
Digital rubric-based assessment of oral presentation competence with technological resources for preservice teachers

Evaluación basada en rúbricas digitales de la competencia de presentación oral con recursos tecnológicos para profesorado en formación

ANA BELÉN PÉREZ-TORREGROSA

Departamento de Didáctica y Organización Escolar
Facultad de Ciencias de la Educación
Universidad de Málaga
Campus de Teatinos, 29010, Málaga (España)
anabpt@uma.es
<https://orcid.org/0000-0002-3428-6348>

MANUEL CEBRIÁN-DE-LA-SERNA

Departamento de Didáctica y Organización Escolar
Facultad de Ciencias de la Educación
Universidad de Málaga
Campus de Teatinos, 29010, Málaga (España)
mcebrian@uma.es
<https://orcid.org/0000-0002-0246-7398>

MARÍA JESÚS GALLEGO-ARRUFAT

Departamento de Didáctica y Organización Escolar
Facultad de Ciencias de la Educación
Universidad de Granada
Campus Universitario de Cartuja, 18071, Granada (España)
mgallego@ugr.es
<https://orcid.org/0000-0002-2296-5431>

Resumen: Este estudio está dirigido a la e-evaluación de la competencia de presentación oral utilizando recursos tecnológicos en un modelo activo que combina aprendizaje basado en proyectos y aula invertida. Este estudio aplica el uso de una rúbrica digital para la evaluación de la competencia en presentación oral en diferentes situaciones de evaluación activa y progresiva de 99 futuros docentes en las que la participación es opcional u obligatoria. Los resultados muestran que la rúbrica digital empleada en varios momentos

es una metodología y una tecnología que facilita el proceso de retroalimentación y diálogo entre docentes y estudiantes sobre los criterios de evaluación. Los resultados apoyan futuras decisiones de diseño metodológico de evaluación formativa apropiadas en entornos de aprendizaje online.

Palabras clave: Rúbrica, Competencia de Presentación Oral, Evaluación, Futuros Docentes.

Abstract: This study focuses on e-assessment of oral presentation competence using technology resources in a model that combines project-based learning and flipped learning. This study uses a digital rubric to assess oral presentation competence in different situations of progressive assessment for 99 preservice teachers, situations in which participation was either optional or compulsory. Findings show that the digital rubric used at various times is a methodology and a

technology that facilitates the feedback process and dialogue between teachers and students about the assessment criteria. The results support future decisions for methodological design of formative assessment appropriate to online learning environments.

Keywords: Rubric, Oral presentation competence, Assessment, Preservice teachers.

INTRODUCTION

Developing oral presentation competence is an essential goal of higher education, as this competence is crucial for future personal and professional success (Dunbar *et al.*, 2006; Morreale *et al.*, 2017; van Ginkel *et al.*, 2015). Oral presentation competence is recognized as a central professional competence (Campbell *et al.*, 2001). Studying oral presentation competence is important because it helps to develop and improve skills that are necessary for many aspects of professional careers. The concept of oral presentation competence is grounded in the interrelation of the cognitive, behavioral, and affective domains (Bower *et al.*, 2011; De Grez *et al.*, 2009b; van Ginkel *et al.*, 2017). These three domains are brought to bear on speaking in public in order to inform, express oneself, and connect with others in a reformulation of “competence-based teacher training” (and its goal of training in specific teaching skills) (Mulder, 2014).

Oral presentation competence includes appropriate content, design, and organization of the presentation, as well as presentation skills (Ritchie, 2016). These must be developed in conjunction with digital competence (Redecker, 2017). We cannot separate progress in acquiring and improving oral and digital skills because the two together form the core of the teaching profession.

The teaching profession places great emphasis on the importance of oral presentation skills, although few studies in education research focus on improving preservice teachers’ oral presentation competence by assessing it. Technology development has clearly changed both the learning environment and emphasis on use of support resources, linking oral presentation and digital competences more closely, while the Covid-19 pandemic has made it necessary to use these competences in online environments.

Peer and teacher assessment

The expansion of learning for undergraduates has generated studies of continuous and progressive assessment with digital rubrics in engineering, medicine,

anthropology, education, and mathematics (among other subjects) (Cebrián-de-la-Serna and Bergman 2014; Crawford *et al.*, 2020; Haanstad, 2020; Houston and Thompson, 2017; Zheng *et al.*, 2019). Such assessment is especially important in the preservice training of preservice teachers, due to the profession's exercise of the double role of assessor and assessed and their evolution (Pathak and Le Vasan, 2015), as well as the importance of oral presentation competence (Mulder, 2014; Pathak and Le Vasan, 2015; van Ginkel *et al.*, 2017). The digital rubric has a specific methodology for competence-based assessment and is a tool for such assessment that facilitates the feedback process and dialogue on the assessment criteria, converts continuous assessment into formative (Houston and Thompson, 2017; Nordrum *et al.*, 2013). The rubric enables clear orientation for the academic tasks, for the teaching and assessment of oral presentations on academic projects and simulated professional scenarios (De Grez *et al.*, 2012; Galván-Sánchez *et al.*, 2017).

