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Cognitive apprenticeship as a tool for materials development in an EFL teacher education project

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Abstract

A major problem in teacher education is the gap between theory and practice. Engaging student teachers in materials development is one way to integrate theory and practice in EFL (English as a Foreign Language) teacher education. It is during the complex process of materials development that student teachers start to envision learning processes and outcomes of specific language learning tasks. However, materials development does not take care of itself. It is argued that methods of cognitive apprenticeship can be a tool to support student teachers in the complex process of materials development. Cognitive apprenticeship is about modelling and verbalizing the internal cognitive processes underlying complex problem-solving tasks such as adapting authentic materials and writing rubrics. This paper reports how these methods are applied in an EFL teacher education project on materials development. Engaging student teachers in materials development can be a worthwhile opportunity-to-learn in university-based teacher education for any subject whatsoever.

Keywords: *Cognitive apprenticeship; EFL; teacher education; materials development.*

1. Introduction

Teacher education in Germany is organised in an applied science model in which student teachers are first introduced to theoretical knowledge in literature and cultural studies, applied linguistics and TEFL or subject didactics respectively. This model implies that theoretical knowledge from the first phase of education will "mediate to their teaching practice at some point in the future" (Hüttner & Smit, 2012, p. 165). Yet, as many teacher students and teacher trainees report and experience, the gap is not automatically bridged once they enter school based teacher training. Experiential approaches with "contextualized simulations in which the trainee teachers have to adapt materials for a specific learning context" (Tomlinson & Mashura, 2018, p. 105) can actually help to bridge this gap between theory and practice. However, so far courses in material design and evaluation are scarce in teacher preparations programmes (Garton & Graves, 2014). Materials development is in general a rather neglected area in teacher education and often student teachers are left alone with some "very general guidelines for choosing materials" (Hüttner & Smit, 2012, p 167).

This paper describes one project that attempts to narrow the gap between theory and practice by integrating a materials development module in university-based English as a Foreign Language (EFL) teacher education. In this module student teachers are assigned to select authentic materials (e.g. short films from YouTube) and design tasks for comprehension, analysis and production. It is argued that student teachers need support for this rather complex undertaking. This support is realized by cognitive apprenticeship methods which e.g. model products and scaffold the process of materials development.

2. Materials development and task design in teacher education

Since the mid 1990s there is a growing interest in materials development "both as a field of academic study and as a practical undertaking" (Tomlinson & Mashura, 2018, p. vii). According to Tomlinson (2012) "materials development refers to all the processes made use of by practitioners who produce and/or use materials for language learning" (p. 143). Materials development can result in a "deeper understanding of the individual teaching circumstances surrounding theory and practice"; as student teachers "question and test relevant theory in practice" (Canniveng & Martinez, 2003, p. 480) the quality of reflection is enhanced. In this paper materials development is conceptualized as the whole process from material selection to adaptation and writing rubrics for tasks. The actual process of writing the rubrics for tasks is defined as task design. When practicing materials development student teachers automatically change perspective when designing tasks for learning in the EFL classroom. They anticipate comprehension and production problems, come up with options for material presentation and adaptations. There is common agreement among researchers in the field "that authentic materials can provide meaningful

exposure to language as it is actually used, motivate learners and help them develop a range of communicative competencies and enhance positive attitudes towards the learning of a language" (Tomlinson, 2012, p. 161). In other words it is assumed that student teachers "develop positively as a result of their involvement in materials development" (Tomlinson, 2012, p. 171).

Asking student teachers to be involved in materials development and design tasks for the classroom is a learning opportunity that connects theory-based teacher education with the affordances of professional practice. Hüttner and Smit (2012, p. 167) point out that materials development brings together theoretical knowledge, teacher cognition and teacher experience. Engaging student teachers in materials development is a situated learning experience: In materials development it is essential to think about content, processes and scaffolding that is needed for learners to accomplish the given task in the end and exploit the given material fully in terms of comprehension, vocabulary acquisition and communicative stimulus. However, student teachers are novices in the field and therefore need to be guided along the complex process of materials development and task design in particular.

3. Cognitive apprenticeship

Cognitive apprenticeship (Collins, Brown, & Newman, 1989) offers some opportunities to help students engage in materials development. As Collins, Brown, and Newman (1989) argue, learning contexts in tertiary education differ from an apprenticeship as they often focus on cognitive processes rather than on specific physical actions. While the skills and techniques e.g. of a plumber can be observed, cognitive and metacognitive processes have to be made visible (or audible) before students can reproduce them, which is a prerequisite for receiving corrective feedback.

Collins, Brown, and Newman (1989) outline several methods to foster cognitive and metacognitive learning processes in diverse subject areas (e.g. reading; De La Paz et al., 2016). In the following, we give an overview of the six methods and explain how these methods are used during in an EFL teacher education project.

Modelling: As cognitive processes are internal, the teacher externalizes his heuristics and strategies for problem solving. In our course, we demonstrate the analysis of several materials (e.g. a clip from TV series) and explain the process of classifying materials as suitable or not suitable for the EFL classroom.

Coaching: The teacher observes his students while they carry out a task and offers feedback, hints etc. which aim at "bringing their performance closer to expert performance" (Collins, Brown, & Newman, 1989, p. 481). Such coaching is realized through interactions

that are "immediately related to specific events or problems that arise as the student attempts to carry out the target task" (Collins, Brown, & Newman, 1989, pp. 481-482). In our project, student teachers discuss their ideas while working on a task in pairs while the teachers talk to the groups individually, giving them hints when needed.

