2010), who stresses the role of

self-assessment; Nicol, Thomson & Breslin (2014) who focus on the value of peer assessment; the concept of sustainable assessment as expressed by Boud (2000); Boud & Molloy (2013) who concentrate on feedback to students or Price, Rust, O'Donovan, Handley & Bryant (2012) with their contributions regarding the need for both tutors and students to receive training in assessment processes.

The authors of this article are currently focused on the development and application of the concept of assessment as learning and empowerment (Rodríguez-Gómez and Ibarra-Sáiz, 2015; Ibarra-Sáiz and Rodríguez-Gómez, 2016) characterized by three main challenges: achieving the participation of students in the assessment process, incorporating self-assessment, peer assessment and shared assessment; feedforward, understood as strategies that provide proactive information on students' progress and results so that they can participate in their improvement; and high quality tasks, ie, challenging tasks that are motivational and related to daily life. The implementation of these three challenges allows university students to self-regulate their learning process and provides empowerment within their personal, professional and working environments.

3. THE NEED FOR AUTOMATION IN ASSESSMENT PROCESSES

Currently, within the contexts experienced by the authors, the process of teaching and learning takes place in classrooms with large numbers of students, despite what recent legislative changes intended to achieve. Furthermore, it covers both knowledge and skills and does not take place only within the classroom but in some cases is developed entirely outside them. These are factors that also imply a change in the conditions and characteristics of the relevant assessment. Within universities, the non-contact nature of some or all subject areas is a fact that requires the use of campus-based or virtual platforms and therefore appropriate and valuable tools are needed to undertake assessment through these platforms and which incorporate the latest thinking on assessment practice.

Assessing skills and knowledge involves using different strategies and undertaking assessment at different times with different objectives and criteria. This calls for an effort that has produced and is producing some unease and insecurity among university tutors, who face a demanding environment and who often do not have the most convincing answers. In this situation technology should facilitate the assessment process. It should support assessment, encouraging the staging of the progress that is taking place through the assessment process.

According to the concept of assessment as learning and empowerment, these technological tools must be integrated within high quality tasks, encourage the participation of students in their own assessment process and provide useful and relevant information on their progress so they can take appropriate decisions in order to improve their work and performance. It is with the express intention of connecting and consolidation these various propositions that the EVALfor Research Group has been developing the by EvalCOMIX® web-based programme which we refer to in the following sections.

4. HOW DOES EvalCOMIX® WORK?

EvalCOMIX® is a web-based programme (http://evalcomix.uca.es) that supports the creation and implementation of assessment tools (rubrics, grading scales, mixed instruments etc.) and their use in assessment process both by tutors and students. Consecuently, it demands their active participation in the assessment process.

Below we present how this programme works once installed on a virtual campus platform and we focus on answering the following questions: how can effective assessment instruments be designed?, how should the roles of assessors be assigned to tutors and students?, how can the weighted scores of the assessments provided by EvalCOMIX® be interpreted?, how can the results of the assessments be analysed?

4.1 Designing Assessment Instruments

Decisions on issues such as the design of assessment instruments, specifying the criteria or the selection of participatory assessment methods are all included within the programme (Rodríguez-Gómez and Ibarra-Sáiz, 2016). In this section we discuss how to design assessment tools using the EvalCOMIX® programme.

To design appropriate assessment tools it is first necessary to access the Tool Management section. From that screen New Instrument is selected. A list of the possible tools that can be built with EvalCOMIX® (Figure 1) is then displayed.

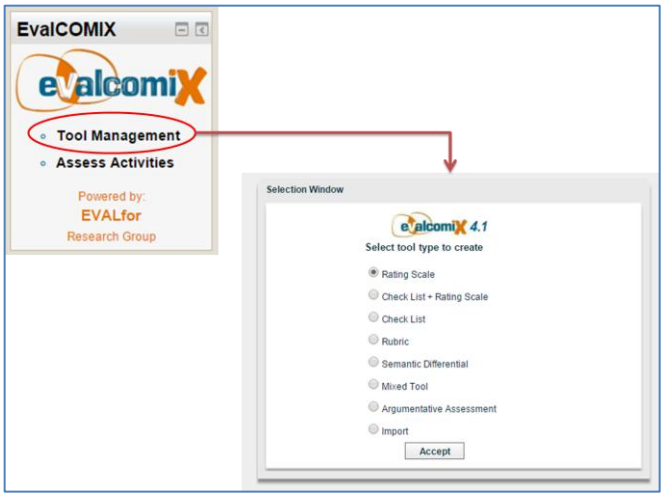


Figure 1. Options and assessment tools provided by EvalCOMIX®

EvalCOMIX® guides the process of construction of each instrument by offering options about which decisions must be taken (Figure 2). Before building the tools it is preferable to plan and determine the weighting that each aspect will have within the overall assessment. By default, EvalCOMIX® assigns a pro-rata weighting, but the percentages of all of the elements assessed (dimensions and attributes) can be changed as required. Once a new instrument has been created, it is automatically added to the full list of instruments available for tutors.