This study focuses on developing oral presentation competence, which is key in the early preservice teaching profession and throughout life. The development occurs through intervention using a strategy of continuous and progressive assessment by teachers and peers. A meta-analysis by Falchikov and Goldfinch (2000) discovered that the highest correlations between scores given by classmates and by the teacher occurred when global judgements based on well-defined criteria rather than individual dimensions scoring criteria were used. Although peer scores do not differ considerably from teacher scores (Mulder, 2014).

Given the wide use of peer-assessment, especially in higher education, the relative precision of scoring by classmates vs. the instructor is an important concern for both educators and researchers. This concern has grown with the increase in peer-assessment in online environments. Li *et al.* (2016) provide a synthesis of research findings on peer-assessment since 1999, when computer-assisted peer-assessment began to be used. Adopting a hierarchical linear modeling approach, they found that the average estimated Pearson correlation between scores by classmates and instructors was .63, a moderately strong value. This correlation is significantly higher when peer-assessment is optional and not compulsory (among other factors), when it is not anonymous, when peer-assessment provides both scores and qualitative comments (not just scores), and when peer assessors participate in development of the scoring criteria.

Assessment drives the activities in which the students participate. Because these activities support students' learning, careful design of a combined assessment strategy (including peer-assessment) guarantees that students are involved in the associated learning resources (Meyers and Nulty 2009).

Rubric for assessment

The digital rubric provides the opportunity for formative assessment of students' oral presentation, as it is an instrument that explains the criteria and expectations. It also facilitates feedback processes (van Ginkel *et al.*, 2017).

In training reviewers to use the rubric, time should be dedicated to watching the presentations and then discussing how to assess them for each competence. Such preparation promotes greater consistency in individual scoring among assessors (Dunbar *et al.*, 2006). The rubrics can thus be a tool that influences efforts to convert continuous assessment into formative.

Digital rubrics are used to assess oral presentation competence in numerous fields –engineering, the sciences, conservation-restoration and design, among others (Delgado and Fonseca-Mora, 2010; Menéndez-Varela and Gregori-Giralt, 2016; Pathak and Le Vasan, 2015). It is important that students provide feedback information with the rubric –not just scores but also comments. In this way, rubrics can be a tool for articulating feedback information (Nordrum *et al.*, 2013).

Progressive assessment

A single session of peer-assessment with a rubric is not enough to generalize about any improvement in this competence. The review by Zheng *et al.* (2019) showed that most studies grounded in “Activity theory” implement only one round of peer-assessment and do not reward assessors (for example, points in the subject ratings or extra points). When attempts have been made to integrate formative assessment for learning with summative assessment of learning, formulas such as repetition of the measures have been proposed (Houston and Thompson, 2017).

This study is based on three main characteristics of assessment:

- Continuity, which guarantees more objectivity in the assessment, since repeating assessments enables contrast of the results throughout the formative process and monitoring learning in oral competence.
- Co-participation, which is grounded in involvement of the students themselves in self-assessment and assessment of their peers using the same criteria with which the teacher will assess them. This procedure makes students aware of their real formative level, enabling them to assume full responsibility for directing their own learning. It also increases the level of reliability (De Grez *et al.*, 2009a; De Grez *et al.*, 2012; Magin and Helmore, 2001; Skovholt *et al.*, 2019).
- Progressive assessment, fueled by the grades that can be assigned, according

to the student him-or herself and provisionally, especially for activities whose purpose is learning and assessment. During progressive assessment, students have the possibility of modifying those grades according to the progress achieved in a negotiation between student and teacher (Madruga *et al.*, 2020).

Oral presentation competence is a goal for university education and professional success. It combines the importance to the teaching profession of orality, expressive narration, and dialogue among peers. In this study, it is important to research oral presentation competence, together with progressive assessment. Oral competence is very important for any teacher in any teaching mode because it is their tool for communication and dialogue to build knowledge with the student, being especially important in the domain of distance communication with the use of technology.

The study focuses on assessing oral presentation competence when students defend projects publicly and orally that promote participation and the use of quality technological resources (digital competence). Starting from these premises, the goals of this study are:

General goal. To understand the relationships between assessments by students and teachers through experimentation using different assessment strategies (two types of participation, “optional/compulsory”, Strategies A and B) with rubrics to encourage the learning of oral presentation competence.

