PRESERVICE TEACHERS' PRACTICAL KNOWLEDGE AS EMERGED FROM TEACHING LESSONS IN THE PRACTICUM

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Abstract

Teacher Education programs worldwide strive to guarantee high quality standards in the pre service teaching preparation by including both research and practical contents in their syllabi. However some research works have demonstrated that Student Teachers show limitations to fully understand and react to real situations in the school settings.

In this paper we present some of the results from a European Project (ACTTEA 2012-2015) which foremost purpose is to know how pre-service teachers learn from their practicum experience, that is to say, what kind of practical knowledge they activate when they engage in practical teaching situations.

Eighty seven Student Teachers participated in this study for Spain. Similar samples were gathered in the other partner countries: Finland, The Netherlands and Estonia. The task to be performed consisted in planning a lesson; delivering it and record it; watch the video-recording within two days; selecting two critical incidents (one positive and one negative) that could summarize the most important events of the lesson; and reflect over the incidents. For this last (analytical phase) three conditions were used: a. Individual reflection on action; b. peer reflection, and c. mentoring guided reflection. Participants were equally distributed to the conditions (27, 30 and 30 respectively).

Topical analysis was used to identify the emergent themes in the reflective dialogues. Kappa reliability tests confirmed the replicability of the analysis followed. Six categories were used to identify practical knowledge in the topics: recalls and appraisals (narrative knowledge), rules and artifacts (inferential knowledge) and practical reasoning and theoretical reasoning (explicative knowledge).

Main results indicate that the three conditions generated similar numbers of reflective comments (37.54% for individual reflection; and 31.22% for peer reflection and mentor reflection) however the type of knowledge followed a particular distribution: Narrative knowledge was significantly higher (203; 71.22%) than the other main two groups: explicative knowledge (70; 24.55%) or inferential knowledge (12; 4.2%). The implication out of it is that learning complex and generalizable practical knowledge (inferential knowledge) is more difficult to naturally prompt in reflective dialogues. Furthermore, it is even more difficult for Student Teachers to think of the ways the own-experience

(practical reasoning) or educational theories (theoretical reasoning) can justify the actions performed in classroom.

Keywords: Mentoring, Teacher Education, Teacher Reflection, Practicum.

0. INTRODUCTION

Teacher Education Programs worldwide are increasingly demanding high quality standards in the initial training of Student Teachers by combining both research and professional contents. Some student teachers' experiences indicate that it is not difficult to adapt the Teacher Education syllabus to the school situations.

The new structure of the studies of Education according to the European Higher Education Area (EHEA) positions the Practicum as a renewed opportunity to articulate the academic theories and the school reality which is mainly reflected in the portion of hours dedicated to this type of practical education. The Practicum in the Primary Education and Early Childhood undergraduate degrees comprises 50 ECTS.

In this regard, and giving its importance, the practicum is conceptualized as a set of professional and academic assignments that induces the student teachers to be aware of the responsibilities of being a teacher and the necessary knowledge to intervene in educational contexts and acquire specific competences.

1. THEORETICAL FRAMEWORK

Reflection has been advocated as a rigorous method to systematically reinforce the professional learning processes (Dewey, 1933; Schön, 1983; Hatton & Smith, 1995; Rodgers, 2002) that enables teachers to move from one experience into the next with deeper degrees of understanding (Leijen, Valtna, Leijen & Pedaste, 2012). Furthermore, teacher reflection upon direct experience from practice allows constructing valuable in-context knowledge (Elbaz, 1981; Clandinin, 1985).

