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ARTICLE



Validating the Narrative Reflection Assessment Rubric (NARRA) for reflective narratives in higher education

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ABSTRACT

This article focuses on the validity of the new Narrative Reflection Assessment Rubric (NARRA) used to assess students' reflective narratives in higher education. We evaluate its formulation and usefulness from an instructional point of view. To those ends, we engage in both a quantitative and a qualitative analysis, using data from 100+ preservice teachers before and after they attend a Reflective Practice Seminar. We find that there are statistically significant differences in student scores between the pre-seminar test and the post-seminar test, suggesting both that students learned to reflect in the framework of the seminar and that the rubric is a valid and reliable instrument to measure this learning. We also establish five categories about the usefulness of the rubric: description, intrapersonal inquiry, interpersonal inquiry, argumentation and improvement. We conclude that the NARRA is a useful tool for identifying students' current level of reflection in higher education.

KEYWORDS

higher education;
narratives; reflective;
learning; rubric

Introduction

One of the main purposes of higher education is to provide university students with the knowledge and skills they need in the twenty-first century. Such an objective requires new approaches and qualified, talented and committed research and teaching staff to instill in students critical and independent thinking (Wechsler et al. 2018), along with the capacity to learn throughout life (Schuller and Watson 2009). In this article, we focus on reflective learning, given its important role in the development of critical thinking and learning transformation (Baker 1996; Choy and Oo 2012); more specifically, we concentrate on the use of rubrics to assess the reflective narratives of university students (Jonsson and Svingby 2007; Kember et al. 2008; Moniz et al. 2015).

The terms reflective learning, critical thinking and critical reflection have each been used to define a way of thinking that accepts uncertainty and acknowledges dilemmas (Larrivee 2000). Reflection continually emerges as a suggested way of helping students to better understand what they know and how they are progressing as they develop their knowledge through reconsidering what they learn in practice (Loughran 2002). Reflection, then, emphasises learning through questioning and investigation to lead to a development of understanding (Smyth 1992).

Drawing on Kolb and Fry (1975), Alsina and Esteve (2010) contended that reflective learning can be described as a cyclical process of concrete experiences, reflective observations, abstract conceptualisations and active experimentations. They described the ideal process of reflective

learning as an alternation between ‘action’ and ‘reflection’. Korthagen (2001) distinguished five phases in this ideal process: (a) **A**ction, (b) **L**ooking back on action, (c) **A**wareness of essential aspects, (d) **C**reating alternative methods of actions and (e) **T**rial. The five phases constitute the ALACT model of reflection. Within the ALACT framework, preservice teachers should acquire knowledge from self-inquiry, building on the questions and output experiences that emerge from practice. Preservice teachers should also articulate thoughts and link knowledge to action through reflective writings (Olson 1994). For this reason, this study is based on the reflective narratives of preservice teachers and, more specifically, on the use of a particular rubric to train (or teach) students and to evaluate their reflective narratives.

Specific evaluation rubrics have been designed (and usually aligned with models, tools and strategies) to help in the formative assessment of students’ works in progress. Initially, rubrics were designed from the sole perspective of evaluation; but gradually it has come to be suggested that they may also have an important instructional function, since they describe students’ expectations (Goodrich 2000). Rubrics can promote learning and achievement in higher education, as has been pointed out by Reddy and Andrade (2010) and by Fullana et al. (2016). Scored rubrics, when used to assess performance, can facilitate the evaluation of complex competencies (Jonsson and Svingby 2007). In similar fashion, Panadero, Alonso-Tapia, and Huertas (2014) analysed the effects of using rubrics and self-assessment guides on self-regulation, learning, self-efficacy and goal activation, and found that the use of rubrics increased learning but decreased self-regulated learning.

On the other hand, some authors have indicated that the use of rubrics may not improve the reliability or validity of assessment if scorers are not well trained in how to design and employ them effectively. Rezaei and Lovorn (2010) showed that scorers were significantly influenced by the general mechanics of students’ writing, rather than by the content—even when they used a rubric.

In the training of teachers, Griffin (2003) provided personal support, using writing frameworks to help preservice teachers distinguish description from judgment, and to provide critical peer feedback to encourage future teachers to seek multiple perspectives. Ward and McCotter (2004) developed a rubric that highlights the dimensions and qualities of reflection—focus, inquiry and change—and concluded that meaningful reflection and emphasis on learning are not incompatible, so long as the focus is on the learning process, rather than on outcomes alone. Harrison and Lee (2011) used a reflection framework to identify changes in levels of reflective practice in an initial teacher education program. The interpersonal skills of the supervising teacher in terms of recognising the ‘individual’ appeared to be the key to unlocking and increasing the critical reflective levels.