Specific goals

1. To describe and compare the trends in scores from peer and teacher assessments during progressive assessment of oral presentation competence, depending on who performs the assessment at what time in the learning process.
2. To explore the progressive assessment methodology for oral presentation competence, depending on who performs the assessment (peer and teacher), the time of the assessment (initial, intermediate, and final), and the participation strategy (A and B).
3. To determine the relationship of the general grade obtained in the subject to the rubric score for oral presentation competence depending on who performs the assessment and the time of the assessment, especially for use and quality of the technological resources used.
4. To verify the value of the different strategies, persons, and times of assessment of oral presentation competence for predicting final grades in the subject.

METHOD

Participants

The sample is a non-probability convenience sample (Cohen *et al.*, 2011) composed of $n = 99$ undergraduates from the south of Spain. During one semester two natural groups of subjects in Educational Technology (EdTech) prepared oral presentations in stable work teams of 4-5 members (with an occasional exception, minimum 3 and maximum 6 members). The students underwent progressive evaluation (initial, intermediate, and final) by peers and by the teachers using a digital rubric.

Setting, tools, and rubric

The group ($n = 52$) that was required to participate in the full assessment process followed Strategy A (compulsory). The criterion for inclusion in the study was having completed the three e-rubric applications (electronic assessment by peers and teacher) progressively and in full, as well as diligently attending. The group ($n = 47$) not required to perform progressive assessments except for the last presentation, the score on which was decisive for the grade, followed Strategy B. Both groups followed a combined model of project-based learning (PBL) and flipped learning. The general methodology of the subjects consisted mainly of an inverted classroom model –Flipped Classroom–, where the materials and resources were previously uploaded to the internet with specific activities that were carried out during class time and at the end of the class an evaluation rubric was applied. There was a single project to be developed for the whole course by each team, under the Project Based Learning model, which served as the central axis of the work of each team and student, where in three moments the development of the work was presented in public for monitoring and evaluation by the teacher and peers.

The analytic rubric used to assess oral presentation competence consisted of four assessment criteria with indicators and evidence assigned different point values and three or four levels of achievement (Table 1). The rubric is available on <https://acortar.link/ud3JX5>

Table 1. Rubric to assess oral presentation competence

ASSESSMENT CRITERIA, INDICATORS AND EVIDENCE	ACHIEVEMENT LEVELS
1. To present sufficient, relevant, well-structured content.	
1.1. Quantity and relevance of information.	1. Shifts into a different topic, with conceptual errors.
1.1.1. Presents appropriate, precise information from a scholarly perspective.	2. Focuses on secondary issues, missing some important ones (more than 2 issues ignored).
	3. Focuses on the main issues but forgets 1-2 of them.
	4. Treats all of the most important elements on the topic well and comprehensively.
1.2. Organization of message.	
1.2.1. Presents an organized message.	1. Disorganized message, jumps from one topic to another. Cannot be followed.
	2. Lacks clear organization, is difficult to follow.
	3. Is organized but is not very coherent.
	4. Is clearly, coherently organized (not confusing).
2. To convey a message confidently to an audience.	
2.1. Formal qualities of the presentation.	1. Does not manage to finish the presentation and does not allow time for comments and questions. Finishes very early.
2.1.1. Adaptation to time and other requirements of the presentation.	2. Adapts presentation to the stipulated time and comments/questions but does not allow enough time for questions.
	3. Adapts to the stipulated time and leaves enough time for comments/questions.
2.2. Body language and audience rapport.	
2.2.1. Moves around in a confident, relaxed manner.	1. Is stiff, with nervous uncontrolled gestures. Does not move around.
	2. Is stiff but controls nerves. Does not move around.
	3. Is sometimes relaxed. Moves around some.
	4. Appears relaxed and moves around freely with grace and composure.
2.3. Oral expression.	
2.3.1. Voice is always clear and has good intonation.	1. Unintelligible. Volume of voice is very low, speaks in a monotone. Poor intonation.
	2. Is hard to understand. Low volume of voice with poor intonation and uneven tone.
	3. Fairly intelligible. Normal volume of voice and/or good intonation.
	4. Easy to understand. Normal volume of voice, speaks clearly with good intonation.

