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Developing Beginner University Teachers' Pedagogical Competencies Through a Professional Development Program

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Introduction

This chapter focuses on improving the pedagogical competencies of university teachers through participation in a professional development program. Firstly, we describe our academic professional development center and its mission and structure. Secondly, we describe the objectives, methods, and findings of initial empirical research conducted on beginning university teachers and their approaches to teaching and professional self-perceptions. This research project was conducted to analyze how researchers, teachers, and teacher-researchers approach teaching. We identified three different sets of beliefs about teaching among early-career faculty members who each conceived of their roles differently: researchers emphasized the transmission of knowledge, while teachers emphasized that good teaching should include devoting time and energy to students and universalists emphasized the practical nature of knowledge and motivated students to work by themselves. The research outcomes substantially informed the professional development program that was subsequently established. Finally, we describe this four-module professional

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development program in more detail, including the curriculum design process, how we teach beginner university teachers, issues with funding for training university teachers, and the feedback we have received from program participants.

About the Center

The Pedagogical Competence Development Centre (CERPEK) of Masaryk University (MUNI) in Brno, Czech Republic, was founded in 2017 as a component of the Academic Affairs Office of the Rector's Office (MUNI, n.d.). Since 2019, it has been an independent center that reports directly to the vice-rector for academic affairs. The CERPEK is a professional center that covers the needs of the entire university. Its goal is to systematically and continually improve the pedagogical competencies of university teachers based on traditional knowledge and modern trends, as well as on modern local and international educational research. Thus, the CERPEK contributes to improving and maintaining the quality and effectiveness of university teaching and improving student success rates. It is the only center of its type, not only at MUNI, but in the entire Czech Republic (Mudrak et al., 2018; Pabian et al., 2011).

The CERPEK is, at present, a relatively small center with three employees, including a director with a full-time-equivalent (FTE) workload of 1.0 and two project administrators, each with an FTE workload of 0.5, who also work on a project funded by the European Union's European Structural and Investment Fund and the Czech Republic's Ministry of Education, Youth and Sports. Additionally, around 40–50 external staff members (including lecturers, experts, mentors, and support staff) are involved in CERPEK' activities every year. In addition, the CERPEK receives limited university funding to provide workshops focused on specific topics. An advisory board ensures that CERPEK's activities and goals are in keeping with the university's strategic plans.

MUNI founded the CERPEK in response to global trends recognizing the importance of teaching excellence at universities, where teaching is considered to be an activity that is equally as important as science and research. Universities traditionally combine science and research with teaching, and there is a commonly held belief that the best researchers are also the best teachers. In reality, however, this idea is not so straightforward. Whereas young academics in the Czech Republic are well-prepared for research careers during their studies, as a rule they are not prepared at all for their teaching careers (Johannes et al., 2013).

Although Czech university teachers have excellent knowledge of the specific contents of their respective fields, they tend to lack didactic knowledge of this content.

In addition, universities often recruit teachers from the ranks of their doctoral students, who acquire pedagogical competencies in a nonsystematic manner and who often establish poor teaching habits based on a lack of reflective observation or using a trial-and-error method (Anderson & Anderson, 2012; Golde, 2008; Hativa et al., 2001; Iglesias-Martínez et al., 2014; Tůma & Knecht, 2019). This state of affairs makes it difficult to improve the quality of university teaching, and this is where the CERPEK comes in: its objective is to eliminate such problems by providing systematic pedagogical instruction to faculty.

Initial Empirical Research on Beginner University Teachers

In 2015, university leaders agreed on the need to develop a strategy for educating academic staff at MUNI that focused on developing their pedagogical competencies. Although this strategy was supposed to draw from foreign experience, examples of good practice, and empirical studies, it was to be based primarily on research conducted by MUNI researchers on early-career academics working at the university (Čejková, 2017; Šeďová et al., 2016). To collect these data, we conducted a research project on early-career faculty members' perceptions of themselves as professionals and their beliefs about teaching.