The Narrative Reflection Assessment Rubric (NARRA) was designed and validated from the dual perspective of student evaluation and learning how to write reflective narratives (Alsina et al. 2017). In this previous study, the rubric’s validity (in terms of experts’ judgement) and its reliability were analysed. It includes four elements of analysis: (1) experience, situation or academic or professional activity; (2) prior conceptions and beliefs; (3) inquiring and/or focusing and (4) transformation. Each element includes two to three indicators classified in four levels—from the most elementary level of reflection that applies to a basic description of the focus of reflection and a weak identification of some feelings and attitudes when performing the reflection, to the highest level, which involves critical thinking along with the reconstruction or transformation of prior implicit knowledge. For the full form of the NARRA rubric and its details, we refer the interested reader to page 152 of our previous work (Alsina et al. 2017).

The purpose of this research is to analyse the validity of the NARRA rubric in assessing the level of reflective narrative while promoting the learning of university students. Specifically, we set three objectives: first, to analyse the rubric’s formulation, that is to say, the language used; second, to study the validity of the rubric from an instructional point of view, while performing a quantitative analysis with a semi-experimental design (two tests: one before the Reflective

Practice Seminar and one after); and, third, to complement the quantitative analysis with a qualitative study based on a short questionnaire that included a question for each element of the rubric and a series of open questions after the seminar.

Context, development of the Reflective Practice Seminar and analysis

Context and participants

During academic year 2016/2017, three separate classroom groups in the third year of their Bachelor's Degree in Teacher Training at the University of Girona (Spain) were asked to complete the NARRA rubric. The students completed the rubric at two separate moments in time: at the start (pre) and at the end (post) of their participation in the Reflective Practice Seminar. We derive our results from a total of 318 completed rubrics:192 at the start and 126 at the end of the seminar. The participation of the students was voluntary. Each student gave his or her consent by attending, and most of the students remained in the class. Students could also choose whether or not to include their names on the rubric.

Development of the Reflective Practice Seminar

Previous literature allowed a set of insights to be built into the development of critical reflection in higher education and its evaluation using rubrics (Alsina et al. 2017). The acquisition of capacities by university students is guided, so that they can: (a) identify a focus of reflection in relation to an experience, (b) carry out a process of interpersonal and intrapersonal inquiry, based on querying the experience, (c) transform the way they act and identify change, while explaining and arguing it through (Ward and McCotter 2004; Black and Plowright 2010; Harrison and Lee 2011, among others). The Reflective Practice Seminar of the Bachelor of Education (Teacher Training) at the University of Girona (Spain) was designed to enable the acquisition of capacities (a)–(c), which are aligned with elements of the NARRA rubric (see Table 1). Therefore, in the following subsections, we link the content of the Reflective Practice Seminar to the elements of the rubric.

Table 1. The link between the Reflective Practice Seminar and the elements of the NARRA rubric (Alsina et al. 2017).

Reflective Practice Seminar	NARRA's elements and indicators
Phase 1: The focus of reflection (Sessions 1, 2, and 3)	<p>Element 1: Situation, activity or experience that triggers reflection. Selection and analysis of a situation over which the reflective process will be carried out.</p> <p>1.1. Identifies and describes the focus of reflection in a contextualised manner.</p> <p>1.2. Makes judgements about the focus of reflection.</p> <p>Element 2: Prior conceptions and beliefs: awareness of own previous beliefs, knowledge, and experiences.</p> <p>2.1. Specifies, analyses, and elaborates on beliefs or ideas about him/herself.</p> <p>2.2. Specifies, analyses, and elaborates on prior beliefs or ideas about the context.</p> <p>2.3. Specifies, analyses, and elaborates on beliefs or ideas about the discipline/profession.</p>
Phase 2: Inquiring (Sessions 4, 5, and 6)	<p>Element 3: Inquiring and/or focusing: investigating possible actions of students through focusing on questions and hypotheses.</p> <p>3.1. Focuses on questions and hypotheses and makes inquiries about the focus of reflection.</p> <p>3.2. Focuses on questions and hypotheses and makes inquiries about the context.</p> <p>3.3. Focuses on questions and hypotheses about the professional action.</p>
Phase 3: The transformation (Sessions 7 and 8)	<p>Element 4: Transformation: set concrete learning objectives and future action plans and approaches to initiate a new reflective cycle. Paradigm shift. Argumentation of these changes or the need for them.</p> <p>4.1. Specifies, argues, and transfers new learning goals.</p> <p>4.2. Implements new action plans and supports them with arguments.</p>

Source: Authors' elaboration.