However, the ultimate goal of reflection is blending theory and practice so that future teaching may become informed from actual teaching (Thomson & Pascal, 2012). In that important interrelation action-oriented knowledge plays a crucial role since it is related to all the beliefs and insights that are useful to practice (Verloop, Van Driel & Meijer, 2001)

Toom (2006) demonstrated that teachers mastered to describe their tacit pedagogical knowledge through critical reflection upon their own practice. Other research point out that practical knowledge can be elicited by elaborating conceptual maps or conducting interviews (Meijer, Verloop & Beijard, 1999, Meijer, Zanting & Verloop, 2002). In a more systematic attempt, Husu, Toom and Patrikainen (2008) designed the guided reflection procedure as a model that consists of identifying critical incidents in practice, that is to say, meaningful events from practice that implies a turning point or change within a particular phenomenon (Tripp, 1993). In this regard "Guided reflection is more than encouraging teachers to bring something to their minds" (Husu, Toom and Patrikanen, 2006, 4). For this study we have considered that guided reflection is a suitable method that helps student teachers to reach higher levels of reflection as well as to elicit professional practical knowledge. With regard to the latter, Mena, García & Tillema (2013) and Mena, García, Clarke & Barkatsas (2015) identified two major types of practical knowledge: narrative knowledge: recalls and rules and inferential: rules and artefacts. On the other hand Toom (2012) found a more sophisticated type of knowledge that demands more time and effort: explicative knowledge (including practical justifications and theoretical justifications). Please see table 1.

2. METHODOLOGY

The main objective of the project is to describe how Student Teachers learn from their own practice by recording, viewing and commenting their actions while teaching a lesson. In particular we aim at (1)

disclosing what type of pedagogical knowledge Student Teachers arise from their practice as teachers; (2) describing what types of pedagogical knowledge are favored under different reflective situations (individual reflection, peer reflection and student-mentor reflection).

The ultimate goal of the ACTTEA project is to increase the meaningfulness of teacher education programs by supporting student teachers' own knowledge construction that is based on their own practical experiences, the peer student teachers' comments and their mentors' guidance and instructions.

The task to be performed consisted in planning a lesson; delivering and recording it; watch the video-recording within two days; selecting two critical incidents (one positive and one negative) about the most important events of the lesson; and reflect over the incidents (Please see figure 1). For this last (analytical phase) three conditions were used: (a) Individual reflection on action; (b) peer reflection, and (c) mentor-guided reflection. Participants were equally distributed to the conditions (27, 30 and 30 respectively). At the end of the process the participant Student Teachers had to submit a personal reflection following the guidelines facilitated by Faculty Advisors at the University. The guidelines, as suggested by Toom (2012), invite to relate theory and practice in the different subjects of the practicum and to think beyond about what they learnt from the experience with the ultimate purpose of applying it in future teaching.
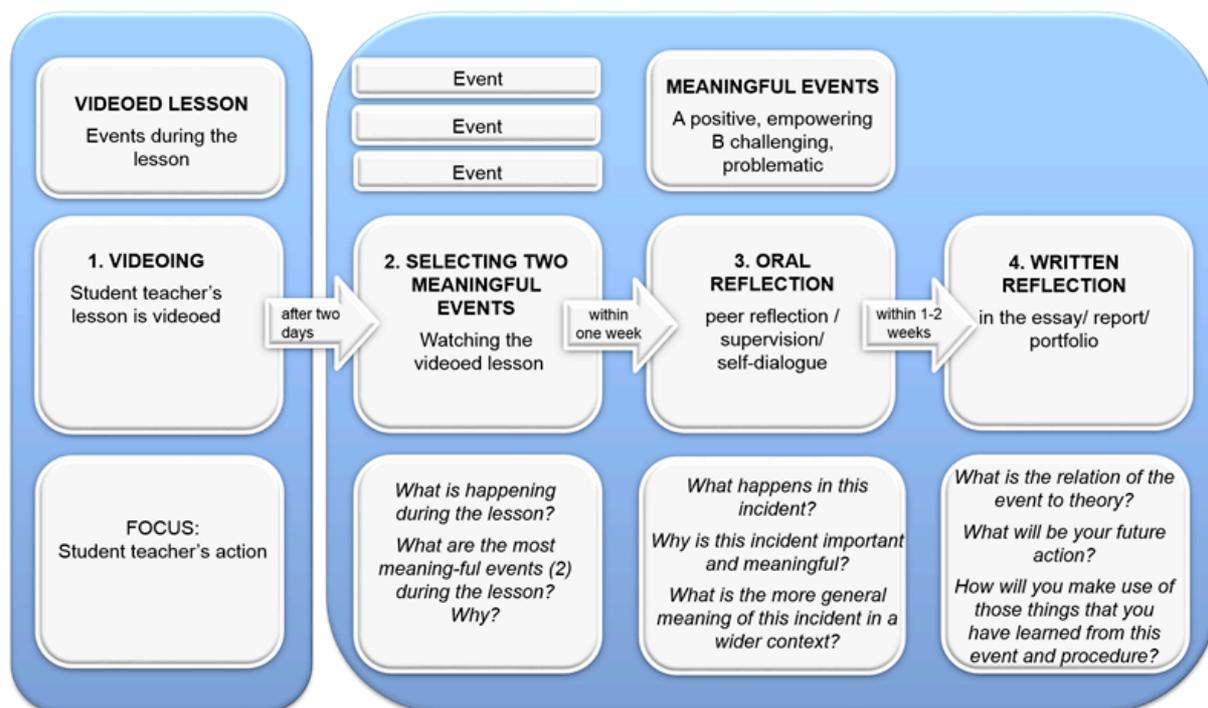
Furthermore, a video learning environment platform was developed to help student teachers and mentors to reflect over teaching and also to design learning assignments related to meaningful video excerpts of recorded lessons.

