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Educational assistance to improve reflective practice among student teachers

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Abstract

Introduction. Recent educational research suggests that joint reflection can enhance student teachers' reflections on their own practice if they have adequate tutor support. This study aims to identify and characterize the assistance offered by college tutors in situations of joint reflection and analyses their contribution to the development of students' ability to reflect on their teaching practice. More specifically, we aim to identify the kind of tutor assistance that best helps students to develop their reflective capacity and to understand the situations they encounter during teaching practice.

Method. The research uses a case-study design to analyse the process of joint reflection engaged in by two groups of student teachers (13 and 15 students) with the assistance of their university tutors over five weeks of a teaching practice module. Data in the form of video recordings were subjected to two kinds of analysis: interactivity analysis and content analysis, both with the aim of examining the assistance offered by tutors in relation to reflective practice.

Results. Each tutor distributed assistance in a specific way, focusing on different characteristics of reflection and prioritizing intervention in particular dimensions of it. Differences were also observed in the type and amount of assistance offered in each dimension of reflection. The tutors also differed in the extent to which their assistance targeted those dimensions of most relevance for an in-depth understanding of teaching practice situations.

Discussion and Conclusion. In general, the tutors appeared to be better at helping students to identify the factors involved in their teaching practice experiences than they were in aiding their understanding through the identification and analysis of the characteristic dilemmas involved in these situations.

Keywords: Reflective practice; tutor assistance with reflective practice; student teachers; dilemmatic knowledge.

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Intervención educativa para mejorar la práctica reflexiva en estudiantes de Magisterio

Resumen

Introducción. Algunos resultados de la investigación educativa de los últimos años indican que la reflexión conjunta puede mejorar la reflexión de los estudiantes de maestro sobre las situaciones de la práctica, si cuentan con ayuda adecuada del tutor. Este estudio tiene como objetivos identificar y caracterizar la ayuda ofrecida por los tutores de la universidad en situaciones de reflexión conjunta en el Prácticum y analiza su contribución al desarrollo de su capacidad reflexiva sobre las situaciones de la práctica docente.

Método. Se trata de un estudio de caso. Se centra en el análisis de un proceso de reflexión conjunta de dos grupos de estudiants de maestro (13 y 15 estudiantes) y sus tutores en la universidad durante cinco semanas del Prácticum. Se llevó a cabo un doble análisis de los datos registrados en video: análisis de la interactividad y análisis de Contenido, ambos para examinar las formas de ayuda del tutor a la reflexión sobre la práctica.

Resultados. Cada tutor distribuyó sus ayudas a la reflexión conjunta de modo específico, centrándolas en aspectos característicos de la reflexión diferentes, priorizando su intervención en algunas de las dimensiones de la reflexión. Se encontraron también diferencias en el tipo y cantidad de la ayuda ofrecida en cada dimensión de la reflexión. Asimismo los tutores mostraron diferencias en ofrecer ayudas a la reflexión focalizadas en aquellas dimensiones relevantes para la interpretación en profundidad de las situaciones de la práctica.

Discusión y Conclusión. En general, los tutores mostraron una mayor competencia en ayudar a los alumnos a identificar los factores de las situaciones de la práctica y una mayor dificultad en asistirles en la interpretación de las situaciones analizadas mediante la identificación y el análisis de los dilemas que las caracterizan.

Palabras Clave: Práctica reflexiva**;** ayudas del tutor a la reflexión; estudiantes de maestros; conocimiento de los dilemas.

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Introduction

Almost all current teacher training programmes include the development of reflective practices as a fundamental thinking process for teachers (Rasmussen, 2008; Ward & McCotter, 2004). However, there is no body of commonly accepted knowledge on which a model of reflection might be based, and nor do we really understand how the learning of this reflection might be promoted.

