

Reflection and Its Role in the Development of Pedagogical Content Knowledge

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INTRODUCTION

Reflection and reflective practice has been a concept promoted in teaching and teacher education for the last few decades. Also, it is believed that reflective competence of a teacher contributes to the quality of his overall performance (Korthagen 2001) and fosters the process of amalgamation or encapsulation (Bromme 2008) of his knowledge which stems from different fields of study (e.g. psychology, general pedagogy and didactics, field didactics and content knowledge). This amalgam which integrates teacher knowledge of pedagogy and of the content he teaches to his students is a unique type of knowledge that distinguishes teachers from other experts in the same field. Since the late 1980s it has been researched under the heading of pedagogical content knowledge (PCK). The aim of our research is to shed light on whether and how these two concepts, i.e. reflective competence and pedagogical knowledge are related.

Definition of key terms and their conceptualization

PCK (pedagogical content knowledge)

- a category of teacher knowledge based on the knowledge of content and didactics which when integrated enables the teacher to manage the teaching/learning process effectively (Shulman 1986);
- a three-dimensional model of PCK used in our research distinguishes three layers of knowledge within the construct of PCK: content knowledge, knowledge of students' thinking and knowledge of didactic strategies (Rowan, Ball, Miller 2001).

Reflection

- a specific kind of thinking with four attributes: reflection as a meaning-making process; as a systematic, disciplined thinking; which takes place in interaction with other participants; who pursue intellectual growth;
- a five-level scale inspired by Hatton and Smith (1995) used in our research.

| Leves of reflection | Characteristics |
|--|---|
| 1. Technical reflection (decision-making about immediate behaviors or skills), drawn from given theory base, but always interpreted in light of personal worries and previous experience. | Beginning to examine (usually with peers) one's use of essential skills or competencies as often applied in controlled, small scale settings. |
| 2. Descriptive (social efficiency, developmental, personalistic), seeking what is seen as best possible practice. | Analysing one's performance in the professional role (alone), giving reasons for actions taken. |
| 3. Dialogic (deliberative, cognitive, narrative) weighing competing claims and viewpoints, and then exploring alternative solutions. | Hearing one's own voice (alone or with another) exploring alternative ways to solve problems in a professional situation. |
| 4. Critical (social, reconstructionist), seeing as problematic, according to critical criteria, the goals and practices of one's profession. | Thinking about the effects upon others of one's own actions, taking account of social, political and cultural sources. |
| 5. Contextualization of multiple viewpoints drawing on any of the possibilities below applied to situations as they are actually taking place. | Dealing with on-the-spot professional problems as they arise (thinking can be recalled and then shared with others later). |

Research questions

The aim of the research is to find out whether the level of reflective thinking in student teachers of the English language affects the way in which pedagogical content knowledge develops, and whether the advancement of reflective thinking contributes to the development of PCK.

- 1) What is the quality of PCK in student teachers of English prior to the intervention?
- 2) What is the quality of PCK in student teachers of English after the intervention?
- 3) Which characteristics can be found in student teachers' reflection prior to the intervention?
- 4) Which characteristics can be found in student teachers' reflection after the intervention?
- 5) Is there any relation between the characteristics of reflection and the nature of PCK in individual students?

Pre-research and its phases

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|-------------|---|
| Week 1 | I. Questionnaire designed to identify the initial nature of students' PCK II. Video-sequence analysis I: a) Teaching vocabulary b) Teaching grammar |
| Week 2 | III. Reflective/clinical writing 1 |
| Week 3 - 10 | Intervention (reflective seminar, methodology course, observations and teaching practice, reflective journal) |
| Week 11 | IV. Reflective/clinical writing 2 |
| Week 12 | V. Questionnaire designed to identify the final nature of students' PCK VI. Video-sequence analysis 2: a) Teaching vocabulary b) Teaching grammar |

Tools of data collection

Before the intervention

- I. A set of open questions designed to reveal the nature of student teachers' PCK before the intervention in three areas: teaching vocabulary, teaching grammar and classroom management;
- II. A written, unstructured analysis of a 2,5 min. video-sequence. Students were asked to analyse a video-sequence where vocabulary and grammar were taught. Their analyses were compared in order to find out which of the two themes is more suitable when researching PCK;
- III. Students keep reflective diaries where they reflect on their teaching practice, framed by several tasks. The text of the diaries is analysed both for the characteristics of PCK and levels and characteristics of reflection.

Sample task:

Read the two enclosed articles. Compare the suggestions given and create your own checklist of classroom management techniques.

S.F. Rief: Checklist for Teachers – Classroom Management

Gower, R., Phillips, D., Walters, S.: Chapter 2: Managing the class in *Teaching practice handbook*, pp. 8 -62

Observe a minimum of three different English classes and write which of the techniques mentioned in your list teachers used most often and in what situations they used them. Note down your observations in your journal.

Try to implement your list in your own teaching. Are they easy to be implemented, do they work...? Reflect on their use after the lessons.

After the intervention

- IV. A set of open questions designed to reveal the nature of students teachers' PCK after the intervention;
- V. A written, unstructured analysis of a 2,5 min. video-sequence where teaching vocabulary and teaching grammar were demonstrated.
- VI. The text of students' reflective diaries from the last week of their teaching practice.

Data analysis and suggestions for adjustments of the research tools

- open coding within the dimensions of PCK
- a priori given categories for the levels of reflection
- research tool no. 1 and 2 – elicited data prevalingly from the dimension of the knowledge of didactic strategies
- suggestions for tool no. 1 – a concrete scenario, highly contextualized
- open coding substituted with a priori formed categorial system within individual dimensions of PCK; inductive approach substituted with deductive
- research tool no. 3 – open coding within the dimensions of PCK; text coded for the categories of the level of reflection
- the main characteristics of reflective thinking (descriptive, authority-dependent, strong influence of mentor teachers, absence of students' own initiative)
- highly contextualised content in reflective diaries.

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