We chose a qualitative methodology for this study because our intention was to start from specific situations and local contexts in order to make later theorizations (Tójar 2006).

A first stage of the analysis consisted on selected 87 student teachers enrolled in Teacher Education courses (i.e., Degree of Primary Education) at the Faculty of Education in the University of Salamanca (Spain) and who received training lessons on the European ACTTEA project guided reflection procedure. The student teachers voluntarily participated on the study although they were also considered as an extra assignment for the practicum. The participants who reject to accomplish the task alleged to feel ashamed to be in front of a camera, lack of time, or overwork.

Ethical consents and approvals were requested for the participant Student Teachers, the school teachers and classroom students' families.

Figure 1. The ACTTEA Guided Reflection Procedure (Leijen et al., 2014). Based on Husu, Toom y Patrikainen (2008)

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VIDEOED LESSON Events during the lesson	Event Event Event	**MEANINGFUL EVENTS** A positive, empowering B challenging, problematic	
1. VIDEOING Student teacher's lesson is videoed	*after two days* → **2. SELECTING TWO MEANINGFUL EVENTS** Watching the videoed lesson	*within one week* → **3. ORAL REFLECTION** peer reflection / supervision/ self-dialogue	*within 1-2 weeks* → **4. WRITTEN REFLECTION** in the essay/ report/ portfolio
FOCUS: Student teacher's action	*What is happening during the lesson?* *What are the most meaning-ful events (2) during the lesson? Why?*	*What happens in this incident?* *Why is this incident important and meaningful?* *What is the more general meaning of this incident in a wider context?*	*What is the relation of the event to theory?* *What will be your future action?* *How will you make use of those things that you have learned from this event and procedure?*

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Topical analysis was used to identify the emergent themes in the reflective dialogues (Straus & Corbin, 1994). Kappa reliability tests confirmed the replicability of the analysis followed. The six categories above mentioned were used to identify practical knowledge in the topics: recalls and appraisals (narrative knowledge), rules and artifacts (inferential knowledge) and practical reasoning and theoretical reasoning (explicative knowledge).