Classical authors like Dewey (1933, 1938) and Schön (1983, 1987) agree that reflection responds to the need to make an indeterminate situation a clearly determinate one. For these authors, the origin of reflection lies in a state of doubt, hesitation, perplexity and mental difficulty, out of which a process of searching and inquiry aims to resolve the difficulty and understand an initially ambiguous situation. According to Dewey, reflection involves a dual process of analysis and synthesis: analysis entails focusing one's thinking on one of the factors in the situation, while synthesis involves placing the various factors in context, in their relation to the other factors in the situation so that the situation becomes an articulated whole. Synthesis thus allows us to understand the internal relationships of the situation and the tensions between its factors that make it problematic. Some authors (Mälkki, 2012; Pareja-Roblin & Margalef, 2011; Yoon & Kim, 2010) have pointed out that in educational situations these internal tensions between situational factors result in dilemmas for the teacher, understood as "conflicts and opposing tendencies within oneself that require a deliberation between multiple, equally viable and sometimes unattractive alternatives" (Pareja-Roblin, & Margalef, 2011, p.19). Clandinin (1986) emphasized the dilemmatic nature of teachers' knowledge, and Cochran-Smith and Lytle (1999) argued that the process of inquiry among teachers has more to do with understanding and explaining dilemmas than with finding solutions. In other words, in the field of education the clarification through reflection of the internal tensions that characterize situations requires both the clarification and understanding of the dilemmas that teachers face and which are intrinsic to these situations. Other authors have added that in this dual process of analysis and synthesis, reflection should also establish connections between the situation reflected upon and broad-ranging theoretical knowledge of an academic nature; in this respect, reflection constitutes a crucial tool for the construction of professional knowledge (Korthagen, 2001, 2010; Oner, & Adadan, 2011). Any given reflection process may therefore be characterized according to three dimensions: 1) the degree to which the various factors intervening in the situation are

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identified and understood (analysis); 2) the degree to which tensions between these factors and the dilemmas they create for the teacher are clarified and understood (synthesis); and 3) the degree to which the situation is connected with academic knowledge.

Some authors (Bain, Mills, Ballantyne, & Packer, 2002; Grossman, 2008; Hatton & Smith, 1995; LaBoskey, 1994; Moore-Russo & Wilsey, 2014, Van Manen, 1977; Zeichner & Liston, 1996) have used similar dimensions (similar especially to the aforementioned dimensions 1 and 3) to characterize levels of reflection among student teachers. Their results indicate that the development of students' reflective capacities requires educational assistance. Thus, processes of individual reflection carried out without support structures (Dawson, 2006; Delandshere & Arens, 2003; Hamlin, 2004) lead to lower levels of reflection than do processes with structural support (Chamoso & Cáceres, 2009; Chitpin, Simon, & Galipeau, 2008; Liakopoulou, 2012; Seban, 2009), and the latter, in turn, produce lower levels than do processes of joint reflection carried out with the aid of knowledgeable others (Gelfuso, & Dennis, 2014; Samuels & Betts, 2007). However, the results also show that the mere presence of educational assistance is not sufficient to promote high levels of reflection (Davis, 2006; Gelfuso & Dennis, 2014; Harford & MacRuairc, 2008; Postholm, 2008; Wopereis, Sloep, & Poortman, 2010; Yoon & Kim, 2010), even if it is combined with processes of joint reflection, or if means (e.g., weblogs, videos) and artefacts (portfolios, journals, logbooks, etc.) that favour it are available.

In this regard, although increasing attention is being paid to providing future teachers with quality experiences that promote reflection (Darling-Hammond & Lieberman, 2012; Korthagen, 2001; Le Cornu & Ewing, 2008) many authors continue to wonder how it might best be promoted. Furthermore, the different educational models based on multiple and diverse models of reflection (Akbari, 2007; Gennor, 2005; Ovens & Tinning, 2009; Thorsen & DeVore, 2013) present major disagreements regarding the conditions that allow future teachers to learn to reflect (Etscheidt, Curran, & Sawyer, 2012; Zeichner, 2010).

This article aims to contribute to this debate by presenting two exploratory case studies which describe the distribution of the educational assistance offered by a tutor in a process of joint reflection with student teachers. It also explores hypotheses regarding the relationship between the distribution of this support and the progress that students make in their reflections.

Teaching proposal

The study was carried out in the context of a teaching practice module that forms part of a degree in primary education at the University of Barcelona. During the four months that this module lasts, students spend four days a week on placement in schools, while on the fifth day they are required to attend a three-hour seminar at the university.

To support and improve the process of reflection and to help students specifically to interpret their experiences in the practical setting, it was decided to implement a new activity across the first five sessions of the seminar. Half the allotted tutorial time (90 minutes) was dedicated to this activity. The activity began by asking each student to describe, in writing, a situation they had experienced while on placement and which had particularly caught their attention (Roberts, 2009; Scherff & Singer, 2012). They were told to make their account of the situation as descriptive as possible, presenting the facts without interpreting them, but including any significant dialogues, gestures or movements that were relevant to the situation. The specific instruction was to present their account in such a way that their peers and the seminar tutor would be able to represent the situation as if they had experienced it directly.