Figure 2. Screen for the construction of a rubric

4.2 Assigning the Roles of Assessor

One advantage of EvalCOMIX® is that the role of assessor can be undertaken by both the tutors and the students, through self-assessment, peer review, using all or some of the three modes of assessment. To do this

each assessor is assigned the assessment tool they will use (Figure 3). The instrument can be the same or different for each of the assessors. Peer review can be anonymous or public. Furthermore, this type of assessment can be carried out by groups or by individual students.

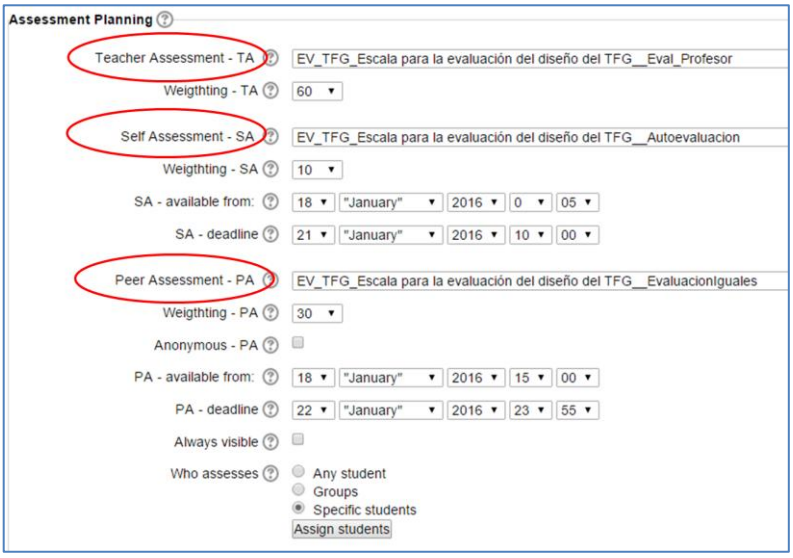
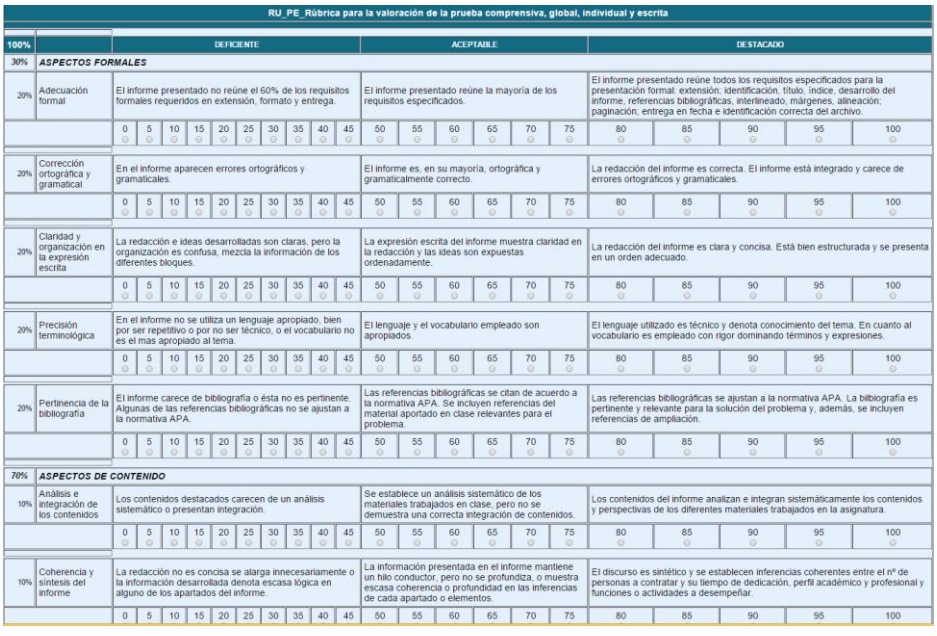


Figure 3. Assigning roles in assessment and weighting

4.3 Considerations on the Issue of Weighting

The weighting of the grades using EvalCOMIX® is achieved by two means. Firstly, for the elements of assessment in which the weighting of the instrument used in each type of assessment is specified (Figure 4) and, secondly, for the assessment tools where the weighting is provided for each component and, within them, to each of the separate elements, scored between a minimum score of 0 and máximum of 100. The following figure shows an excerpt from a rubric in which the weighting of the two elements that are assessed (format and content) are specified as well as the specific elements that are being assessed.