The seminar was divided into eight sessions (corresponding to three phases) with a total duration of 12 h; the weekly sessions lasted for 90 min, commencing at the end of September 2016 and ending in mid-November 2016.

First phase: the focus of reflection

The first step in training students to develop critical reflection necessarily involves students' ability to identify previous personal experiences, situations, academic experiences or relevant professional practices that could be a source of learning (Korthagen 2001). Black and Plowright (2010) emphasised that students should become aware of experiences, alongside the beliefs and conceptions they build up throughout their time as learners. According to Beijaard, Meijer, and Verloop (2004) and Beauchamp and Thomas (2009), students' inability to recognise their beliefs and prior conceptions properly could exert a negative influence on the construction of a professional identity of their own, and so any quality training at a university demands continuous work on conceptions.

For this reason, one of the main purposes of the initial phase of the training was to get students to learn from their own experience and their own practice (Loughran 2002), as well as to make them aware of the process itself. In order to achieve this, the Reflective Practice Seminar focused on the quality of observation, based on reflective learning (purposes, types of observation, appropriate tools and techniques; on the relationship between being an observer and being observed, etc.), and on the use of a portfolio for professional development (Mansvelder-Longayroux, Beijaard, and Verloop 2007). This training was aligned with the ideas dealt with by the first two elements of the NARRA rubric, which refer to the situation, activity or academic or professional experience that activates reflection (Table 1). To that end, the seminar started with analysis of reflective narratives, since those are essential tools in converting practice into significant knowledge (Olson 1994).

Session 1 presented the theoretical framework of the ALACT model (Korthagen 2001) and introduced reflective practices to build on the teaching. It also focused on the presentation of a set of reflective portfolios, including analysis of their structure, evidence of achievement, personal statements, learning goals and critical incidents (Mansvelder-Longayroux, Beijaard, and Verloop 2007). During sessions 2 and 3, preservice teachers were asked to work in small groups. Each group was provided with two or three reflective narratives (obtained from earlier students who had consented to having their reflective work used for academic purposes). Within the group, students debated and analysed the narratives, later sharing their ideas with the rest of the classroom. Specifically, groups were asked to pay close attention to what was the focus of reflection, and to class observations, the objectives of the observation, the types of observations, observation tools (field notes, journals, category systems, observation sheets), and the relationship between the observer and the situation itself.

Second phase: inquiry

Inquiry is embedded in the second formative phase in which the student needs to focus on questions and hypotheses (Alsina et al. 2017). This phase was aligned with the third element of the NARRA rubric, which encompasses three indicators for questions and hypotheses that cover the focus of reflection, the context and the professionalising action, respectively (Table 1). Other authors, including Ward and McCotter (2004) and Black and Plowright (2010), also consider inquiry to be an essential element of critical reflection and professional development.

Oner and Adadan (2011) believe that preservice teachers can establish the relevant connections between theory and practice as they learn to reflect on their actions. First, there is practice in the classroom, both as a simulation process in the class itself and as a participant observation exercise in the professional environment; and second, there is analysis of case studies involving,

for example, the reading of personal experiences linked to professional development (Alsina et al. 2016). In order to promote the process of interpersonal and intrapersonal inquiry about possible actions, in the second phase of the Reflective Practice Seminar, the field diary was presented as an instrument by which a student can reflect on experiences, feelings, thoughts, interventions and personal opinions (Palaudàries and Serra 2010).

Based on these considerations, session 4 was divided into two parts. The first was mostly theoretical and was based on an analysis of findings and the results of different authors when applying reflective processes. Based on a reading of the narratives provided in sessions 2 and 3, the second part focused on establishing a list of questions and hypotheses about the teaching portfolio. They were derived from analysis of preservice teachers' narratives, while confronting possible actions linked to professional development.

During sessions 5 and 6, the field diary was presented as an instrument enabling the student to reflect on experiences, feelings, ideas, interventions and personal opinions, in order to remember, improve, learn and construct a solid teaching style of their own. In relation to the field diary, it is important to point out that narratives were provided by the seminar instructor. Students were asked to analyse individually a personal diary written by somebody else during a period of practice in a school, with the objective of identifying the elements of the diary, its language, style, etc. Finally, the resulting individual conclusions were shared with the rest of the classroom.