Each seminar session began with the chosen student reading aloud his/her account of a situation, and this was followed by a conversation involving all the students, who shared their reactions to what had been described and pointed out the various aspects of the situation that had caught their attention. In terms of their involvement in this conversation the students were asked to focus on understanding what was going on in the situation and why, and to avoid making judgments (positive or negative) regarding the behaviour of those involved in the situation, or suggesting what they should or shouldn't have done.

The university tutor acted as a moderator and, by means of a series of implicit principles for intervening in the conversation, sought to guide students towards the objectives established. These principles focused especially on achieving a multivocal and participatory conversation, one that would assist analysis (identification of intervening factors) and synthesis (comprehension of the tensions and dilemmas) within dialogic joint reflection.

At the end of each of the five scheduled seminar sessions the tutor presented the students with a new situation and asked them to write an individual reflection on it (Smith & Tillema, 2003; Bain, et al., 2002). Students had to send their written text to the teacher (via

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the Moodle platform) before the next scheduled seminar. This task was intended to serve as an indicator of the progress made in students' reflection over the five weeks.

Method

Participants

Two cases were analysed, each corresponding to a group of trainee teachers, currently on placement, and their tutor. Case 1 involved 14 students and the tutor, while Case 2 involved 13 students and the tutor. The students were in their third year of training and this was their second teaching placement in primary schools. The placement lasted for 15 weeks. Both tutors were university lecturers with experience of this role.

The discussion and analysis of the situations they had experienced while on placement took place during the first five tutorial sessions. These sessions lasted for three hours, with around half the allotted time being set aside for this task.

Instruments and Procedure

Two kinds of data were collected. First, we videoed the whole of the activity involving discussion of all the situations presented in the five sessions. Table 1 shows the duration of the recording for each activity in each session and for both cases.

Table 1
Duration of the activity and the number of accounts analysed in each of the sessions and for both cases

		Session 1	Session 2	Session 3	Session 4	Session 5	Total	Mean
Case 1	Duration of the activity	1 h 33'	0 h 45'	1 h 17'	1 h 32'	1 h 54'	7 h 1'	1 h 24'
	Nº of situations analysed	3	2	3	3	3	14	3
Case 2	Duration of the activity	1 h 16'	0 h 44'	0 h 35'	0 h 30'	2 h 2'	5 h 7'	1 h 1'
	Nº of situations analysed	2	1	1	1	3	8	1.6

The second source of data was the documents in which the students (individually and after each session) had written down their reflections about the new practice-based situations proposed by the tutors. There were a total of 61 documents in Case 1, and 54 documents in Case 2.

Data analysis

The analysis of video recordings involved a content analysis of the tutor's discourse in each of the activities. The aim here was to identify the kinds of discursive assistance offered by both tutors to promote students' reflection.

In order to develop a category system for analysing discursive assistance, we started from the guidelines given to tutors within the context of the teaching proposal, and then carried out a back-and-forth comparison of these guidelines with the data. The final category system included six types of discursive assistance that could be offered by tutors: 1) promoting and raising students' awareness of the various factors involved in the situation; 2) promoting and helping students to identify the dilemmas present in the situation; 3) helping students to link the situation being discussed with the academic knowledge acquired during the theoretical part of their degree course; 4) promoting an interpretative (as opposed to an evaluative or judgmental) approach to the proposed situation; 5) helping students to relate the situation being discussed with other practice-based situations that share one or more relevant feature; and 6) helping students by revisiting and summarizing different elements that emerge during the discussion. Table 2 shows the final category system that was used and gives some examples of teacher discourse for each category.

Table 2
The category system used to analyse the discursive assistance offered by tutors (with examples)

Type of assistance	Aim	Example
Factors	Help to see factors	*You mentioned some elements for understanding the situation. What other elements might you see here?*
Dilemmas	Help to see dilemmas	*There is a tension between the time I have and the pace of classroom work, and the pressure coming from the school to complete a certain syllabus*
Academic	Help to use academic knowledge	*This seems like a punishment, doesn't it? What do you know about punishment, what have you learnt during your degree?*
Interpretative	Promote an interpretative view	*Don't tell me what you would do, first let's understand what's happening and why*
Situations	Promote analogies with other situations	*Do you see anything here that reminds you of the situation discussed in our last seminar?*
Summary	Summarize ideas	*You've mentioned a number of things: you've talked about the culture of the school, the teacher's expectations, the kind of activities, etc.*

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The unit of analysis for applying this category system was turn-taking: in other words, the task was to identify the type of assistance that appeared each time the tutor took a turn to speak. It was assumed that for a given turn by the tutor, one, several or none of the types of assistance (categories) could appear. In order to calculate the frequency of each type of assistance, for each session we counted the number of turns in which each of the categories could be observed. This enabled us to calculate the absolute and relative frequencies of assistance in each session.

