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An International Experiment with eRubrics: An Approach to Educational Assessment in Two Courses of the Early Childhood Education Degree.

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Una Experiencia Internacional con eRúbricas: una aproximación a la evaluación formativa en dos cursos en la carrera de Educación Infantil.

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Abstract

The present project aims at assessing the eRubric tool [1, 2] within a teacher education programme in Early Childhood Education. The eRubric is a tool and a method for teacher training and educational assessment. eRubrics can create collaborative learning environments, raise awareness in students about their own learning process and promote active participation in class in order to ensure learning quality. The planned methods were interwoven with the tool and with the control groups that were involved in the institutional platform at the University of Stockholm. In order to provide an international angle, the university is actively cooperating with the University of Malaga through the Gtea [3] group.

Resumen

El proyecto que presentamos consistió en una experimentación y evaluación de la herramienta eRubrica[1,2] dentro del programa de formación de docentes de Educación Infantil. eRubrica es una herramienta pero también un método para formación didáctica y evaluación formativa. Como principios posee la creación de ambientes de aprendizaje colaborativo, facilitar la consciencia en los estudiantes sobre su propio proceso de aprendizaje y la participación activa en los cursos para asegurar su calidad. Los métodos planteados se entrelazaron con la herramienta y los grupos de control inmersos en la plataforma institucional de la universidad de Estocolmo. En una perspectiva internacional se coopera activamente con la

The project started during the academic year 2012 and was divided into three stages: Implementation, development and evaluation. According to the teachers, the obtained results prove that eRubrics offer educational benefits in terms of competences and proof of learning, students' active participation in their tasks and peer feedback; even though teachers still show some reluctance in implementing this tool and methodology. On the other hand, students also undertake a process of reflection and collaborative learning and obtain positive results, while experiencing nonetheless some difficulties and limitations.

Key words: Learning assessment, educational assessment, ICTs, eRubrics, university teaching, collaborative learning

universidad de Málaga a través del grupo Gtea[3].

El proyecto se inicia en el curso año académico 2012 y se planificó en tres fases: Implementación, desarrollo y evaluación. Los resultados muestran ventajas pedagógicas de la herramienta en lo que respecta a la reflexión del profesor sobre las competencias y evidencias de aprendizaje, la participación activa del estudiante en sus tareas y el feedback con sus compañeros; al tiempo que se vislumbran resistencias en el docente a la hora de implementar e innovar con la herramienta y su metodología. Por su parte, los estudiantes también realizan un proceso de reflexión y aprendizaje colaborativo obteniendo resultados positivos, mostrando dificultades y limitaciones.

Palabras clave: Evaluación de los aprendizajes, evaluación formativa, TIC, eRubricas, didáctica universitaria, aprendizaje en colaboración.

The eRubric International Project (Sweden-Spain)

The main aim of the eRubric project is to implement, develop and evaluate the tool in a given context, namely two courses within the Programme in Early Childhood Education at the University of Stockholm (210 university credits). The implementation of eRubrics is not only aimed at solving a technical need (i.e. adding to the technical support that is already being used), but also at developing a different methodology for educational assessment with ePortfolios (Serrano and Cebrián, 2011).

The first stage of the project started at the beginning of the Swedish semester, which lasts from January to June 2012. In partnership with Spain, two courses were selected from the Programme and included in the project in Sweden. The second stage of the project started at the beginning of the second semester, which lasts from September 2012 to January 2013. The experience was then replicated, only this time methods and practical activities were improved. In February 2013, a conference was held for teachers who had carried out projects with ICT tools at the University of Stockholm. The advantages and limitations of the experiment were discussed in the conference and the project was deemed concluded after completing this publication.