Third phase: the transformation

In reflective learning, transformation refers to the rebuilding of the set of beliefs to empower new goals and new actions that allow implicit knowledge to be replaced with critical and professional knowledge, through self-regulated processes (Larrivee 2000). Korthagen (2001) established three stages that promote this transformation: a first Gestalt level of intuitive and unconscious nature, based on one's own experiences; a second level, where there is a progressive decoding of the Gestalt to progress gradually towards conceptualisation; and a third level of theory, by which practical-theoretical knowledge is constructed and reconstructed. The Gestalt is the merging of needs, values, opinions, feelings and reactive tendencies that occur unconsciously when responding spontaneously to classroom situations.

In the last phase of the Reflective Practice Seminar formation (and aligned with the fourth element of the NARRA rubric), several instruments of reflective analysis were presented from the instructional vision formulated by Goodrich (2000). Specifically, during this phase of the seminar, the students received detailed information on the categories that describe the focus of reflection in the reflective diary (Palaudàries and Serra 2010).

Another essential aspect of this phase is to promote students' reflections about the real possibilities of transforming their belief system (implicit knowledge), as well as about the obstacles that prevent this change. At this stage, the study of Friedkin et al. (2016) was explained in detail. These authors conclude that people's belief systems may reveal themselves in different ways when those individuals are subjected to different interpersonal influences.

In the NARRA rubric (Alsina et al. 2017), following preliminary rubric models such as that of Ward and McCotter (2004), the transformation element (Table 1) was considered—that is, the formulation of concrete learning objectives and future action plans to begin a new reflective cycle. The indicators of the rubric are also aligned with the idea of students becoming active in the process of argumentation of the proposed changes. Specifically, the indicators refer to the actions of explaining, arguing and transferring new learning objectives, and also to setting new action plans and implementing them.

From this point of view, in sessions 7 and 8, a real case study was provided, along with some theoretical evidence to establish a significant link between theory and practice. This was analysed using various instruments: (1) scale of levels of reflection in the reflective journal (Palaudàries and Serra 2010); (2) categories that describe the focus of reflection in the reflective

journal (Palaudàries and Serra 2010); (3) elements of analysis of didactic interaction (Rickenmann 2006); and (4) micro analysis of classroom activity. From a real situation outlined by a student (e.g. the experience of a preservice teacher during her practical period in a school), the class was guided to a critical-reflective debate to promote discussion on how to transform practice. Emphasis was also placed on the use of transforming narratives, i.e. the Reflective Practice Seminar focused not only on the account of a descriptive, analytical and critical situation, but also on the suggestion of proposals to initiate a transformation process.

Assessment

Assessment of the rubric is based on a mixed design, considering both a quantitative and a qualitative analysis. For the former, assessment is based on the scores provided by students at the beginning of the seminar and then at the end; the qualitative study is based on a question (yes/no) as to the usefulness of each rubric's element, and a short questionnaire with seven open questions at the post-seminar stage (see below and Table 2 for more detail).

Validation of the NARRA elements and indicators

First, the quantitative analysis was based on all the scores provided by students for all the rubric's elements at the beginning and at the end of the Reflective Practice Seminar. That is, we counted on a total of 20 scores per student—10 at the pre-seminar stage for each indicator of the rubric and 10 at the post-seminar stage. The scores were first entered in a spreadsheet and later exported to the software package Stata[®] for analysis.

Second, a qualitative study was carried out using a questionnaire that was incorporated into the same rubric. In particular, a question was added in each section of the original NARRA rubric (Alsina et al. 2017): 'Are these elements/indicators useful to you to position your actual level of reflection?' Students could answer 'yes' or 'no' and they were asked for a brief explanation if their answer was in the negative. Finally, at the end of each element, once the students had finished marking their self-perceived reflective level in the rubric, they answered seven questions also linked to the different indicators of the four elements of the rubric: reflection focus, belief system, inquiry and transformation (see Table 2). These questions were to be answered on the basis of their own opinion about the use of the rubric, from both the evaluation (knowing their level of reflective narrative) and the instructional (knowing the optimal level of reflective narrative) points of view. The topics that were used to collect these opinions were selected from the review of previous literature on reflective narrative (Moniz et al. 2015; Körkkö, Kyrö-Ämmälä, and Turunen 2016).

Table 2. Short questionnaire on the rubric use (qualitative analysis).