The individual texts produced by the students after each session underwent content analysis in order to evaluate how individual reflections by students improved during the five sessions. Specifically, we considered five aspects or dimensions: 1) whether the student identified various factors that were involved in the situation being analysed; 2) whether the student identified tensions and dilemmas in the situation; 3) whether the student used academic knowledge in a relevant and substantive way to improve his/her understanding of the situation; 4) whether the student adopted an interpretative (as opposed to an evaluative or judgmental) approach to the situation; and 5) whether the student indicated any additional information that would be needed in order to better understand the situation.

The unit of analysis here was the full text, with each of the above aspects being considered as either present or absent. Thus, we evaluated, for example, whether in the text as a whole the student identified two or more factors that were present in the situation, or whether reference was made to additional information that would be needed in order to better understand the situation. The specific criteria used for this analysis are shown in Table 3.

Table 3.
The criteria used for the content analysis of the students' individual texts

Dimension	Description
Factors	The student explicitly identifies two or more factors to explain the situation
Dilemmas	The student explicitly identifies a dilemma or tension that could explain the problem featured in the situation
Academic	The student uses academic knowledge in order to understand one or more aspects of the situation. The academic knowledge used by the student is relevant and helps to understand better a significant aspect of the situation
Interpretation	The student takes an interpretative approach to the situation, with the primary aim of understanding what is happening and why (as opposed to judging the teacher's actions in the situation as "good or "bad", or proposing a "solution" to the situation prior to or without any analysis and understanding)
Information	The student identifies some additional key information that would be needed to better understand the situation

Based on this evaluation we then calculated the percentage of students who, for each situation (session), achieved a favourable score on each of the aspects considered. This enabled us to observe the extent to which, if at all, the students' ability to reflect on situations had improved across the five sessions.

The protocol for analysing both the video recordings and the students' individual texts was based on a systematic procedure whose goal was to achieve inter-rater consensus regarding the identification and assignment of categories. This procedure was applied to a random selection of data (video recordings and individual texts) corresponding to different activity sessions. Independent raters assigned categories to the data and compared their results, with any disagreements being discussed so that the corresponding operational criteria could be refined. In the event of persistent disagreement, a third rater acted as arbitrator.

Having established the protocol, we then assessed the mean inter-rater reliability. This was done by calculating Cohen's kappa index for a data sample corresponding to the independent coding of 30% of the respective units of analysis (turn-taking by the tutor in the case of the video recordings, and full texts in the case of the students' individual texts). The reliability obtained was above .9 for all the categories analysed. All the analyses were performed using Atlas.ti 7.

Results

Results regarding the progression of individual reflection by students

Tables 4 and 5 and Figures 1 and 2 show the percentage of students who achieved each dimension in each week, in other words, how the five dimensions considered when analysing the students' individual texts evolved across the five weeks. Figure 1 and Table 4 correspond to Case 1, and Figure 2 and Table 5 to Case 2.

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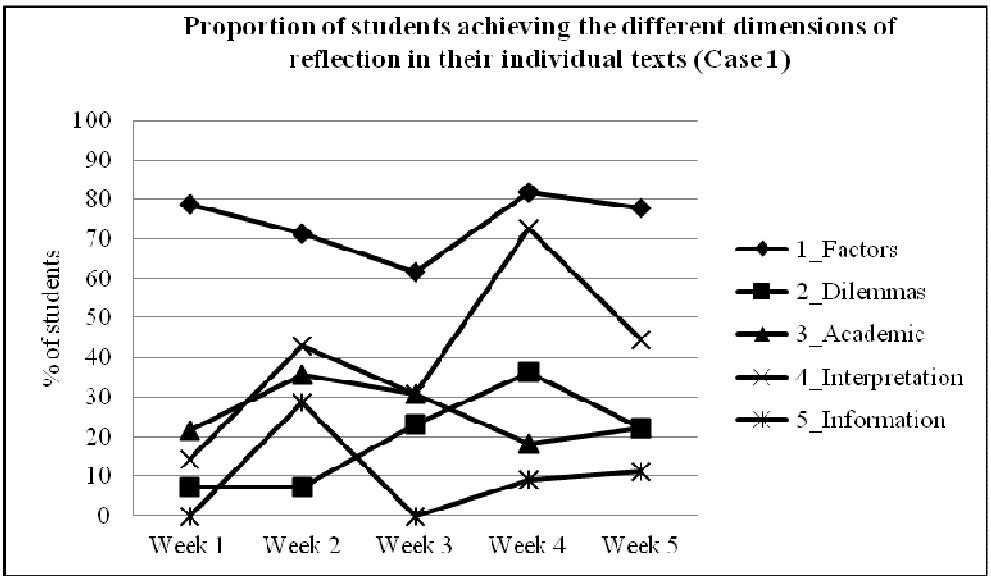