Scaffolding: The teacher offers support in the form of suggestions or material support (e.g. cue cards). When the teacher recognizes that a student is not able to solve a certain aspect of a task, the students and the teacher solve problems in a cooperative way. A method that is used in this context is 'fading'. While working on a task scaffolding is reduced gradually by the teacher. In our EFL teacher education project, student teachers receive scaffolding via checklists for analyzing the materials and criteria of selection. A task template is provided in order to help students document the process and keep track of their progress while designing EFL materials.

Articulation: The teacher prompts the students to articulate their thoughts and heuristics. This can be done in a number of ways:

a. by looking at the products of their peers, e.g. by asking the students why a material is suitable,
b. by asking the students to articulate their thoughts while they are solving a task, or
c. by asking the students to act as "critical friend" for each other. In our course, some of the students' tasks are simulated in order to identify possible problems while solving them.

Reflection: When the task (here: materials development) is accomplished and solutions to problems have been found, the teacher and the students reflect upon the process. This can be realized by verbalizing the problem-solving process (e.g. student teachers explain their decisions for adapting and annotating the material) or by referring back to the documentation (here: task template) of the steps undertaken during the entire process of materials development. In our course, the students present their results and explain how they managed to turn an authentic material into an EFL learning resource.

Exploration: In this stage the learner is able to accomplish tasks and solve problems independently. The teacher offers a task/problem the students have to solve on their own. As students are not able to solve tasks without prior knowledge, this method includes presenting exploration strategies to the students. In our course, students choose the materials they want to use as the basis for their materials development after explaining several heuristics for material selection.

4. Description of the project

Our project-based seminar consists of eight interrelated lesson units and aims at achieving two core objectives: in this project,

1) students learn how to select appropriate materials that can be used in the EFL classroom
2) students learn how to design concrete, competence-oriented tasks for use in EFL classrooms

With these objectives in mind, the seminar is structured as shown in table 1.

Table 1. Structure of the seminar

Unit I & II	**Introduction/ Theoretical and methodological foundations** · Introduction to different media formats and genres · Overview over copyright legislations · Analysing the didactic potential of materials for the EFL Classroom **Selection of material** · Selection and didactic evaluation of materials in small groups
Unit III & IV	**From materials to tasks** · Workshop on task design · Concrete advice on chosen materials and planned tasks **Continuation of task design in groups** · Developing competence-based tasks based on chosen material · Documenting the work in progress in form of a task template
Unit V & VI	**Presentation of preliminary results** · Group presentation of results · Feedback based on criteria of task design **Development of final task version**
Unit VII & VIII	**Presentation & discussion of final tasks** · Simulating tasks in class · Presentation of final results · Feedback based on criteria of task design

In the first two units, students are provided with some theoretical and methodological background knowledge. They get to know basic concepts that help them analyse various media formats and genres, and acquire knowledge on copyright legislations. In this early

phase of the project, students gain general input on how to work with materials in the EFL classroom, including thoughts on how to incorporate materials in the school curriculum and on how to offer appropriate scaffolding for using materials in a heterogenous group of learners. Finally, the first two units end with a best-practice demonstration: with the help of an episodes of *How I met your Mother*, students encounter a step-by-step example of the didactic process necessary to prepare authentic materials for use in the EFL classroom.

Equipped with the background knowledge from the first two units, students are then asked to choose their own material. For that matter, they work together in small groups and, within the timespan of roughly three weeks, select a material that fits the curricular standards discussed at the beginning of the project. Once they have found a material, each group writes a short description of it, which is subsequently uploaded on an e-learning platform, so that students can give constructive feedback on each other's choices.

After this phase of researching an appropriate material in small groups, students have the chance to plan and design concrete tasks on their own in unit three and four. To that end, in the form of a workshop, students first learn about the dos and don'ts of task design, different task formats (from analytic to action and production oriented) and different phases (pre-, while-, post-) in which tasks are usually used in the EFL classroom. Then, students once again get together in their groups to start designing their tasks, based on the material they previously selected. In this phase of the project, it is important that the instructors function as 'facilitators' who guide the individual groups in their materials development by providing specific feedback and didactic scaffolding along the way.

In the weeks following unit three and four, students have the chance to keep working on their individual tasks. In this phase, most importantly, the different groups document their work in progress in a task template. Here, students are requested to reflect upon the following aspects:

a. the structure of their material
b. potential problems that might occur when using this material in the classroom
c. the main goals of their individual tasks

Based on these considerations, in unit five and six students are given the opportunity to present the preliminary results of their material analysis in front of the entire class.

Before students present their final task versions in unit seven and eight, they can use the feedback given after the preliminary presentation to revise and edit their original tasks. Then, in the last two units, they present their results again and, more specifically, simulate some of the tasks they created. As such, the presenters temporarily become the teachers and can practice how to guide classroom interactions. After this simulation, the individual groups get feedback from the entire class once again, which helps them to review some

aspects of their tasks one last time. Thus, in the end the project relies on two rounds of feedback that make students aware of the process-nature of task design and allows the instructors to support and comment on the students' work process in several phases.

5. Conclusion

Materials design can be seen as an enrichment of teacher preparation programmes in which participants not only theoretically learn about adaptation of materials but actually adapt the materials. Materials development appears to 'give life' to theory in the language classroom. The experience in our EFL teacher education project disproves the assumption that materials development and task design take care of themselves. Cognitive apprenticeship offers useful methods that can support student teachers when they take their first steps in materials development. Student teachers draw on their theoretical (pedagogical content) knowledge to explain decisions for adapting the material and for designing specific tasks for comprehension, analysis or production. As student teachers explain and reflect upon their strategies, choices and ideas, student teachers are enabled to solve the specific problems which occur during material analysis and subsequent task design. Cognitive apprenticeship thus helps to narrow the gap between theory and practice in university-based teacher education.

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