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1. How does the rubric's element 1 help you to identify your own previous personal experience of your academic or professional practice?
 2. How does the rubric's element 1 help you to identify situations, academic experiences or professional practice that could be a source of learning?
 3. How does the rubric's element 2 help you to become aware of your own beliefs or ideas about what you know of your discipline or profession?
 4. How does the rubric's element 2 help you in explaining, analysing, and discussing beliefs or ideas about what you know about the discipline or profession?
 5. How does the rubric's element 3 make you aware of the need to build a hypothesis about what you need to know and about what to do?
 6. How does the rubric's element 3 empower you to ask questions of yourself in order to improve your knowledge and capacities?
 7. How does the rubric's element 4 makes you realise that there is a need to engage in alternative actions to improve your knowledge?
-

Data analysis

The quantitative analysis began with the simplest descriptive statistics and moved on to linear regression models, in which the dependent variables were the students' scores for each rubric's indicator (see Table 1) and the explanatory variables dummies that took the value 0 if the rubric was completed before the seminar and 1 if it was completed after. Note that the number of missing scores within each element of the rubric is very low, with at most only 25 missing points out of 318 observations. The positive or negative sign of the coefficient for this variable indicated whether there was a statistically meaningful difference between a student's scores before and after taking the seminar. Importantly, from the results, we cannot infer causality in the sense of being able to claim that the seminar created the change in the scores. The results merely point to a positive or negative association between a change in the average scores before and after participation in the seminar.

The analysis of answers relative to the qualitative study was based on constant comparisons according to grounded theory (Strauss and Corbin 1994). The following levels of analysis were considered. First, one of the authors of this manuscript began by reading the students' responses, together with the Reflective Practice Seminar teachers, to become familiar with their content—and, based on our objective, to organise and structure the information. At this first level, individual transcripts were arranged on the basis of unit fragmentation or segmentation.

Second, from 475 units of information, group categories were established. In this sense, the codification and categorisation of data were triangulated by comparing, ordering and structuring to establish categories that allowed data to be compared.

Third, the categories were renamed by the authors of the research team, using the method of constant comparisons (Strauss and Corbin 1994), which includes comparisons made between similarities, differences and connections of the data. The units of information were scrutinised to see whether they fell clearly into one category or another, or whether they could be simplified and then grouped together. We also took into consideration that the names and content of the units changed, showing new relationships and possible new interpretations between categories. Thus, any aspects of the rubric that prevented the students from identifying both their own level and the optimal level of narrative reflection based on the two functions of the NARRA were renamed, deleted or simplified.

Results

Validation of the rubric: language

One of the aspects that we wanted to consider for validation was the formulation of the elements of the NARRA itself: that is, the language used to define the elements, the indicators and the levels of the rubric. Although this question had already been validated by experts in a preliminary study (Alsina et al. 2017), we considered it necessary to raise it again during this second level of validation involving the actual application of the rubric to a group of preservice teachers.

Almost all preservice teachers who responded to the rubric considered it to be a useful tool in identifying their current level of reflection. Initially, of the 475 units of information, only 21 related to the language used in the definition of the NARRA rubric. Of these, four units of information made it clear that either some of the elements or some of the indicators were not useful to the preservice teachers, who went on to provide some comments regarding the formulation, such as: 'I believe that in general, rubrics are difficult to understand, the rubric is complex and confusing' (without providing further arguments); 'some of the indicators are not clear to me' (without specifying which) and 'I do not understand questions 4 and 5 of the questionnaire'. One student stated that he/she had answered 'yes' to the question as to whether the rubric had been useful simply because, by answering 'no', he/she would not know how to argue its lack of utility.

Validation of the rubric: instructive usefulness (quantitative study)

Figure 1 shows bars with the average score for the ten indicators of the rubric, considering all the students in the sample and distinguishing between pre (in darker shading) and post (in light gray). Students' answers concerning the great majority of the rubric's indicators hover around a score of 3, which indicates a medium-to-high level of reflection (the minimum score in the rubric was set at 1 and the maximum at 4). On average, students always evaluate their level of reflection, in all the elements of the rubric, higher after they have participated in the seminar. Although in a few cases the difference is only 0.1 points, for the large majority of indicators the difference ranged from 0.3 to 0.5 points, which is a big difference if we consider that 4 is the highest possible score. The graph also includes capped spikes, showing the confidence intervals. The confidence intervals do not overlap when we compare the average score between pre and post, indicating that the two statistics are significantly different from one another at a 95% confidence level. Thus, these preliminary results point to an improvement in the students' level of reflection after the seminar.