Figure 1. Proportion of students achieving the different dimensions of reflection in their individual texts (Case 1)

Table 4
Proportion of students (%) achieving the different dimensions of reflection in their individual texts (Case 1)

	Factors	Dilemmas	Academic	Interpretation	Information
Week 1	78.57	7.14	21.43	14.29	0.00
Week 2	71.43	7.14	35.71	42.86	28.57
Week 3	61.54	23.08	30.77	30.77	0.00
Week 4	81.82	36.36	18.18	72.73	9.09
Week 5	77.78	22.22	22.22	44.44	11.11

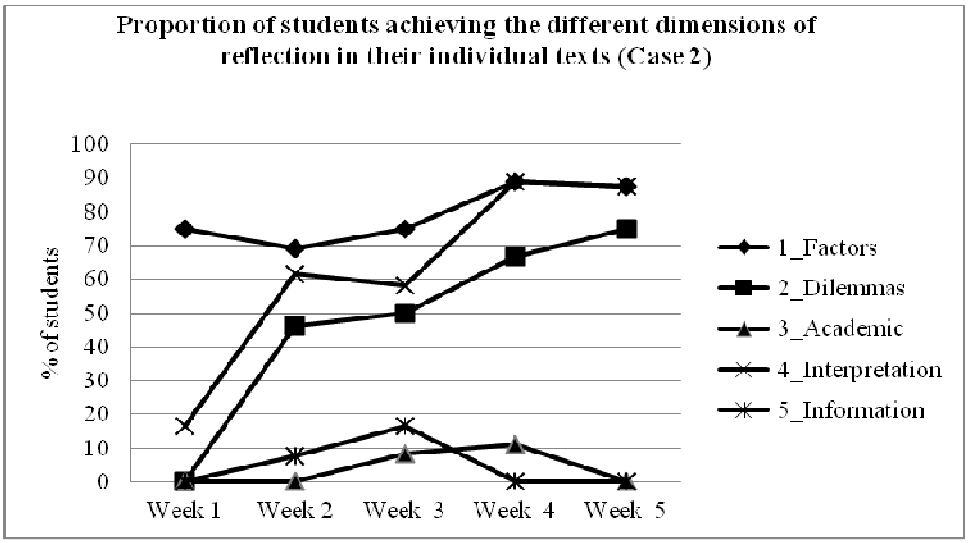

Figure 2. Proportion of students achieving the different dimensions of reflection in their individual texts (Case 2)

Table 5.

Proportion of students (%) achieving the different dimensions of reflection in their individual texts (Case 2)

	Factors	Dilemmas	Academic	Interpretation	Information
Week 1	75.00	0.00	0.00	16.67	0.00
Week 2	69.23	46.15	0.00	61.54	7.69
Week 3	75.00	50.00	8.33	58.33	16.67
Week 4	88.89	66.67	11.11	88.89	0.00
Week 5	87.50	75.00	0.00	87.50	0.00

According to these results, the two dimensions on which the greatest progress was made across the five weeks were, in both cases, Interpretation and Dilemmas, although Interpretation always achieved a higher value than the Dilemmas dimension. The progress made in relation to these two dimensions was notably stronger in Case 2 (Interpretation: 16.67% to 87.50%; Dilemmas: 0% to 75%) than in Case 1 (Interpretation: 14.29% to 44.44%; Dilemmas: 7.14% to 22.22%). The Factors dimension achieved high values in both cases from the outset and maintained these levels across the five weeks, whereas the values for the other two dimensions, Academic and Information, remained low in both cases across the five-week period, although values for both these dimensions were higher in Case 1 than in Case 2.