Methods, Data Collection, and Data Analysis

The empirical research was conducted between September and November 2015. We posed the following two research questions: (1) *What are beginning university teachers' approaches to teaching?* and (2) *What is the relationship between beginning university teachers' approaches to teaching and their professional self-perception?*

In the first step of our study, we defined beginner teachers at MUNI as those who had less than five years of experience (Berliner, 1986). We decided to use purposive sampling because of the qualitative research design. To choose our sample from the total population of 200 beginner teachers at MUNI, we applied further criteria that indicated how successful these

teachers were, determined by how the teachers were evaluated in student course assessments. Applying this criterion, we selected a sample of 30 teachers distributed among all nine of MUNI's faculties. We chose only teachers who were evaluated as above average by their students in course evaluations, as well as those who actually taught at least one course. We contacted each teacher individually by e-mail and asked if they would like to take part in our study. In the end, we had 19 respondents, of which 14 were male and five female.

Given the research questions, we chose to collect data using in-depth, semi-structured interviews. We created a checklist of 13 open-ended questions that focused on the work of university teachers, including their conceptions of teaching, their self-concept, their working conditions, how they viewed support from their departments, and their educational needs. The objectives and nature of the study were explained to the respondents.

In total, we conducted interviews that were on average 80 minutes long with each of the 19 respondents. We assured the respondents that the information they supplied to us would be kept confidential, and we promised them that all data would be anonymized (including not only the respondents themselves, but all other names and specific information mentioned so that other individuals could not be identified). The interviews were recorded on a voice recorder and subsequently transcribed following the same principles.

Interview transcripts were on average 30 pages in length; our total data corpus consisted of more than 570 pages of text. We analyzed our data using ATLAS.ti 7.0 software and coded it in two steps. First, four different researchers coded four interviews using the method of inductive open-coding. The authors then compared the codes they used and defined a set of categories that included all codes.

Research Results

Based on our analysis, we identified three categories of perceptions about what constitutes "good teaching." From a theoretical standpoint, it is interesting to note that these conceptions corresponded with the professional self-concepts of early-career academics at MU. In this section, we will describe the three self-concepts we discovered (universalists, researchers, teachers) and the conceptions of good teaching associated with each group. The dividing line between these self-concepts runs down the middle of the double role performed by university-based academics—according to the common view, they should be both excellent researchers and enthusiastic teachers.

Universalists Want to Apply Knowledge in a Practical Way

Eight of our respondents were defined as universalists who straddled the line between teaching and research:

> The way I see it, is that it is roughly balanced and that [these activities] mutually benefit each other. If I was ever just a teacher, then I wouldn't have any growth, so what could I actually teach? At the same time, if I was only a researcher, well, it's nice to write papers, but what's the result? Knowledge needs to be passed on. (Respondent 1, Empirical Study on Early-career Faculty Members' Self-perceptions)

This quote clearly indicates that, in this self-concept, one role legitimatizes the other—teaching that is not based on one's own research experience is viewed as lacking in substance, whereas conducting research without teaching is seen as self-serving. This synergetic interaction between research and teaching was often considered to be ideal. The desires of universalists essentially correspond with the ideal profile of academic staff presented in Mägi and Beerkens's study (2016)—they take teaching seriously, but they slightly prefer research. Universalists in our study usually reported that they taught more than they would like, with some exceptions. They attributed this to the fact that they were at the beginning of their academic careers.

Universalists conceived of teaching as a way to apply knowledge in practice. A good teacher should have experience gained in the "real world," outside of a university setting. One respondent stated: "A teacher shouldn't be disconnected from reality, from real practice. He should somehow be in contact with that practice." Another claimed that "my main advantage is that I have clinical experience. So, I can figure out what is important and what's not. What the students will face and what they won't face and so on." These words indicate that practical experience can influence the curriculum—in teaching, the universalists viewed some information as useful and prioritized it, whereas they downplayed other information. Universalists valued examples and advice that teachers give based on their own experiences. They saw this as the ultimate form of legitimization. The concept of applied teaching can also involve preparing students for their jobs. A third respondent led a seminar focused on skills for future teachers: "The seminar is essentially structured in such a way that a major part is devoted to practical exercises in which the students have to present to the group." Teachers that led such applied courses often saw them as more valuable than the other courses they taught.