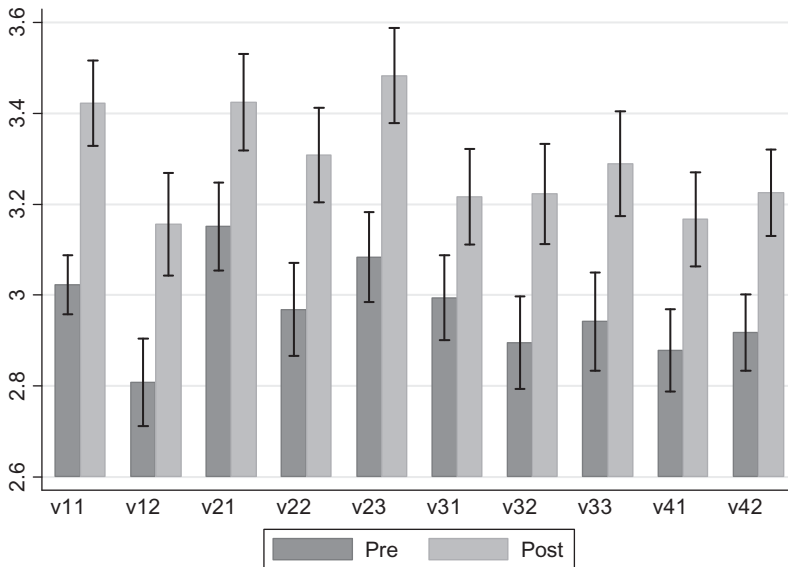


Figure 1. Average score on the 10 indicators of the rubric, including confidence intervals, pre vs. post. Source: Authors' elaboration. $N = 318$ observations.

Table 3. Linear regression results for the post coefficient on each indicator of the rubric.

	Coeff. 'Post'	Std. error	t	P-value	R^2	N
V11	0.4001 ^a	.0565	7.08	0.000	0.1461	300
V12	0.3478 ^a	.0768	4.53	0.000	0.0671	299
V21	0.2739 ^a	.0711	3.85	0.000	0.0409	312
V22	0.3397 ^a	.0699	4.86	0.000	0.0583	311
V23	0.3995 ^a	.0701	5.70	0.000	0.0826	311
V31	0.2224 ^a	.0718	3.09	0.002	0.0317	294
V32	0.3277 ^a	.0763	4.29	0.000	0.0584	293
V33	0.3473 ^a	.0790	4.39	0.000	0.0592	293
V41	0.2882 ^a	.0671	4.29	0.000	0.0526	301
V42	0.3074 ^a	.0645	4.76	0.000	0.0687	302

Source: Authors' elaboration.

^aSignificant at 99% confidence level,

^bat 95%

^cat 90%.

Note: Each row is a separate regression.

Moreover, a simple observation of the distribution of the answers to the question of how useful the rubric is in gauging the level of reflection shows that the vast majority of students said the rubric helps them. As a matter of fact, the answer is 'yes' among 90% of the students and for the four elements analysed.

Table 3 shows the outcome of the linear regressions. Note that each row is a separate regression, and robust standard errors have been used throughout. The results leave no room for doubt: in all the indicators, students provide higher scores for each of the elements of the rubric after their participation in the Reflective Practice Seminar. The differences are statistically significant at the 99% confidence level for all the indicators. That is, participation in the seminar is associated with an increase in the score given to each of the rubric's indicators, according to the students' answers, at 95% and 90%.

Validation of the rubric: instructive usefulness (qualitative study)

Based on analysis of the units of information provided by the preservice teachers to reflective questions in Table 2, and using constant comparisons according to grounded theory, five categories were established (see details in Table 4):

1. *Description*: Preservice teachers clearly identify the focus of reflection on experience (often professional practices) and describe it, without getting involved.
2. *Intrapersonal inquiry*: Preservice teachers conduct a process of intrapersonal inquiry, based on posing questions about an experience.
3. *Interpersonal inquiry*: Preservice teachers conduct a process of interpersonal inquiry, based on posing questions and hypotheses about an experience.
4. *Argumentation*: Preservice teachers explain, justify and/or discuss the answers to their own questions and hypotheses.
5. *Improvement*: Preservice teachers transform their professional knowledge and their own actions in the sense of improving it: that is to say, they develop professionally.

When preservice teachers were asked if they considered the NARRA rubric to be a useful tool for identifying their current level of reflection, most responded 'yes'. More specifically, most preservice teachers considered the rubric to be useful for describing previous professional experience of academic or professional practices, and emphasised that it could be done both before and after the in-school practical experience (*practicum*). As a particularly positive aspect of the description, they indicated that the rubric helped them to focus on the most important points of practice. In addition, the NARRA instrument helped them to appreciate the importance of asking questions and posing hypotheses about their professional profile. The rubric was also useful in carrying out collective scaffolding processes to find answers to the question of what professional action should be taken. The rubric itself made them reflect on what they need to know and on what they should do; and this reflection allowed them to perceive their limitations and reflective abilities. Finally, a further aspect that most students indicated was that the rubric helped them to gain consistency in their process of improvement. Some students, for example, claimed to be able to track their own development and to see what they had learned from their own reflective practice; or else they said that the instrument served as a guide and helped them to understand where they were located in the process.