[CONTINÚA EN LA PÁGINA SIGUIENTE]

Table 1. Rubric to assess oral presentation competence

ASSESSMENT CRITERIA, INDICATORS AND EVIDENCE	ACHIEVEMENT LEVELS
3. To adapt to the audience (general public or tribunal) by establishing fluid interaction.	
3.1. Motivates and captures interest of the audience or tribunal.	1. Does not awaken interest or encourage participation.
3.1.1. Encourages interest and participation of the audience or tribunal.	2. Awakens some interest but does not encourage participation. 3. Awakens some interest and sometimes encourages participation. 4. Awakens interest, encourages participation, and gets audience to participate.
3.2. Management and control of audience or tribunal.	
3.2.1. Handling of questions and answers, comments from the audience, and unexpected situations.	1. Answers shift into what the speaker knows, with digressions. Does not know how to react to unexpected situations. 2. Shows uncertainty in answering questions. Does not know how to react to unexpected situations. 3. Answers questions well but takes a long time. Hesitates and stutters when faced with unexpected situations. 4. Answers questions correctly and credibly. Handles unexpected situations well.
4. To be able to use high-quality technology resources integrated into the message.	
4.1. Degree of assurance in handling resources.	1. Reads the whole talk from written notes and hardly makes eye contact with audience.
4.1.1. Uses technological resources for presentations to support speech and message.	2. Often reads from notes or slides and sometimes makes eye contact with audience. 3. Depends on slides or transparencies as well as written notes, using the former as a closed script and establishing frequent contact with audience. 4. Slides or transparencies are integral support for the presentation and complement it.
4.2. Quality of technological resources.	1. Uses (many/few) slides with a lot of text and overloaded outlines.
4.2.1. Prepares high-quality technological resources.	2. Uses (many/few) slides that are neither attractive nor clear. 3. Uses an appropriate number of slides, which are attractive but unclear and inappropriate. 4. Uses a good number of slides, which are attractive, clear, and appropriate, as well as other multimedia resources.

The rubric was thus flexible. The assessment criteria were:

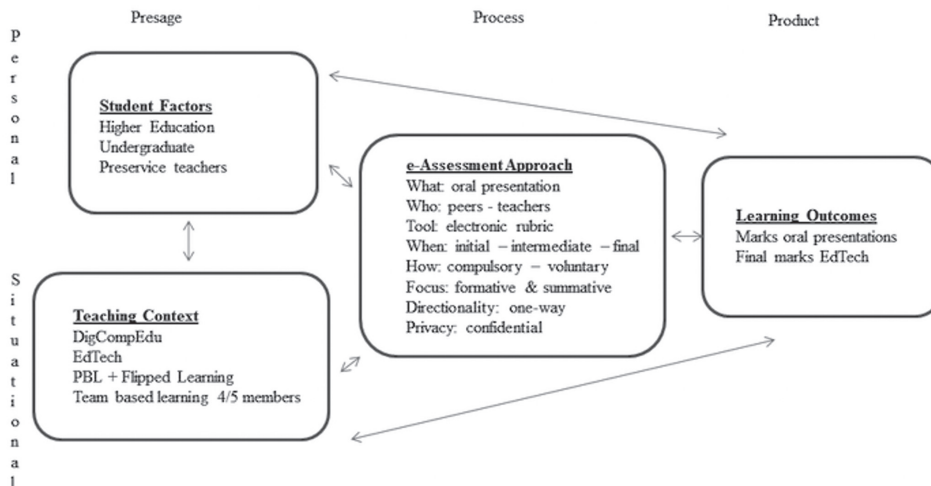
- C1. To present sufficient, relevant, well-structured content (hereafter Content).
- C2. To convey a message confidently to an audience (hereafter Message).
- C3. To adapt to the audience (general public or tribunal) by establishing fluid interaction (hereafter Adapting).
- C4. To be able to use high-quality technology resources integrated into the message (hereafter Resources).

Design and validation of rubric

To collect information on the preservice teachers' progress in developing oral presentation competence, an analytic rubric was created on the platform Corubic.com that teacher and students access for assessment and feedback. The rubric was designed and validated during the 2017-2018 academic year by expert teachers and researchers in a frame project on electronic assessment of competences from eight universities in five countries. The validation process has been developed in a previous study and the rubric's reliability was calculated using Cronbach's alpha (α), the value 0.934 (Fernández-Medina *et al.*, 2021). We have obtained a value of $\alpha = 0.80$ in this study.

Measurements and procedure

The procedure is an adaptation of the 3P model developed by Biggs (2003) (Figure 1), which stresses the process of e-assessment in project-based learning (PBL) + flipped learning. Following the team-based learning model, the participants were distributed into 29 teams to work on an educational technology project throughout the semester, with three assessment times (initial, intermediate, and final product). The project represented a variable proportion of the total grade in the subject according to the universities involved (10% UGR and 20% UMA). After the presentation of the project, students and teachers had some time to assess each team using the platform. In the initial and intermediate evaluations, students could indicate which indicators they did or did not wish to include.

Figure 1. The 3P model of e-assessment of oral presentation competence

Source: adapted from Biggs, 2003, p. 19.

The initial and intermediate assessments revealed aspects in need of improvement, as well as assessment of the evidence. All indicators and evidence had to be considered in the final assessment. This progression enables students to reduce stress, receive feedback, and be able to improve the different sections presented. At the same time, the assessments enabled the instructor to become familiar with the organization and main argument of the project and to provide advice on the pace the teams followed to avoid procrastination.