Descriptive results regarding tutor assistance with the process of joint reflection

Tables 6 and 7 show several descriptive indicators regarding the process of joint reflection and the assistance offered by the tutor during this process. Table 6 shows the results for Case 1, while Table 7 corresponds to Case 2.

Table 6.
Descriptive indicators of joint reflection in Case 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Total
Number of situations worked on	3	2	3	3	3	14
Number of assistance turns by the tutor	41	21	26	46	46	180
Mean number of assistance turns by the tutor per situation	13.7	10.5	12	15.3	15.3	12.8
Total time spent on joint reflection	1:33:00	0:45:00	1:17:00	1:32:00	1:54:00	7:01:00
Time devoted to assistance	00:24:01	00:12:36	00:29:23	00:32:48	00:29:13	2:08:01
Proportion of joint reflection time devoted to assistance						30.4%
Mean time devoted per turn of assistance	00:00:35	00:00:36	00:01:08	00:00:43	00:00:38	00:00:43

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Table 7
Descriptive indicators of joint reflection in Case 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Total
Number of situations worked on	2	1	1	1	3	8
Number of assistance turns by the tutor	26	37	23	15	64	165
Mean number of assistance turns by the tutor per situation	13	37	23	15	21.3	20.6
Total time spent on joint reflection	1:16:00	0:44:00	0:35:00	0:30:00	2:02:00	5:07:00
Time devoted to assistance	00:32:12	00:26:06	00:11:22	00:14:00	00:52:47	2:16:28
Proportion of joint reflection time devoted to assistance						63.8%
Mean time devoted per turn of assistance	00:01:14	00:00:42	00:00:30	00:00:56	00:00:49	00:00:50

These results reveal a major difference between Case 1 and Case 2 as regards the amount of assistance offered by the tutor during the process of joint reflection. Specifically, the total number of assistance turns was higher in Case 1 than in Case 2 (180 vs. 165). However, the total amount of time that the tutor devoted to assistance was similar in the two cases (Case 1: 2 h 08'; Case 2: 2 h 16').

Notably, there were major differences between the two cases in the total amount of time devoted to joint reflection (Case 1: 7 h 1'; Case 2: 5 h 7'), as well as in the number of situations worked on (Case 1: 14; Case 2: 8). This means that although the assistance data for the two cases are similar in absolute terms, they are very different when considered in relative terms. Specifically, the proportion of joint reflection time devoted to tutor assistance was much higher in Case 2 (63.8%) than in Case 1 (30.4%). Similarly, the mean number of assistance turns by the tutor per situation was much higher in Case 2 (20.6) than in Case 1 (12.8).

Results for the distribution of assistance offered by the university tutor

Table 8 show the proportion of assistance turns that tutors in Case 1 and Case 2 devoted to each kind of assistance across the whole process of joint reflection.

Table 8
Proportion (%) of assistance turns by the tutor in Case 1 and Case 2

	Case 1	Case 2
Factors	26.66	8.42
Dilemmas	22.5	28.83
Academic	9.58	13.27
Interpretation	7.92	14.54
Situations	5.42	7.14
Summary	27.92	27.80

These results show that the tutor in Case 2 devoted more time to Interpretative, Dilemmas and Academic assistance than the tutor in Case 1, whereas the tutor in Case 1 devoted much more time to Factors assistance than the tutor in Case 2. The proportion of assistance devoted to the Summary and Situations dimensions was similar in the two cases. Tables 9 and 10 show the proportion of assistance turns that tutors devoted to each kind of assistance in each weekly session. Table 9 shows the results for Case 1, while Table 10 shows the results for Case 2.

Table 9
Proportion (%) of assistance turns devoted per week to each type of assistance by the tutor in Case 1

	Week 1	Week 2	Week 3	Week 4	Week 5
Factors	23.64	12.00	27.50	34.43	27.12
Dilemmas	29.09	52.00	15.00	14.75	16.95
Academic	0.00	0.00	7.50	19.67	13.56
Interpretation	16.36	8.00	7.50	3.28	5.08
Situations	1.82	0.00	12.50	3.28	8.47
Summary	29.09	28.00	30.00	24.59	28.81

Table 10
Proportion (%) of assistance turns devoted per week to each type of assistance by the tutor in Case 2