To give some examples, preservice teachers commented: 'the rubric helps me to see my progress and what I have learned on reflective practice', 'the rubric makes me aware of the importance of reflecting on my own processes of action to improve them', 'it serves as a guide and it helps me both to find myself and to know at what level I am' and 'the rubric made me realise that asking oneself can help to improve knowledge and create a more critical model about oneself' (see also Table 4).

Table 4. Categories and associated explanations for assessment of the NARRA rubric and examples by students for each category.

Categories	Explanation	Examples
Description Preservice teachers identify clearly the focus of reflection of their experience (often it refers to their <i>practicum</i> in a school) and they describe it	The identification of their own previous situations and experiences	"The rubric has helped me to identify my previous professional experience, especially since I filled it in before and after the <i>practicum</i> " "It is difficult to find a personal example that allows you to engage in a process of identification"
	Becoming aware of their own experiences (during their <i>practicum</i>)	"The rubric has helped me to focus on the most important aspects of my <i>practicum</i> " "In my case, I did not manage to reach such a deep level of reflection"
Intrapersonal inquiry Preservice teachers engage in an intrapersonal inquiry process by asking questions about a given experience	Own beliefs, previous knowledge and experiences	"The rubric induces us to reflect on ourselves, what to think, and how to act" "It is difficult to find down-to-earth examples that are sufficiently concrete in relation to previous beliefs and knowledge"
	Asking questions	"I realise how important it is to ask myself and my colleagues questions to improve my knowledge and my capacities; for example, to learn to ask other questions or to be more critical" "The rubric does partially help me, but it should be accompanied by a seminar or feedback from the professionals; we don't have enough basic knowledge on this"
Interpersonal inquiry Preservice teachers engage in an interpersonal inquiry process by asking questions and formulating hypotheses about a given experience	Formulating hypotheses	"It's important to formulate hypotheses and analyse them before the <i>practicum</i> , because it's important to be clear about what one is pursuing" "The rubric did not help me to formulate hypotheses and to analyse them before the <i>practicum</i> because I lack knowledge in this field and in this line of research ... Moreover, I formulated hypotheses from my own knowledge and my own practice, not from the rubric"
	Limitations and capacities in relation to professional knowledge	"It helps me to see my limitations and virtues and see what my capacities are in this area ... I was able to write a list with all I still need to learn and what knowledge was already in my mind" "The use of the rubric helps me to analyse myself as a professional. I think we rarely stop to think what we need to know and what we need to do. We should reflect more on these aspects"
Argumentation Preservice teachers explain, justify and/or discuss the answers to their own questions and hypotheses	The difficulties in the analysis and the lack of knowledge to discuss	"I do not analyse and discuss enough because I only do it when I have to answer in a given situation" "I realise I do not feel capable enough; I lack training to discuss the beliefs of my own profession"
	The need for reflective practice	"I have been able to see my development and what I have learnt of my reflective practice" "The rubric should invite one to reflect from another perspective"
Improvement Preservice teachers transform the professional knowledge and their own situation while improving it; in		

(continued)

Table 4. Continued.

Categories	Explanation	Examples
other words, they develop professionally	Starting alternative actions to innovate	<p>“The rubric makes me aware of the importance of reflecting on one’s ways of acting and on how to improve them”</p> <p>“No, the rubric helps me in thinking of my own actions, but I do not believe that helps me to improve my practice”</p>
	Development of own professional practice	<p>“Yes, it serves well as a guide and it helps me to identify where I am, at what point”</p> <p>“The rubric does not help me to identify my own development because the curriculum is too rigid. Moreover, it is the day-to-day practice that helps me to reflect ... I am already a critical and reflective individual, so the rubric was not helpful”</p>

Note: Author’s elaboration. The direct quotes have been translated from the original language used by the preservice teachers.

Analysis of the units of information revealed that only a few students believed the NARRA rubric not to be useful. Their main argument was that they already considered themselves to be critical and reflective individuals, and therefore no rubric was necessary to guide them to reflect on these aspects. Some students suggested that the lack of personal exemplification and the lack of self-knowledge made it difficult to carry out these processes of description, inquiry, argumentation and improvement.

Discussion

In this article, we have analysed the validity of the NARRA rubric (Alsina et al. 2017) in a group of preservice teachers who have received extensive training in the rudiments of reflective learning on the basis of the ALACT model proposed by Korthagen (2001), and Loughran’s (2002) approaches to teaching reflection to achieve meaningful learning.