Data analysis

The data were analyzed using SPSS 24. First, descriptive analysis was performed, calculating the mean and standard deviation of the numerical variables, the frequency, and the percentage of categories of the categorical variables. In measuring peer and teacher assessment, the intraclass correlation coefficient (ICC) was calculated. An ANOVA model applied to a design of partially repeated measurements was performed to study the interaction between assessor and time of assessment (initial, intermediate, and final).

The differences between peer and teacher assessments by participation strategy were analyzed through the nonparametric Mann-Whitney U test. The association

among numerical variables was then determined through the nonparametric Spearman's Rho correlation coefficient. Normality fit of the numerical variables had been studied previously through the Kolmogorov-Smirnov statistic and the data shown not to follow normal distribution. Multiple regression analysis was applied to the data on the final grade in the subject to assess the predictive value of peer and teacher assessment. The significance level is 5%. The following were included:

Independent variables: Progressive assessment of oral presentation competence, with two types of participation, "optional/compulsory" (Strategies A and B).

Dependent variables: a. Results of the oral presentation competence rubric; b. Scores on selection of quality of resources and technological proficiency for the oral presentation; and c. Resulting total grades for the subjects.

Table 2. Distribution of assessments

STRATEGY	NUMBER STUDENTS (NUMBER GROUPS)	ASSESSOR	NUMBER OF INITIAL ASSESSMENTS	NUMBER OF INTERMEDIATE ASSESSMENTS	NUMBER OF FINAL ASSESSMENTS	TOTAL NUMBER OF ASSESSMENTS
A	52 (15 teams)	Peers	2,521	2,476	2,502	7,499
		Teacher	52	52	52	156
B	47 (14 teams)	Peers	1,405	1,168	1,306	3,879
		Teacher	47	47	47	141

Table 2 presents the distribution of the assessments by strategy followed and person who performed the assessment.

Findings

First, the differences between peer and teacher assessment were analyzed during progressive assessment of oral presentation competence. The results show that degree of agreement was significant in the first application of the e-rubric (initial time) for criteria Content (ICC .171) and Resources (ICC .207). In the intermediate assessment, we observe significant agreement on the total score (ICC .339) for criteria Adapting (ICC .343) and Resources (ICC .321). In the final assessment, significant agreement occurred only on the total score for total competence on the oral presentation (ICC .252) and criterion Adapting (ICC .348). In general, however, the effect size shows that the degree of agreement between these variables is significant but not high.

Next, the interaction between who assesses and when the assessment occurs was analyzed. Table 3 shows that the ANOVA for a design of partially repeated

measurements yields significant interaction effects between assessors for all assessments (initial, intermediate, and final). This result indicates that changes in the assessments at different moments in time depend on the assessor (peer vs. teacher).

Table 3. ANOVA models of assessments, by assessor and time

	ASSESSOR			TIME			INTERACTION		
	F	p	η^2	F	p	η^2	F	p	η^2
Total	150.492	<.001	.43	54.858	<.001	.22	56.187	<.001	.22
Content	63.268	<.001	.24	39.713	<.001	.17	29.270	<.001	.13
Message	1.977	.161	.01	136.696	<.001	.41	32.026	<.001	.14
Adapting	32.123	<.001	.14	59.769	<.001	.23	6.017	.003	.03
Resources	65.727	<.001	.25	34.675	<.001	.15	22.891	<.001	.11

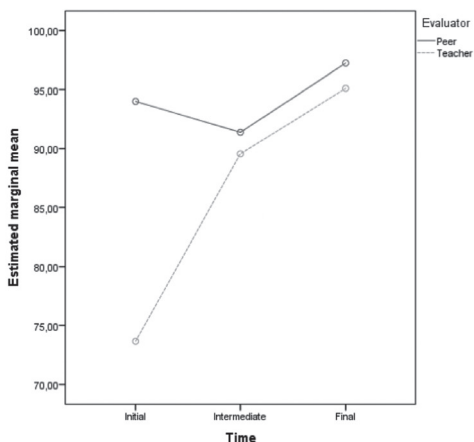
F: Contrast Statistic; p: Critical Level of Significance; η^2 : Effect Size (Partial Eta Squared).

Total: Total Assessment; Content: Competence 1; Message: Competence 2; Adapting: Competence 3; Resources: Competence 4.