The experimentation with eRubrics ultimately aims at evaluating the educational process of two courses, in which contents and length are very different. Thus, a better overview of the possibilities of eRubrics for the entire Programme [4] was achieved, given that

each course uses a different methodology. The first course receives 7.5 ECTS credits, and the content is “Curriculum and Pedagogical Documentation”. The second course receives 15 ECTS credits and is the final project of the Programme, i.e. the Degree Project in Early Childhood Education. The second course is characterised by individual and paired work. Courses are an important part of the overall programme, as they are aimed at a group of kindergarten teachers who are keeping work and study and need to complete the five-year period required by their degree with these courses. Courses are taught in a format that is adapted to the students’ working situation, so they take slightly longer than other programmes. This programme has been planned for 3.5 years according to the official curriculum, which translates into a total of 20 hours per week.

Several courses of the programme involve an educational process but without ICT tools. All courses are meant to work in educational processes, either by writing academic texts or by working in groups. The idea of implementing the eRubric tool was based on two aspects: on the one hand, carrying out activities in which students can give permanent feedback on their learning process; and on the other, improving the quality of coursework by using parallel educational processes and the SAKAI platform (known as “MONDO” at the University of Stockholm [5]). The Turnitin [6] tool is also integrated into this platform in order to avoid plagiarism in papers published by students, along with the link leading to the specific eRubric of each course.

Figure 1 (eRubric for the Degree Project) shows the averages of each proof of learning and competence area, achieved by students in each project, even though averages are taken in the middle of the process, so that some proof of learning may not have yet achieved a positive outcome. In this way, teachers would quickly know how the whole group is doing. From another perspective, teachers were also able to follow their students’ development at the same time. Figure 2 partially shows the individual list of students along with their averages, and an overlapped screen where the first competence of a female student is displayed together with her proof of learning.

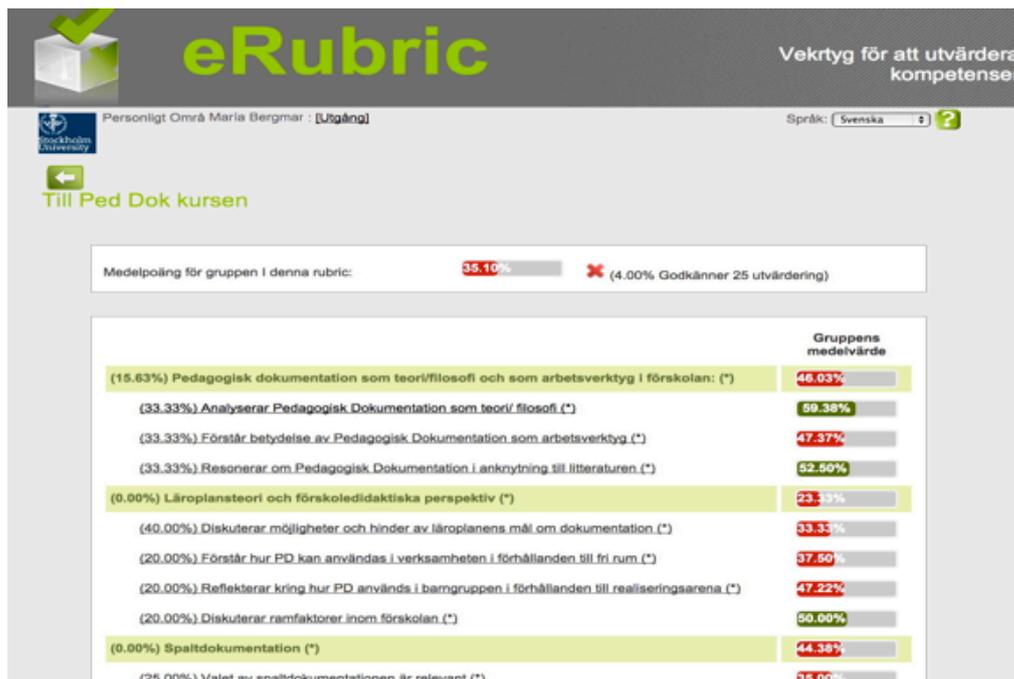


Fig. 1. Project eRubric. Averages for all students’ proof of learning

The top screenshot shows the eRubric interface with the following table of student data:

Namn	Grupp	Min utvärdering	Godkänd min utvärdering	N° Utvärderare	Medelpoäng från utvärderare	Godkänd alla utvärderare
Ulf Olsson		-	-	1	0.00%	✗
theresejansson		-	-	1	50.00%	✓
Sofia		-	-	1	50.00%	✗
Sandra		-	-	1	46.35%	✗

The bottom screenshot shows the detailed view for 'theresejansson' in the 'Till Ped Dok kursen'. It displays a table of competencies and their scores:

Competency	Score	Ölltricklig (25.00%)	God (50.00%)	Utmärkt (100.00%)
(15.63%) Pedagogisk dokumentation som teori/filosofi och som arbetsverktyg i förskolan (*)				
(33.33%) Analyserar Pedagogisk Dokumentation som teori/ filosofi (*)		○	*	○
(33.33%) Förstår betydelse av Pedagogisk Dokumentation som arbetsverktyg (*)		○	*	○
(33.33%) Resonerar om Pedagogisk Dokumentation i anknytning till litteraturen (*)		*	○	○

Fig. 2. Two interconnected windows: the list of students with their averages and the selection of one female student with her achieved competences and proof of learning.

Implementation of the Project

The project received support from the University of Stockholm following the decision taken by the university's dean, Kåre Bremer. The agreement for support was dated 05-05-2011, and acknowledged the need to promote ICTs at the University of Stockholm. In this general institutional framework, the project linked to the Department of Youth And Childhood Studies-BUV [7] was developed. The international perspective (Brown, 2001) encouraged international relations as a means of creating synergies within the project, which consequently received guidance from the Gtea group, support by means of Erasmus scholarships for teachers, and self-financing.

The main objective was to experiment with the eRubric and Turnitin tools, integrating them into the teachers' course methodology, in order to find out their scope and the possibilities they offer for changing how we teach. The objective of the project was to create a technology-rich environment (Cebrián, 2009; Fullan, 2011) that would allow for a deep change in the methodology and learning results through the use of both tools.

We not only introduced the use of eRubrics into the programme methodology and the Sakai platform, but we also partnered up with the eRubric community of practical activities. We shared our experience and contributed thanks to the international

angle of our project's setting.

Two main applications from the Turnitin tool were used: 1. PeerMark is described on the website [8] as follows: "Students do not only learn from instructors but also from each other. PeerMark facilitates peer assessment so that students can evaluate the work of others and learn from their classmates". 2. The other application was GradeMark, which aims at "saving instructors time and providing students with information of the leading publishers and their rated comments". These applications are not contemplated in the University license but can be used on a limited basis.

Activities and Accomplishments of the First Stage

To start with, the eRubric tool was translated into Swedish, and the project objectives were published on the website of the community of practical activities [9]. Secondly, members of the Swedish team travelled to the University of Malaga to design a specific action plan, to become familiarised with the practical implementation of the tool and to attend a training workshop. They also travelled to the University of Oxford to learn about the Turnitin programme and to share the eRubric project and the partnership with Spain with others, as well as their project from the Department of Youth And Childhood studies (BUV).

During the implementation stage, the tool was included in the Course Menu as a link on the MONDO platform, and the variables to be evaluated in the two courses were extracted from the test content. To do so, some course elements were assessed such as: course curriculum, variables to be examined, expectations and goals to be met according to the descriptors.

Project Development

During this stage of the scheme, the project was introduced to students and teachers, presentations were made on the MONDO platform and the link where the tool is located was activated. Students and teachers were informed of the ethical rules of research in Human Sciences and were then informed of the benefits of educational assessment, peer feedback and teaching applications. Students were assured that the use of the tool would not involve extra work.

Due to technical difficulties and language barriers (the first automatic emails were in Spanish), along with the lack of experience with digital tools, only a few students managed to enter the system (even though all the information had been translated). Some students were even upset that they did not quite understand the relationship between competences and proof of learning. To dispel all doubts, some minutes from previous seminars were posted on the platform together with some emails explaining how to access the system. Despite the number of emails between Spain and Sweden, this activity was not fully completed, as it failed to include all students.