Teachers Want to Energize/Activate Students

More than half of our respondents indicated a clear preference for either research or teaching. Seven of them stated that they preferred teaching, although they recognized that research activities are monitored and evaluated more intensely than teaching activities. Early-career academics who preferred teaching spoke about research as something essential for being able to continue working at the university. For them, research was a "pass" that gained them access to students:

> I see my mission as being a teacher. Like just being with students. Now I am at a point in my life where the department head has promised management that I will defend my habilitation thesis. I spent some time at home and cobbled together some Register of R&D Results points. But I view my role as that of a teacher. (Respondent 2, Empirical Study on Early-career Faculty Members' Self-perceptions)

From this quote, it is evident that whereas teaching was viewed as a mission by the individual, the pressure to develop as a researcher came from the outside ("the department head has promised management"). Publishing is not considered an opportunity to inform peers about interesting research, but as a necessity. Those who preferred teaching were not interested in the research itself, but in how many points they received for it when it was evaluated. These respondents did not value their research activities (for instance, when speaking about them, they used terms such as "struggle" and "cobble together"); in contrast they considered themselves to be excellent teachers:

> I admit that I enjoy teaching, I enjoy discussing with these students. I like to prepare the lectures, and I am glad that students and colleagues appreciate that I am good at it. I also enjoy doing scientific research, but I'd say I'm struggling with it somehow. (Respondent 4, Empirical Study on Early-career Faculty Members' Self-perceptions)

Teachers, unlike researchers or universalists, greatly emphasized the energy they invested in their students. Teachers understood university-level teaching to be first and foremost aimed at students and their needs. This manifested in two ways. The first was found in the ability to captivate students during lectures:

> A teacher should be a bit into their work so that they can transfer their energy to others. I have pretty good experience with that, when the kids are, say, tired and I have to try all the harder and they respond well to that, yeah. So, like sometimes I manage to captivate them. (Respondent 5, Empirical Study on Early-career Faculty Members' Self-perceptions)

Here, the point was to present materials with such energy and enthusiasm that this enthusiasm was transferred to the students. Another way such teachers expressed their enthusiasm was their willingness to be there for students when they needed help:

> I am very accommodating to my students. Hmm … So, you as a person, when they show some interest, or when they want help with something, so you just help, and essentially, if I can just say it, they can write me almost whenever, and I will answer their e-mail, usually immediately or with just a slight delay. For me, it's not true that I just talk to my students during office hours and otherwise they shouldn't come to see me or write to me (Respondent 6, Empirical Study on Early-career Faculty Members' Self-perceptions).

This approach to teaching was marked by the teacher's willingness to dedicate more time to students and to be available outside of the classroom and office hours. Investing energy in teaching did not mean only going above and beyond for students, but also making efforts to meet the students' needs, for example, by adjusting the pace of lectures or even modifying the curriculum.

Researchers Want to Transfer Knowledge

Four of our respondents considered themselves to be primarily researchers. These respondents mentioned not only their preference for research, but also the time they put into it. One respondent stated: "For me, research is the primary thing. I do teach, and I do like it and it seems like a good supplement." Another admitted: "I am primarily a researcher and not a teacher. Simply put, ninety percent of my time, or ninety-five percent of my time, is research." Unlike universalists, these respondents spent more time on research than on teaching. Either they worked overtime, or their department allowed them to teach less.

As mentioned previously, the respondents that preferred teaching did not value their own research activities and considered research to be one of their weak points. We observed similar uncertainties about teaching among respondents who preferred research:

> Of course, I am aware of the fact that I am not a teacher. I don't think that I am one, and I don't think that it is my only role. But on the other hand, I realize that I am not at the academy of sciences, that I am at a university, which is a research and educational institution. So, if someone doesn't like students and doesn't like teaching, then what is that person doing at a university? But at the same time, I realize that I am not here as a teacher. I am here as a researcher, but I think that I haven't fully found the boundaries. (Respondent 7, Empirical Study on Early-career Faculty Members' Self-perceptions)

This respondent considered himself to be a high-quality researcher who also had a positive attitude toward teaching. The only prerequisites for teaching that he mentioned were *liking* students and teaching. But, according to him, having inadequate pedagogical competencies at a university was acceptable, whereas having poor research skills was not. For him, university students should *understand* and tolerate the weaknesses of teachers. Following this logic, teaching skills were not a necessary condition, but something extra without which university students should be able to manage.