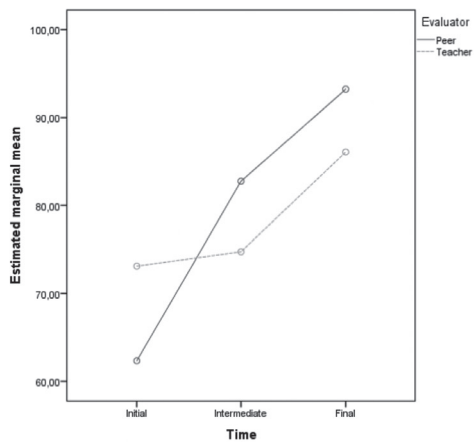
Figure 2 presents the interaction graphs showing the differences between the assessments according to the assessor and the time of assessment for each criterion. There is a certain exigency in the behaviour of the students' scores, peers give low marks in the initial assessment and they perceive an improvement in the final assessment. Teacher initially gives lower marks, progressively assesses with higher marks, after feedback and assessment students improve. The difference between peer and teacher assessment is greater (10 to 25 points) in the initial assessment. The difference converges in the intermediate and final assessments, with the exception of criterion Message, where the score for peer-assessment is lower than that for teacher assessment in the initial assessment and higher than teacher assessment in the intermediate and final assessments. There is a clear differentiation in how peers and teachers assess, approaching each other progressively, although they become similar in the final assessment especially in Content and Adaptation. This may be due to the fact that students try to encourage audience interest and participation when presenting information.

Figure 2. Interaction between assessor and time of assessment for each criterion

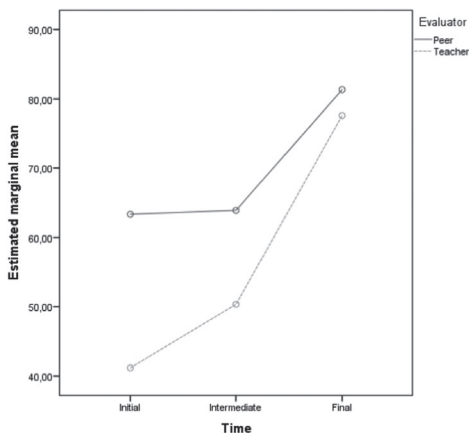
CONTENT



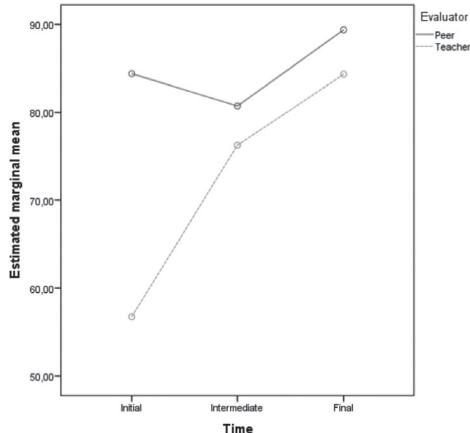
MESSAGE



ADAPTATION



RESOURCES



To achieve the second goal, the compulsory nature of the assessment process was analyzed using the Mann-Whitney U test. This statistic enables comparison of trends in the two groups, students whose participation was compulsory (Strategy A) and students whose participation was optional (Strategy B), depending on the person performing the assessment in each of the three assessments performed (initial, intermediate, and final). For the total score of oral presentation competence

in peer-assessment, the Mann-Whitney U test showed significant differences between optional (Strategy B) and compulsory (Strategy A) participation in the three assessments: initial ($U = -3.878$, $p < .001$), intermediate ($U = -6.311$, $p < .001$), and final ($U = -3.598$, $p < .001$), with Strategy A producing a higher mean on all three occasions.

In the teacher assessments, a significant difference in total oral presentation competence score was observed between optional participation (Strategy B) and compulsory participation (Strategy A) (Mann-Whitney $U = -6.418$, $p < .001$), with a very great distance between the means of the optional ($M = 63.1$) and compulsory ($M = 20.6$) strategies. In the intermediate and final assessments, the optional strategy yielded lower values than in the compulsory, with Mann-Whitney U statistics of -2.749 , ($p < .006$) and $U = -2.264$ ($p < .024$), respectively. In both the intermediate (62.8 vs. 73.2) and the final (73.00 vs. 78.6) assessment, the two groups' means were close.

In the third goal, to show the impact of oral presentation competence on the students' final grades in a learning model, the nonparametric Rho correlations were first established for peer-assessment, as well as the grade earned in the subject (subject rating). No significant relationship was found between final grade in the subject and peer-assessment at any assessment time (initial, intermediate, or final) except the final assessment of criterion Adapting, "to know how to adapt to the audience and establish fluid interaction with the audience or tribunal" ($\rho = .086$, $p < .01$), which is directly associated with the grade in the subject.

In the teacher assessments, the subject rating was related to the total score for oral presentation competence ($\rho = .258$, $p < .01$) in the intermediate assessment. In the final assessment, the subject rating was directly and significantly associated with total assessment of oral presentation competence ($\rho = .342$, $p < .01$) for criteria Message ($\rho = .276$, $p < .01$) and Adapting ($\rho = .393$, $p < .01$).