The Kindergarten Degree covers courses with 5-week modules (short courses) and 6-7 week-modules (long courses). The wide variety of groups allowed us to work with the tool, regardless of the course content. The basic premise was that the heterogeneity of courses and tasks would not infer in the use of the tool and that the tool would collate reflections on the course content and goals. Neither of the two courses included specific

tasks related to the content in the evaluation criteria. The goal was to use eRubrics as a qualitative and procedural variable, by creating groups that worked on MONDO but not with eRubrics. In other words, the platform created a control group for only one of the courses, as the number of teachers participating was greater in the “Dissertation” course than in the “Teacher Training and Documentation” course.

Another aspect in the assessments to take into consideration was that course seminars did not match task requirements. As a result, work could only be analysed on MONDO, which did not facilitate the analysis of competence assessment and the corresponding proof of learning. The positive aspect of this first test was the noticeable increase in activity and the better understanding of the MONDO platform as compared to previous years.

The tasks associated with eRubrics caused an increase in group activities on the MONDO platform, which was almost impossible to analyse. However, MONDO generated its own statistics and was not able to automatically add the platform activities to the eRubrics. There was no problem accessing the courses; the problem appeared when trying to assess the activities with two different tools. The number of extracurricular activities required in order to participate in innovation projects were limited. Neither teachers nor students seemed to be particularly motivated in this first attempt. Many students did not participate because they work or have children, and did not have time.

The negative aspect of activities in the two courses was the lack of teacher participation and interest, which, in addition to their reluctance to use on the one hand the platform and on the other ICT tools, unconsciously brings about a negative attitude among students. For example, a teaching colleague was so frustrated at wanting but not being able to use the MONDO platform that she refused to encourage feedback among her students and she explicitly said so in an email she sent. “I don’t like the platform”, she stated, “it’s like having a piece of furniture with secret compartments and not being able to open them”. She was referring to the amount of files with documents, spaces such as the forum and everything else that was going on in the platform.

Both students and teachers had an overall positive attitude towards the platform, ICT tools, etc. but the conditions to implement new projects were not very clear from the beginning due to organisational problems. The university was in the middle of enlargement and internal restructuring works, and offered limited access to ICT resources. The work performed with the media was geographically decentralised. One of the questions raised during the implementation stage was whether students could participate in extracurricular seminars on the project. However, many students lived far away, had families and very little time, making it difficult to participate in an innovation project outside of their scheduled time for studies. Therefore, the external circumstances had an impact on the project. The campus is very isolated from student life and students only focus on attending seminars offered by pre-planned courses, making it difficult to conduct research outside the scheduled timetable (Orsmond, P., Merry, S. & Reiling, K., 2000).

Evaluation of the Reflection on the Experiment

In this last part, some reflections will be presented along with some of the debates generated in our department by this experiment. This paper will draw some of the most important conclusions on different aspects, some of which are open-ended and others, which are still under discussion or in the process of improvement.

a) *Assessing the tool from a technical point of view & support for learning assessment.*

With regards to the tool assessment, course tasks were evaluated by both workgroups and individual students (SA-grupp). For instance, one of the tasks was to give feedback to small sequences filmed by a group of six students. But only some students managed to do so in the first year. In the second year, the MONDO platform reported activity with over a thousand active threads (trådar), including the FORUM, where the synopsis of the research project presented by students at the beginning of the year was evaluated.

The course included six tasks that had to be performed in order to then be assessed. Each task was synchronized with the research process and the report was presented at the end of the year. Not all groups took this task seriously because it was not defined as a compulsory exercise by the course descriptor.

Digital participation was evaluated by the e-Val Standalone 4.0.1 system at the end of the year. Given that the percentage of students assessing the course was less than 50%, final results could not be proportionally compared to this evaluation system. Only some of the groups, who were not using the tool, took part in the feedback to other groups.

It was difficult to obtain quantitative data because, due to reasons not related to the tool, participants did not assess on a regular basis, as planned. The eRubric educational goal of assessing on a regular basis should usually be met by both teachers and students. In this way, eRubric evaluation can enable a permanent and continuous process of educational assessment, which is otherwise difficult to implement.