RU_PE_Rúbrica para la valoración de la prueba comprensiva, global, individual y escrita				
100%		DEFICIENTE	ACEPTABLE	DESTACADO
30%	ASPECTOS FORMALES			
20%	Adecuación formal	El informe presentado no reúne el 60% de los requisitos formales requeridos en extensión, formato y entrega.	El informe presentado reúne la mayoría de los requisitos especificados.	El informe presentado reúne todos los requisitos especificados para la presentación formal: extensión; identificación, título, índice, desarrollo del informe, referencias bibliográficas, interlineado, márgenes, alineación; paginación; entrega en fecha e identificación correcta del archivo.
		0 5 10 15 20 25 30 35 40 45	50 55 60 65 70 75	80 85 90 95 100
20%	Corrección ortográfica y gramatical	En el informe aparecen errores ortográficos y gramaticales.	El informe es, en su mayoría, ortográfica y gramaticalmente correcto.	La redacción del informe es correcta. El informe está integrado y carece de errores ortográficos y gramaticales.
		0 5 10 15 20 25 30 35 40 45	50 55 60 65 70 75	80 85 90 95 100
20%	Claridad y organización en la expresión escrita	La redacción e ideas desarrolladas son claras, pero la organización es confusa, mezcla la información de los diferentes bloques.	La expresión escrita del informe muestra claridad en la redacción y las ideas son expuestas ordenadamente.	La redacción del informe es clara y concisa. Está bien estructurada y se presenta en un orden adecuado.
		0 5 10 15 20 25 30 35 40 45	50 55 60 65 70 75	80 85 90 95 100
20%	Precisión terminológica	En el informe no se utiliza un lenguaje apropiado, bien por ser repetitivo o por no ser técnico, o el vocabulario no es el mas apropiado al tema.	El lenguaje y el vocabulario empleado son apropiados.	El lenguaje utilizado es técnico y denota conocimiento del tema. En cuanto al vocabulario es empleado con rigor dominando términos y expresiones.
		0 5 10 15 20 25 30 35 40 45	50 55 60 65 70 75	80 85 90 95 100
20%	Pertinencia de la bibliografía	El informe carece de bibliografía o ésta no es pertinente. Algunas de las referencias bibliográficas no se ajustan a la normativa APA.	Las referencias bibliográficas se citan de acuerdo a la normativa APA. Se incluyen referencias del material aportado en clase relevantes para el problema.	Las referencias bibliográficas se ajustan a la normativa APA. La bibliografía es pertinente y relevante para la solución del problema y, además, se incluyen referencias de ampliación.
		0 5 10 15 20 25 30 35 40 45	50 55 60 65 70 75	80 85 90 95 100
70%	ASPECTOS DE CONTENIDO			
10%	Análisis e integración de los contenidos	Los contenidos destacados carecen de un análisis sistemático o presentan integración.	Se establece un análisis sistemático de los materiales trabajados en clase, pero no se demuestra una correcta integración de contenidos.	Los contenidos del informe analizan e integran sistemáticamente los contenidos y perspectivas de los diferentes materiales trabajados en la asignatura.
		0 5 10 15 20 25 30 35 40 45	50 55 60 65 70 75	80 85 90 95 100
10%	Coherencia y síntesis del informe	La redacción no es concisa se alarga innecesariamente o la información desarrollada denota escasa lógica en alguno de los apartados del informe.	La información presentada en el informe mantiene un hilo conductor, pero no se profundiza, o muestra escasa coherencia o profundidad en las inferencias de cada apartado o elementos.	El discurso es sintético y se establecen inferencias coherentes entre el nº de personas a contratar y su tiempo de dedicación, perfil académico y profesional y funciones o actividades a desempeñar.
		0 5 10 15 20 25 30 35 40 45	50 55 60 65 70 75	80 85 90 95 100

Figure 4. Example of weighting for each component and element in a rubric created using EvalCOMIX®

4.4 Analysis of Results

Once the assessment process is complete (construction of instruments and assessment by the tutors and students) EvalCOMIX® (Figure 5) enables both tutors and students to see all the assessments that have been completed and who has completed them following the appropriate assessment procedures. Tutors can also get an overview of the gradings in simple diagrams, where the maximum, minimum and median scores are shown. Assessment results can be analysed by student group, class and assessment methods used.