Table 1. Description of the categories used in the present study: Mena, García, Clarke & Barkatsas, 2015; Toom, 2012; Fenstermacher, 1994; Knezic, Toom, Meijer, Leijen, Allas, Husu & Mena, 2013)

	Definition	*Example*
Recalls	direct reproductions of what has been experienced, that is to say, images from the lesson as recalled from memory	*"I changed the classroom distribution twice".*
Appraisals	constitute evaluations or value judgments of the action that is being recalled.	*"The round of questions was difficult because the students had not reviewed the contents"*
Rules or practical principles	Methodological strategies that student teachers extract from their experiences	*"It is important that pupils understand the story plot by associating each character with a single attribute".*

Artifacts	instruments and physical supports teachers envisage from what they have experienced		*"I would repeat the explanation at least twice: one at the beginning of the class and another one once they have done the exercises"*				
Practical justifications	Teachers give practical arguments for their claims based on their experiences		*"I called the pupil by name during the lesson, because it was the only possible way to gain her attention."*				
Theoretical justifications	Teachers give theory-related arguments for their claims based on their experiences.		*"I asked questions related to the math task, because I know that it is one way to guide pupil within her zone of proximal development."*				

4. RESULTS

As can be seen in Table 2 the three conditions generated similar numbers of reflective comments (37.54% for individual reflection; and 31.22% for peer reflection and mentor reflection) however the type of knowledge followed a particular distribution: Narrative knowledge (recalls and appraisals) was significantly higher (203; 71.22%) than the other main two groups. Explicative knowledge (rules and artifacts) concentrated 24.55% of the content of the Student Teachers' reflection whereas Inferential knowledge implied just 4.2% of the reflective speech.

Table 2: Pedagogical practical knowledge arisen by three different types of reflection (Individual, peer and mentor-guided reflection)

	Recall	*Appraissals*	*Rules*	*Artifacts*	*Practical Reasoning*	*Theoretical Reasoning*	Total Number of fragments
Individual reflection	41 (14.38%)	26 (9.12%)	19 (6.66%)	18 (6.31%)	0 (0%)	3 (1.05%)	107 (37.54%)
Peer reflection	48 (16.84%)	27 (9.47%)	5 (1.75%)	4 (1.40%)	5 (1.75)	0 (0%)	89 (31.22%)
Mentor-guided reflection	40 (14.03%)	21 (7.36%)	10 (3.5%)	14 (4.91%)	2 (0.70%)	2 (0.70%)	89 (31.22%)
Total	129 (45.26%)	74 (25.96%)	34 (11.92%)	36 (12.63%)	7 (2.45%)	5 (1.75%)	285 (100%)

It is also remarkable that there were no topics classified under the category of practical reasoning and only three (1.05%) for theoretical justifications in the individual reflection condition. Similarly in the peer reflection and mentor-student reflection condition both practical and theoretical reasoning do not surpass 1% of all the contents emerged from them. Recalls constituted the highest portion of the reflection in all conditions with around 15% of the practical knowledge.

On the other hand an exact number of reflective fragments were found both in the peer reflection condition and mentor-student reflection condition (89; 31.22%). In these two conditions a similar distribution of the practical knowledge was also found. This leads to understand that collaborative

reflection may raise different patterns of practical knowledge than individual reflection. The differences are also noticeable in the case of rules and artifacts. More specifically 18 artifacts (6.31%) and 19 rules (6.66%) were raised in the individual reflection condition whereas four (1.40%) and five (1.75%) and 14 (4.91%) and 10 (3.5%) were respectively inferred in peer reflections and mentor-guided reflections.

5. CONCLUSIONS

In sum the study evidenced that generalizable practical knowledge (inferential knowledge) is more difficult to be naturally prompted in reflective dialogues. Furthermore, it is even more difficult for Student Teachers to find the reasons to explicate the actions performed in the classroom according to their own-experience (practical reasoning) or educational theories (theoretical reasoning).

These results may suggest that conversations with mentors prompted the Student Teachers introduce changes in their future practice whereas individual reflections and peer reflections lead them to understand it better. Consequently, envisaging a specific plan for the practicum that includes in service teachers' strategies and other forms of practical knowledge might increase their educational quality and the acquisition of teaching professional competences.

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