There is a noticeable lack of practical experience in this area when it comes to carrying out innovation projects, which adds to the unexpected consequences of implementing any project of this nature. A case in point was when first-year students told their teacher that they felt “stressed having to use the (tool) log-in system”, as they did not understand some automatic sentences that had not been translated into Swedish. Despite the fact that this unforeseen circumstance was immediately solved, it made students conclude that this was taking too much time from their coursework. Half way through the year (Seminar no.3), only 18 students out of 30 had managed to enrol in the course.

While it is true that any innovation project encounters small obstacles at the beginning, students who took part in this project were not particularly committed to it. They mentioned these problems to justify their lack of interest. They continued to maintain the same attitude despite having solved the problems in accessing the platform. The problem has recently been solved by allowing access via the federated EduGain [10] Identification System, allowing all teachers and students at the University of Stockholm to enter by using their university code.

During the final Degree Project, only a small group of 10 students working in

pairs were involved. Their assessment partially agreed with their teacher's evaluation (see figures 1 and 2). Students tend to give themselves lower grades than their actual final grades. This is also the case in other studies and experiments (Brown & Glaser, 2003). The percentages could not be interpreted on a continuous basis, because assessments did not match after being carried out in pairs rather than individually. The problem was that no groups were formed, even though the tool allows for this.

All these aspects and factors underscore the problems this research project is currently going through in terms of innovation and implementation. Both in Sweden and in other European countries, ethical values are predominant in social research (Glaser and Brown, 2003). Students agreed to participate but found it difficult to understand the educational benefits of the tool. In addition, they faced further contextual aspects, such as limited availability of ICT resources, restricted use of ICT tools in other courses and the fact that students were not used to participating in activities outside their course schedule. There were only six seminars for which students were expected to undertake documentation, write a narrative text and do an oral presentation. There were no problems with access in the final Degree Project group and in the course; although the group was small and they had to work in pairs in order to complete five assignments. The MONDO evaluation was only applied in some groups. The feedback generated action at the beginning of the year, but it then decreased at the end of the year. Only one task was proposed, as it was mandatory for the preparation of an assignment. This practical activity was performed in a group. Indeed, it was very successful, given that all students passed the course afterwards. Most students reacted positively to this task that preceded the final degree exam, where they would have to defend their project before a jury composed of a group of students and the teacher who evaluated it. The fact of having clear goals and evaluation criteria facilitated the eRubric assessment.

b) *Assessing changes and opportunities for improving teaching.*

The tool somehow forced teachers to rethink what they were doing in terms of evaluation. In other words, it prompted them to reflect on their pedagogical skills. In a Swedish educational context, more specifically in those institutions of child teaching, the expression "proof of learning" implies "checking if something has been learnt". There has been a long debate on the Bologna process and on how to integrate grading scales (seven A-F variables and two Fx variables of basic and advanced-level [11]). Teachers constantly discussed different ways of examining coursework and carry out educational assessment. In the Spanish context, these changes are very recent; they date from January 2007, which is when the Bologna-adapted structures were integrated. Therefore, the eRubric project and design have allowed for deep reflection and for action to be taken. The eRubric procedure was finally included in the protocol for general evaluation matters. This means that once competences are formulated together with their corresponding proof of learning, the form is sent to the teacher who is responsible for the course, and after making a few changes in some test variables, each competence and associated criteria is then ready to be published in the rubric.

c) *The implicit concepts of eRubric design.*

One significant didactic issue arose while translating the tool into Swedish. The terms “competence” and “proof of learning” are not usual in the Swedish university teaching context, let alone in education. The term “proof” is most commonly used in degrees with a positivist approach, such as Nursing or Medicine, but not in Humanities. Another cultural aspect highlighted by the project was the nature of Swedish tests. Most course tests and examinations are performed at home as “homework”, and they usually involve narrative exams of a qualitative type with no quantitative criteria. However, over the last few years, individual exams/tests with A-F criteria (where A is excellent and F is fail) are being demanded.