Figure 5. Grades achieved by assessment method and weighting and representation using box and whisker plots of scores on self-assessment and peer assessment of a class

5. WHAT DO USERS SAY ABOUT EVALCOMIX®?

Two of the main features of the EvalCOMIX® programme are that both tutors and students can use it (in groups and individually) and that it provides information on the results achieved for all of the elements assessed. This aligns with the concept of assessment as learning and empowerment as it facilitates the participation of students in their own assessment process and provides useful and timely information to students on their performance.

Specifically designed questionnaires were employed to obtain the opinion of tutors and students about a variety of issues after they had used EvalCOMIX® in their academic programmes, and the results are presented in the following sections.

5.1 The tutors' Views

During the academic year 2014/2015 a total of 65 tutors from Latin American universities completed a questionnaire regarding their opinions after employing the EvalCOMIX® programme. Table 1 shows the distribution of these tutors by gender, their university and subject area.

Table 1. Distribution of the sample of tutors by Gender, University and Subject area

	n	%
Gender		
Male	18	33.85
Female	43	66.15
University		
PUCESI (Ecuador)	31	47.69
UCR (Costa Rica)	27	41.54
UNA (Nicaragua)	7	10.77
Subject area		
Arts and Humanities	10	15.38
Science	12	18.46
Health Sciences	10	15.38
Social Sciences	21	32.31
Engineering and Architecture	12	18.46

In Figure 6 we see how, for most tutors, the EvalCOMIX® programme provides a simple process for the construction of assessment instruments which can be easily modified and shared with others in a way that encourages a collaborative approach to the design and creation of assessment instruments.

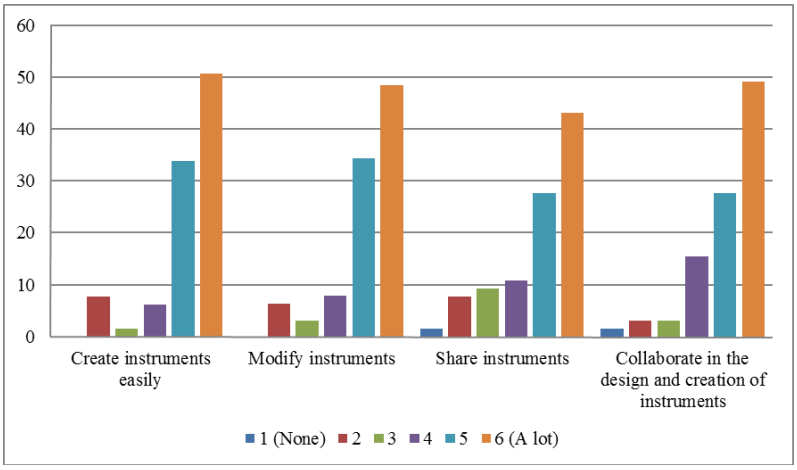


Figure 6. Tutors' opinions on the construction of instruments using the EvalCOMIX® programme

When tutors were asked about the usefulness and benefits of EvalCOMIX® (Figure 7), their opinion was in the main positive. They considered it to be a programme that simplifies the assessment process for tutors, is applicable to any subject area, improves the competence level of tutors in dealing with assessment, encourages innovation within the university and they believe it should be more widely used in all universities. Overall, 87.69% of tutors expressed a high degree of satisfaction with EvalCOMIX®.

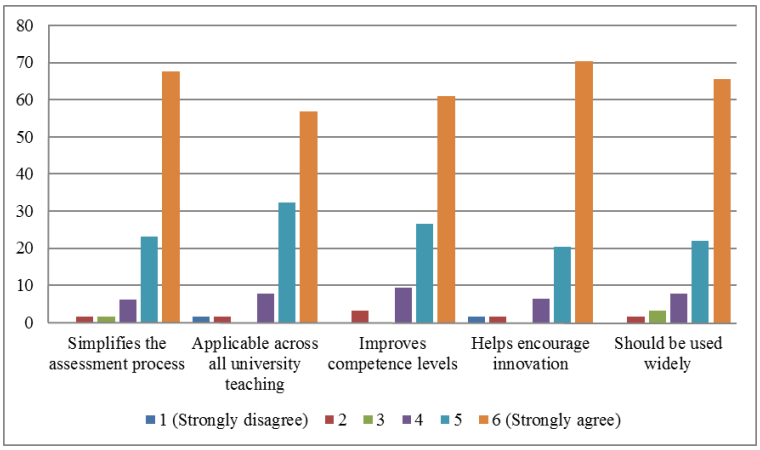


Figure 7. Tutors' opinions on the usefulness and benefits of the EvalCOMIX® programme

5.2 The students' Views

The students surveyed were undergraduates taking degrees in Business Administration and Management (BAM) and Finance and Accounting (F&A) who during the academic years 2012-13 (73 students) and 2013-14 (92 students) used EvalCOMIX® within their courses. Their opinions produce interesting results (Rodríguez-Gómez and Ibarra-Sáiz, 2016). The results obtained by asking students of BAM and F&A on using the EvalCOMIX® programme, on self-assessment and peer assessment are presented in Figure 8.