Our results may be considered good, given that we found statistically significant differences in student scores between the pre-seminar test and the post-seminar test, suggesting that students learned to reflect within the framework of the Reflective Practice Seminar, and that the rubric is a valid instrument for measuring this learning, according to Jonsson and Svingby (2007), Panadero Alonso-Tapia, and Huertas (2014) and Fullana et al. (2016). Our data contradict somewhat the contributions of Clarà (2015), who pointed out that since Korthagen assumes a prescriptive view of reflection, preservice teachers might not reflect as they should. Clarà (2015) added that if the descriptive nature of the notion of reflection is accepted, then the five stages of the ALACT model established by Korthagen do not describe satisfactorily how the actual reflection processes work. However, the qualitative data obtained from our analysis allowed us to glimpse these processes, which (in contrast to Clarà’s opinion) fit with the phases established by Korthagen in the ALACT model. The students in our study confirmed that they went through five stages in their reflection processes: description, intrapersonal inquiry, interpersonal inquiry, argumentation and improvement.

According to Korthagen and his team at the University of Utrecht, and in line with the data we have obtained, during the early phases of reflection, preservice teachers become aware of their own knowledge, experiences and beliefs with regard to themselves as apprentices and in relation to their profession (Korthagen 2001; Black and Plowright 2010; Alsina et al. 2016; Faye Carter et al. 2016). In the first phases of the reflective cycle, preservice teachers carry out processes of identifying their own professional experience with respect to academic or professional practices. In addition, they appreciate having a rubric that assists them in the process of assessing reflective narratives—and in the process of reflection itself—by establishing levels

and indicators that guide analysis of a situation, an activity or an experience as the object of reflection (element 1 of the NARRA rubric). Several authors have pointed out that this is fundamental: if there is no such preliminary awareness, then it is not possible to carry out subsequent processes of inquiry that contribute to the transformation of knowledge and action (Friedkin et al. 2016).

In a second phase, preservice teachers begin to seek answers to improve their own professional profile. At that stage (which may be considered a sort of 'crisis', given the important confrontation between what one thinks and what others think), a fundamental aspect is being developed: i.e. students are aware of their individual capacity, instead of offering uniform ideas on what to do. During this phase, students reflect on the need to ask themselves questions, construct hypotheses and look for a theory that offers adequate answers. It was for precisely this reason that the Reflective Practice Seminar theory did not provide those tools in the first session, but only when preservice teachers needed them. This training model runs counter to instructional models based on deductive (theory-to-practice) learning, since preservice teachers and novice teachers do not feel ready for practice, and the theoretical approaches do not help them (Zeichner and Tabachnick 1981; Wideen, Mayer-Smith, and Moon 1993). The students in our study appreciated that the NARRA rubric served to make them aware of the importance of asking questions and hypothesising about the professional profile itself, in order to be able to carry out subsequent scaffolding processes and to find essential answers.

Korthagen (2001), in his ALACT model, also pointed out the need to carry out processes of inquiry during the intermediate phases of the reflective cycle, especially in the phases of 'Looking back on action' and 'Awareness of essential aspects'. In our study, we also found that after this process of inquiry (and partly thanks to the NARRA rubric), preservice teachers realise what knowledge they lack and what they already know. The rubric made them think about what they need to know and what they need to do, and this process allowed them to perceive their limitations, as well as their reflective ability. To our way of understanding, this is a fundamental aspect in the development of critical thinking.

In addition, preservice teachers became aware of their own improvement. They stated that the instrument had guided and helped them to realise the position they were currently in. These aspects confirm the instructional view of the rubrics proposed by other authors (Goodrich 2000; Jonsson and Svingby 2007).

In conclusion, we can confirm that, with directed instruction and tools, preservice teachers can progressively transform their beliefs about teaching practices and can become reflective, critical teachers. We agree with Larrivee when he states that 'the path to developing a critically reflective teacher cannot be prescribed with an intervention formula. The route cannot be pre-planned—it must be lived' (2000, 306). In this sense, the seminar was programmed to minimise resistance to establishing a culture of control in the classroom, as well as to encourage reflective teachers, who are systematically involved in critical reflection, to remain spontaneous and natural in the dynamic environment of the classroom.

In future studies, it will be necessary to address certain aspects of the formulation of the rubric that students found hard to understand because they were too technical. It may also be advisable to influence, through more targeted training, those students who do not believe that they need to be taught to reflect because they are already reflective individuals. Although there are students who are innately more reflective than others, we believe that in higher education it is necessary to offer tools for students to construct reflective narratives of quality that help them learn throughout their lives.

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