The Swedish language uses the term “capable of” rather than “competent in”. This might have contributed to the difficulty expressed by teachers in understanding the differences between competences and their associated proof of learning, particularly while trying to distinguish them from the homework required from students in order to meet the learning goals of any given course. According to different literary sources on competence, there is a clear difference between “having capacity” and “being competent”. The latter requires the former, but one can have capacities yet not necessarily be competent. This is why some authors claim that competences cannot be evaluated at university, whereas students’ capabilities can be evaluated (Tejada, 2012).

What strategies will we implement in the future and what have we learned?

In the future we intend to expand the use of this tool as a mandatory requirement of the academic year. However, this is not possible at present. Therefore we plan to implement the tool in the part of the semester that involves academic writing in the medium term (Project in Early Childhood Education). The strategy to be implemented will be as follows:

- Working with the manual.
- Creating a login for teachers.
- Meeting students who volunteered to participate a few hours before the official seminar.
- Lessons/seminars: to highlight the educational effects of the tool.
- MONDO Forum (Sakai): to organise groups according to tasks and competences.
- Internal groups: to arrange feedback and register the course’s teaching plan as mandatory.
- Learning process and follow-up: comparing groups and results.
- Performing activities in MONDO: to illustrate the analysis of results with some examples.

As teachers, the experiment has taught several lessons, which we now present as a conclusion:

- a) Students carried out peer assessment in their projects. This method proved to have reached higher levels than when students were asked to merely reflect about the tasks. In other words, as Brown & Glaser (2003) put it, not every reflection involves evaluation. On the contrary, every evaluation required a reflection from students, as they had to apply criteria and value judgments. This has led to a new approach to teachers' demands from tasks in the future.
- b) In the eRubric evaluation and research literature on the learning process, there is often a certain "obsession" to compare student assessment to peer assessment, and the latter to teacher assessment. Nevertheless, we believe that the greatest value that peer assessment can possibly offer lies in learning and interpreting criteria and proof of learning. This is the real advantage for our team in Sweden: to be able to analyse experience with peer assessment, as observed in other studies (Falchikov and Goldfinch, 2000; López, 2009; Luxton-Reilly, 2009).
- c) The innovation and methodological change implemented have proven to be related to other unforeseen elements, such as both the teachers' and the students' attitudes in facing the challenge of having to change. The technical problems - that are common at the start of any innovation project, let alone in a technical project like this - can somehow be used as grounds to justify other reasons of a different nature (e.g. lack of competence, lack of leadership, etc.). As Donal observed (2012, quoting Poley and Olcot, pp. 345), universities will face a real challenge in the future: combining interrelations among factors such as technical aspects, leadership, passion and ethics.

[1] The project in Sweden was led by Dr. María Elena Bergman, Professor in the Department of Children Education (BUV) and Dr. Ulf Olsson, from the Department of Pedagogy (UPC). The international coordination, guidance and search for contacts in Spain was carried out by Dr. Manuel Cebrián de la Serna.

[2] <http://gteavirtual.org/rubric>

[3] <http://gtea.uma.es>

[4] Degree Curriculum: Teacher of Preschool Education http://www.buv.su.se/polopoly_fs/1.90016.1338454746!/menu/standard/file/Förskollärarprogrammet_Studiegång_m_kursbeskrivning_A5_blå_3_H11.pdf

[5] MONDO 2.8 is currently being used <https://mondo.su.se/portal>

[6] <http://turnitin.com/>

[7] <http://www.buv.su.se>

[8] <https://turnitin.com/static/products/peermark.php>

[9] http://erubrica.uma.es/?page_id=239%C2%A0

[10] EduGain. Federated Identity System, which can be accessed at an international level. <http://www.geant.net/service/eduGAIN/Pages/home.aspx>

[11] Evaluation criteria: A = Excellent. B = Good. C = Satisfactory. D = Fair. E = Poor. Fx = Temporary Fail, to be corrected within a week. F = Permanent Fail.

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