	Week 1	Week 2	Week 3	Week 4	Week 5
Factors	11.29	2.27	10.42	13.46	8.45
Dilemmas	20.97	12.50	37.50	34.62	37.32
Academic	6.45	42.05	4.17	3.85	4.93
Interpretation	29.03	11.36	20.83	9.62	9.86
Situations	4.84	1.14	6.25	1.92	14.08
Summary	27.42	30.68	20.83	36.54	25.35

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In Case 1 there was a high proportion of Dilemmas assistance in week 2 (52%), but the presence of this kind of assistance then decreased substantially during weeks 3, 4, and 5 (staying around 15%). Assistance with Summary was frequent and sustained across the five weeks (between 25% and 30%), while the proportion of Factors assistance was also high and remained between 23% and 35% in weeks 1, 3, 4 and 5 (week 2 was an exception here). The proportions of Interpretative and Situation assistance were quite low across the five weeks. Finally, no Academic assistance was given at all in weeks 1 and 2, although its presence then increased substantially during the remaining three weeks; however, it always remained below 20%.

In Case 2 there was a high proportion of Academic assistance in week 2 (42.05%), but this kind of assistance had a minimal presence (below 5%) in weeks 1, 3, 4 and 5. Assistance with Summary was frequent and sustained across the five weeks (between 20% and 36%). Dilemma assistance was also common and sustained (between 20% and 37%) in weeks 1, 3, 4 and 5 (with week 2 being an exception), and it was especially present and sustained during the last three weeks (between 34.62% and 37.32%). The proportion of Interpretative assistance, although not especially high, remained between 10% and 30% across the five weeks. By contrast, the proportions for both Factors and Situation assistance were quite low across all five weeks.

Summary of the results

The results suggest that the processes of joint reflection conducted in both cases helped students to make progress in relation to the Interpretation and Dilemma dimensions, although of the two the values for Interpretation were always higher in both cases and across all five weeks. It should also be noted that progress in relation to these two dimensions was considerably more marked in Case 2 than in Case 1. The results also suggest that students find it relatively easy to recognize the Factors of situations from the outset, since the values for this dimension (see Table 5: Factors) were very high in all five weeks and in both cases. Conversely, the results also suggest that the process of joint reflection did not help to develop the Academic and Information dimensions, which present low values in both cases across all five weeks.

The proportion of assistance offered by the tutor during the processes of joint reflection differed between Case 1 and Case 2. Specifically, it was much higher in Case 2,

both from the point of view of the proportion of time devoted to assistance and in terms of the mean number of assistance turns that the tutor took in each situation. However, the total amount of time devoted to the whole process of joint reflection, as well as the number of situations worked on, were both higher in Case 1 than in Case 2.

The results also reveal differences between the two cases in the distribution of assistance. In both cases the tutor made a sustained effort to offer Summary assistance. However, whereas in Case 1 a sustained effort was also made in relation to Factors assistance, this kind of assistance was infrequent in Case 2, with a greater sustained effort being directed instead towards Dilemmas assistance. Although in Case 1 a considerable amount of Dilemmas assistance was offered in week 2, this effort was not sustained across the five weeks, and the relative proportions of this kind of assistance were low in weeks 1, 3, 4 and 5. A similar pattern can be observed in Case 2 with respect to Academic assistance, which had a strong presence in week 2 but was infrequent in weeks 1, 3, 4 and 5. Academic assistance also showed a minimal presence in Case 1 across all five weeks. Finally, in both Cases 1 and 2 the proportion of Situation assistance remained low across the five weeks.

Discussion and Conclusions

The results of this study support those of previous research which found that participation in processes of joint reflection allows students to develop reflective skills provided that they receive specifically tailored assistance over the course of the process (Davis, 2006; Gelfuso & Dennis, 2014; Harford & MacRuairc, 2008; Postholm, 2008; Wopereis, Sloep, & Poortman, 2010; Yoon & Kim, 2010). Our findings therefore confirm the importance of assistance for the development of joint reflection.

However, not all kinds of assistance are equally useful. Our results show that although students in both cases made progress in their joint reflection processes, the effect was much greater in Case 2 than in Case 1. Obviously, the design of the study (i.e. a case study) prevents us from establishing relationships that might explain these differences (to do so, a quasi-experimental study would be required). Nonetheless, the results about the processes of joint reflection in the two cases can be used to formulate hypotheses that can be tested in future studies.