The study also especially investigated the correlation of both sureness in use of high-quality technological resources and support for the presentation in public to the results for assessment of oral presentation competence. The total score for oral presentation competence was directly associated with the three assessments: initial ($\rho = .720$, $p < .01$), intermediate ($\rho = .746$, $p < .01$), and final ($\rho = .628$, $p < .01$) for criterion Resources in teacher assessment. In peer-assessment, the association occurred in the intermediate ($\rho = .655$, $p < .01$) and final ($\rho = .780$, $p < .01$) assessments. These results indicate the need for more in-depth evidence on criterion Resources based on the participation strategy in the assessment process.

The total oral presentation competence score was directly associated with evidence from the rubric on use of technological resources (4.1. Degree of sureness

in handling resources) ($\rho = .525, p < .01$) in the intermediate assessment performed among peers following the optional strategy. In the compulsory strategy group, this association was significant in the initial ($\rho = .843, p < .01$) and final ($\rho = .488, p < .01$) assessments. For teacher assessment, the total score for oral presentation competence was significantly associated with evidence from the rubric technological resources of technological resources in all three assessments (initial, intermediate, and final) for both strategies.

The total score for oral presentation competence was directly associated with evidence from the rubric on quality of technological resources (4.2. Prepare high-quality technological resources) performed among peers in the optional strategy group in the intermediate ($\rho = .525, p < .01$) and final ($\rho = 1.000, p < .01$) assessments. In the compulsory strategy group, this association was significant in the initial ($\rho = .596, p < .01$) and final ($\rho = .488, p < .01$) assessments. In the case of teacher assessment, it was significantly associated with evidence from the rubric on Resource Quality in all three assessments: initial ($\rho = .681, p < .01$), intermediate ($\rho = .556, p < .01$), and final ($\rho = .726, p < .01$), whereas the compulsory strategy showed significant association in the intermediate assessment only ($\rho = .742, p < .01$).

Finally, we performed multiple regression analysis to determine which variables contributed to predicting the subject rating (dependent variable). The predictor variables included were peer and teacher assessment, based on time at which the assessment was performed. The regression models for the subject rating based on the total score for assessment of (total) competence on oral presentation by peer and teacher show that the only significant predictor in the optional strategy was teacher assessment at the initial time ($\beta = .309, p = .031$). The model was not significant, however ($F = 2.536; p = .090$).

In the compulsory strategy, teacher assessment of the total score for competence on oral presentation in the intermediate ($\beta = .400, p = .013$) and final ($\beta = .621, p = <.001$) assessments was a good predictor of subject rating; both models were significant (Intermediate: $F = 4.265; p = .020$; Final: $F = 13.369; p <.001$) (Table 4) and accounted for 12.4% (Intermediate: $R^2 = .124$) and 35% (Final: $R^2 = .35$) of the variance of subject rating.

Table 4. Coefficients of the regression models (dependent variable subject rating), taking total assessments of peer and teacher assessments as predictors (Compulsory Group)

Initial	B	β	p	95% CI
Total Peer	-.011	-.068	.650	-.057-.036
Total Teacher	-.006	-.166	.270	-.017-.005
Intermediate	B	β	p	95% CI
Total Peer	.001	.006	.967	-.050-.052
Total Teacher	.016	.400	.013	.004-.029
Final	B	β	p	95% CI
Total Peer	-.027	-.134	.271	-.075-.022
Total Teacher	.054	.621	<.001	.033-.075

B: Slope; β : Standardized Slope; p: Critical level of significance; 95% CI: 95% Confidence Interval for B.

DISCUSSION AND CONCLUSIONS

This study has confirmed the value of design, validation, and application of a rubric for oral presentation competence (Jönsson and Panadero, 2017; Menéndez-Varela and Gregori-Giralt, 2016; van Ginkel *et al.*, 2015; van Ginkel *et al.*, 2017). More specifically, the rubric integrates oral and digital competences, as it assesses the capability of using and having good command of technological resources (van Ginkel *et al.*, 2017, p. 486), capabilities included in the assessment criterion “to be able to use high-quality technology resources integrated into the message” (Resources). Two indicators (4.1. and 4.2.) were used because it is the form of technological communication par excellence that supports oral discourse.

Because evidence of students’ involvement, commitment, and motivation is important in the practice of learning, we analyzed the impact of an innovative intervention that stressed continuity, co-participation, and progressive assessment in the acquisition of oral presentation competence (De Grez *et al.*, 2009a). The association of this potential involvement with both optional and compulsory participation in the assessment made it a significant variable in peer-assessment. Although the research on feedback in the peer-assessment of oral presentation began as relatively limited (Topping, 1998), it has since increased (Li *et al.*, 2016; Zheng *et al.*, 2019) but has not been researched by itself. Studies rarely state whether participation in peer-assessment was compulsory or optional, although one could expect this variable to impact acceptability and reliability (Topping, 1998, p. 268).