Researchers emphasized that university teachers must possess expert knowledge and, ideally, should be leading figures in their fields or specializations. At the same time, they must be able to simply and coherently present this knowledge to students or create learning materials that incorporate this knowledge. For example, one respondent said the following about himself: "Students rate me highly as an expert, and on top of that, the way I transfer [my knowledge] to them is very accessible." Many of the respondents indicated that having expert knowledge is the most crucial quality of a teacher. These early-career researchers emphasized that, in terms of knowledge, teachers must "tower above their students at all times during lectures." If they do not, "students immediately recognize that [the teacher] doesn't know what they are talking about." These researchers also focused on the comprehensibility of their lectures. This approach could best be described as transmissive teaching. In this conception, the teacher is central, and the role of students is to receive the information that has been presented to them (Kember & Kwan, 2000; Trigwell & Prosser, 1996). Therefore, high-quality teaching materials that clearly present all the information that the teacher expects students to know must be produced.

Discussions of Research Results

There is a broad range of ideas about what constitutes good university-level teaching. Lowman (1995) created a two-dimensional model of effective

university-level teaching. The first dimension comprises intellectual excitement; the second, the creation of interpersonal rapport with students. The intellectual dimension includes the clarity with which a teacher presents materials and the teacher's ability to stimulate and captivate students. The interpersonal element consists of the teacher's ability to communicate in a way that improves student motivation and enjoyment of learning.

Our findings indicate that there is a pronounced difference in how early-career researchers and teachers at MUNI view good teaching. Whereas academics who considered themselves to be primarily researchers wished to pass on their knowledge because universities are elite educational institutions and teachers possess the greatest expertise, those who thought of themselves primarily as teachers wanted to devote themselves to their students, take care of them, and spark their enthusiasm for the subject being taught.

This reveals new insights into academics' thought processes and behaviors; in our interviews, we discovered that different conceptions of what constitutes good teaching can have dramatically different impacts on courses taught by beginner teachers. For example, those who considered themselves to be researchers felt it was important for their lectures to be perfect, and they had the narrowest understanding of what teaching is. In contrast, universalists had the most progressive views about teaching. These academics tried to apply their knowledge in practice, but they also put effort into interacting with students. This finding is in tune with Mägi and Beerkense's (2016) claim that the ideal academic's professional identity is grounded in both teaching and research, although with a very slight preference for research. In the contemporary, international scholarly discourse, student-focused teaching is highly valued (Kember & Kwan, 2000; Trigwell & Prosser, 1996), and therefore, it seems as if the approach of the universalists is most compatible with this conception of teaching.

Our findings differ substantially from those reported at foreign universities where there is a high degree of separation between research and teaching activities and where senior faculty members tend to hold research positions (Austin, 2002; Geschwind & Broström, 2015; Smith & Smith, 2012). None of our respondents, for example, indicated that their position prevented them from conducting research. In contrast, those who considered themselves to be teachers felt pressure to conduct research. Their focus on teaching was the result of their own intrinsic interests.

The Pedagogical Competencies Development Program

Based on an analysis of the data we collected, we defined three critical areas of educational needs expressed by beginning teachers: the *fundamentals* of university-level pedagogy and didactics, *course preparation and design*, and *communicating with and engaging students* in the classroom. Our empirical study was in large part the basis for a new professional development program—the Pedagogical Competencies Development Program—which was established in 2017 and has thus far provided training to 69 participants.

The Pedagogical Competencies Development Program was developed mainly to respond to these educational needs. The lecturers who guide participants through the development program aim to produce teachers who could be best described as reflective practitioners who respond to the educational needs of their students. This means, among other things, that teachers consciously focus on the contents of their lessons and that—thanks to a deep understanding of their field—they are able to select the most essential subject matter to teach; respond to student feedback; base their courses on the experience of students; and treat students as active contributors to course creation. They seek the roots of student success and failure in their own behavior and actions, not just in those of the students, are willing to share examples of good practice and failure with their colleagues, and boost the intrinsic motivation of their students by granting them autonomy in the learning process.

Modules

The Pedagogical Competencies Development Program is a two-semester program in which, ideally, all new faculty members should enroll during their first semester of teaching. However, this is not possible due to the center's capacity. The program consists of four modules that build upon each other: the Laboratory of Pedagogical Competencies; Video-based Reflection on Teaching; Teaching Workshop; and the Mentoring Program.