It shows that students show a higher degree of agreement to the issue that EvalCOMIX® was "useful to provide prior knowledge of the criteria and assessment tools, as well as the elements being assessed" (M = 4.65, SD = 1.09). They also consider using EvalCOMIX® as "simple and easy" (M = 4.61; SD = 1.10); "useful because the information that was provided enables subsequent tasks or activities to be improved"

(M = 4.50, SD = 1.14); "motivational because the feedback from tutor assessment, self-assessment, and peer assessment was available simultaneously and rapidly" (M = 4.49, SD = 1.17) and, finally, it proved to be a "friendly and intuitive environment" (M = 4.24; SD = 1.19).

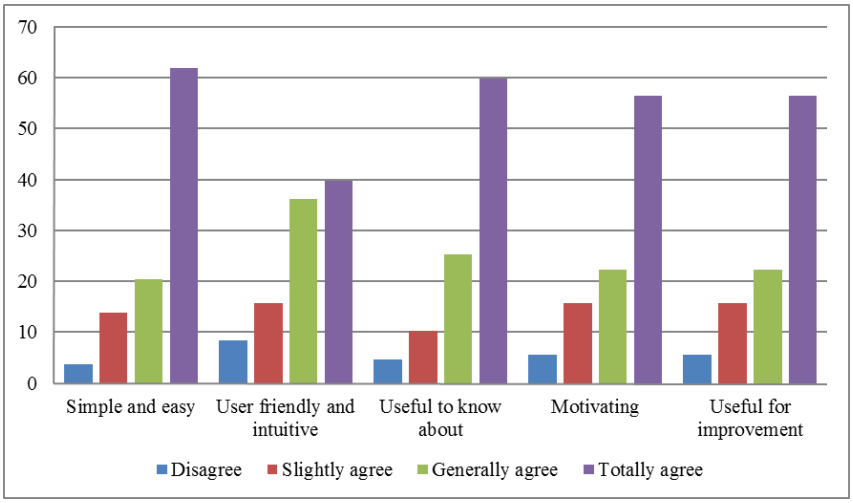


Figure 8. The opinions of students on using the EvalCOMIX® programme for self-assessment and peer assessment

6. CONCLUSION

In the previous section we have presented the very positive results on the opinions of tutors and students regarding the use of EvalCOMIX® in the assessment process.

These positive opinions focus on the one hand on the programme's characteristics, such as its simplicity and user friendly environment. The tutors further indicate that is applicable to all subject areas and it encourages collaboration in creating instruments and modifying them to adapt to different situations. The opinions of users also indicated that EvalCOMIX® promotes transparency in assessment, specifying the assessment criteria and making the instruments public prior to their implementation. Furthermore the feedback from students was particularly positive about how motivating it was and how they felt involved as a result of the speed with which they received feedback on their performance and progress. In terms of the concept of assessment as learning and empowerment it is important to emphasize the value of the information provided by the self-assessment, peer assessment and tutor evaluation via EvalCOMIX® which enables them to improve their subsequent work.

We conclude that EvalCOMIX® is actually more than a just a web-based programme for assessment. Through its use, on the one hand, it can encourage student participation in the assessment process, by selecting or defining criteria, building tools and processes used in self-assessment and peer assessment. In addition, students receive valuable and relevant information about their performance and progress, so that improvements can be incorporated both in their learning process and the results they achieve.

EvalCOMIX® is a web programme that promotes learning and assessment in a fully integrated way but, to achieve this it is vital we fully understand the concept of assessment. We will only be able to fully exploit the potential of EvalCOMIX® if we are able to; introduce innovations in assessment; ensure all assessment is fully transparent, proposing and agreeing in advance the activities and elements that will be assessed and the criteria that will be applied and agreeing in advance the products and actions to be evaluated; enable the full participation of students in the evaluation process; provide both tutors and students with feedforward on student performances; and fully integrate the use of of high quality tasks within assessment.

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