In our study, the results of the total oral presentation competence (peer and teacher assessment) show significant differences in the assessments based on type of participation (compulsory or optional) in the assessment process. When participation is compulsory (Strategy A), mean scores are higher (Co>Op) in all assessments (initial, intermediate and final). The same trend appears when participation is optional (Strategy B), except only the score obtained for teacher on the initial assessment (Co>Op). Therefore, it seems that the nature of participation, despite being an important methodological element, is not a determining factor in the total scores of the rubric for peer and teacher assessment.

Researching the effect of applying digital rubrics with repeated measurements (often three measurements) supports decoupling assessment with digital rubrics from summative assessment (Houston and Thompson, 2017). We conclude that the progression brings successive applications somewhat close to formative assessment, although these assessments are more closely connected when feedback is provided (Madruga *et al.*, 2020). The initial, intermediate, and final assessments with feedback by peers and teachers are an important step in the progress toward formative assessment. In De Grez *et al.* (2009b) and Menéndez-Varela and Gregori-Giralt (2016), achieving the learning outcomes and obtaining evidence of learning progress demonstrate the validity of the inferences drawn from the assessment system. Peer-assessment seems sufficiently reliable and valid in a wide variety of applications, although the literature considers score reliability rather than more detailed formative assessment.

The 3P model illustrates the influence of active e-assessment of oral presentation competence on the learning outcomes, expressed in the form of final grades in the Educational Technology subjects in this study. We verify that the results for general grade in the subject are related to the score on the oral presentation competence rubric. When we analyze peer-assessment, we confirm no significant relation between the score of the rubric and subject rating, but in the teacher assessment there is. This score in the e-rubric (particularly at the intermediate and final moments) is statistically significant, so contributes to grade in the subject.

Based on the assumption of a solid relationship between oral and digital competence when assessing oral presentation competence, assessment criterion Resources on the digital rubric focuses on quality of resources and mastery of technology for the oral presentation. Our study reveals a correlation not previously studied in the literature consulted: the students who obtain better scores on use and quality of technology resources as support for speech and messages obtain higher scores on oral presentation competence. This correlation is significant at all three evaluation times in teacher assessment. It is lower in peer-assessment and

depends on the time of the assessment. These findings are important for preservice teachers' practice and will be a determining factor in their scores on oral presentation competence, since it is essential that they use high-quality resources to support their oral presentation.

Our findings are similar to the results of other studies on precision of peer-assessment grades compared to teacher assessment grades (De Grez *et al.*, 2012; Li *et al.*, 2016; Magin and Helmore, 2001). With the increasing use of digital platforms –even greater now due to the Covid-19 pandemic– this is an important concern for both educators and researchers. Assessments by students using rubrics differ from the teachers' assessments, but successive applications of progressive assessment produce closer scores as the number of assessments performed with the digital rubric increases. The meta-analysis by Li *et al.* (2016) shows that this correlation is significantly greater when peer-assessment is optional instead of compulsory, among other factors. In our study, the total score for oral presentation competence in initial assessment of ICC shows no agreement on the total score for oral presentation competence and significant agreement in the intermediate and final assessment. It is worth stressing that criterion Resources, which combines evidence from the rubric on quality and use of technological resources, shows significant agreement between peer and teacher assessment starting with the first assessment (initial assessment). In conclusion, this study obtains significant interaction effects between assessors for all assessments, indicating that changes in assessment at different moments in time depend on the assessor.

Finally, we encounter some challenges in assessing oral presentation competence, such as challenges associated with performing this task in an in-person vs. online environment. On the one hand, criteria Message and Adapting merit differentiated analysis as a whole and in each of these environments. On the other, it is necessary to explore formulas to improve participation in assessment in blended learning environments with combinations of virtual and in-person oral presentation. Future studies must further develop assessment of improvement in the quality of the projects as a whole (not only of the oral presentation but of the project), underscoring the need to combine oral and digital competence through feedback, promoting assessment of the projects to improve learning. It is important for stakeholders in higher education to recognize the need to give students a voice in improving competencies that are especially useful for employment (Campbell *et al.*, 2001; Romero-García *et al.*, 2020). The study confirms an effective methodology, with a platform and methodology that allows teachers to evaluate the impact of their digital rubrics as more flexible, more observable and instantaneous, thus facilitating better decision making accordingly than other studies presented.

However, it remains to extend the study in the future compared to control groups where the rubric methodology is not used.

Fecha de recepción del original: 8 de marzo 2022

Fecha de aceptación de la versión definitiva: 25 de mayo 2022

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