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The first hypothesis regarding why Cases 1 and 2 differed in terms of the amount of progress made in joint activity concerns the level of tutor intervention. One of our findings was that the tutor in Case 2 used 63.8% of the total joint reflection time to talk to students and offer them assistance, whereas the corresponding proportion of time in Case 1 was 30.4%. Obviously, this also means that students talked proportionally more in Case 1 than in Case 2. A possible partial explanation of the results would therefore be that students in Case 2 made greater progress than their peers in Case 1 because their joint reflection process included a much higher proportion of assistance from their tutor. However, although this may be partially true for our data, we would argue that such an explanation is not fully generalizable. This is because numerous studies have documented that a high degree of interventionism by the teacher in educational interactions does not always foster students' learning, and may in fact inhibit it (Dillenbourg, 2002; Rienties et al., 2012). Indeed, many authors have argued that the distribution of talk in educational situations should be inverted, such that the students rather than the teacher are the main protagonists (Cazden, 2001; Lemke, 1990). In our view, the degree to which the teacher intervenes in joint reflection can be an important factor when it comes to explaining learning, but the extent of its influence will depend on the nature of this intervention. In other words, we suggest that the proportion of assistance alone cannot explain differences in the progress made by students in their reflective practice, although it may become an important explanatory factor if it is combined with a certain kind and a certain distribution of assistance in teacher and student interactions and peer interaction (van de Pol, Volman, & Beishuizen, 2010).

Interestingly, the distribution of assistance did differ between the two cases studied: in Case 1 a more sustained effort was made in relation to Factors assistance, whereas in Case 2 the most sustained effort concerned Dilemmas assistance. Furthermore, although the proportion of Interpretative assistance was not especially high, it was greater in Case 2 than in Case 1. This suggests another partial explanation for the progress we observed in students' joint reflection: the Dilemma and Interpretation dimensions showed greater progress in Case 2 than in Case 1 because in the former a higher proportion of assistance was targeted at these specific dimensions. On the other hand, in Case 1 little progress was observed in relation to Factors – despite the tutor's efforts in this regard – because a high proportion of students could already fulfil the criteria for this dimension at the outset; in other words, they did not need this kind of assistance. This explanation of our data suggests that in processes of joint reflection, the assistance offered by tutors should be aimed specifically at what Dewey (1933)

called “synthesis” rather than “analysis”, since students (at least in our two cases) seem to find it much easier to identify the different factors involved in a situation than to see the tensions and dilemmas that are established among them.

Another point to be made about the distribution of assistance concerns the degree to which assistance is sustained. Our results show, for example, that in the second week of Case 2 the tutor made an enormous effort to offer Academic assistance, whereas this kind of assistance was barely present in the other four weeks. Interestingly, students in Case 2 made no progress in relation to the Academic dimension. Similarly, in the second week of Case 1 the tutor devoted a considerable amount of time to Dilemmas assistance, whereas in the remaining weeks this kind of assistance was notably less frequent, even though it did maintain a certain presence. As we have already noted, although the students in Case 1 made progress in relation to the Dilemmas dimension, this progress was considerably less than that achieved by their peers in Case 2. These results are consistent with an idea already put forward by several authors regarding the importance of the temporal dimension in the processes of educational assistance (Coll, Onrubia, & Mauri, 2008; Mercer, 2008; van de Pol, Volman, & Beishuizen, 2010): namely that in order to be effective, assistance must be sustained throughout the educational process (in our case the process of joint reflection) and must be adapted to or contingent upon the students' activity.

Some of the dimensions considered in this study remain unexplored in our analysis because students did not show progress in them, and tutors did not offer much assistance in relation to them. In our view, the most important of these dimensions is the Academic one, where we observed no progress among students and an absence of sustained assistance among tutors. This is clearly a limitation of our study, and should be a point of departure for future research. The small number of cases is another limitation. Further research is also required to examine in greater detail the relationships between assistance and progress; one focus for this research would be to test the hypotheses proposed above. Finally, we believe it is also necessary to characterize the nature of assistance in more detail, specifically by considering the turns taken by the tutor in relation to those taken by students. A key objective here would be to learn more about the effect of the tutor’s interventions and the distribution of talk among students and teacher in processes of joint reflection.

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Despite the limitations of this study, its findings contribute to the literature on teacher education and reflection by offering some insights into the characteristics of assistance that can improve students' reflection by means of joint reflection processes. Our exploratory results point to two such characteristics: 1) assistance should be focused particularly on what Dewey called "synthesis", since students do not seem to require much assistance with "analysis"; 2) the level of assistance given to a specific aspect of reflection (for example, to synthesis) should be sustained throughout the process if it is to have a substantial influence on students' reflection.

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