Laboratory of Pedagogical Competencies

The Laboratory of Pedagogical Competencies introduces participants to the Pedagogical Competencies Development Program and helps them to acquire and improve the competencies that are essential for effective teaching. It is an

intensive week-long module consisting of 25 classroom hours that is led by a duo of experienced lecturers who also invite experts to discuss particular topics. The laboratory focuses on the fundamentals of university-level pedagogy and didactics. The syllabus covers the following topics: effective teaching and the role of the university teacher; lesson preparation and planning; communication skills for teachers; student engagement; evaluating students; working with feedback; reflection for teachers; and working with modern technologies. Participants who complete this module will be able to:

- Ground their conception of teaching in knowledge from the educational sciences
- Be familiar with the theory of social needs and be able to apply it to thinking about students and teaching
- Understand the connections between teaching objectives and methods
- Understand the advantages of constructivist teaching and learn to use its basic techniques
- Understand the impact grades have on students' learning performance
- Prepare lessons with a view to actively engage students
- Provide formative feedback to students
- Be familiar with the reflective cycle and understand each of its components and their order.

The laboratory focuses on three main areas: theoretical, reflective, and practical. This means that participants have room to: (1) reflect upon their own teaching; (2) acquire the latest relevant knowledge about pedagogy and didactics; and (3) plan their courses for the following semester under the guidance of the lecturers and with help from their peers. The laboratory also provides an opportunity to share examples of good practice as academics from MUNI's various faculties attend this course together. Thus, the laboratory comprises a unique space whereby participants can share their teaching-related knowledge, experience, and problems and establish working relationships with their colleagues that will last after the course has ended.

As part of the laboratory, we use a textbook that provides a systematic overview of key information and contains several assignments for participants to complete. The course also has an e-learning component in which the lecturers upload study materials and where the attendees can complete three types of assignments—reflection assignments, practical assignments, and discussion assignments—through which they can attempt to implement the knowledge they have acquired in this module in their own lessons.

Video-Based Reflection on Teaching

This module directly follows up on the Laboratory of Pedagogical Competencies. It is based on the idea that laboratory participants will set development goals for themselves that they will attempt to meet during the course of the current semester. Each participant in this module spends 20 hours working individually with one of the lecturers to conduct video-based reflection. This collaborative effort is based on a video recording of the participant's teaching. This recording provides valuable insights into the participant's real actions in the classroom and reflecting upon them becomes a key means for teacher development.

The Teaching Workshop

The Teaching Workshop begins the second semester of the Pedagogical Competencies Development Program and is intended to help university teachers improve, especially in terms of selecting and using basic and innovative teaching methods. This practically focused, week-long intensive workshop is taught over 20 hours and is attended by all participants in the development program together. In this module, we focus on topics that the participants choose themselves in a survey. In the past, the following subject matters have been covered: engaging teaching methods; data visualization; lecture preparation; using video-based reflection for professional development; voice care; motivating students; using applications in the MUNI Information System; and working with students with specific learning needs. Many seasoned experts, both from MUNI and other institutes (e.g., Charles University, Prague), are involved in teaching this course. The Teaching Workshop is designed so that participants have as many opportunities as possible to actively test out the information they have learned.

The Mentorship Program

This is the capstone module of the year-long development program. Each participant chooses a mentor to help develop the competencies they would like to focus on. Participants can choose mentors from their own field, or they can engage in interdisciplinary cooperation. Mentors receive adequate training so that they can help develop the pedagogical competencies of their mentees. Mentors must attend three workshops focused on clarifying the mentor's

role, indirect methods for guiding mentoring conversations, and offering feedback and providing advice. The mentor and mentee should work with each other for a minimum of 20 hours. The goal of the mentorship is to plan together a lesson that is then taught by the mentee, evaluate that lesson, and then plan further development. We view the relationship between the mentor and the mentee as a way for mentors to develop as well, and as a form of social support for teachers.

Feedback

As part of the Pedagogical Competencies Development Program, we also collect feedback through feedback forms, both during the course and at its end. Based on the feedback we receive, we make changes to the overall program and to the team of lecturers and experts. Program feedback is generally positive, both overall for the entire program and for specific components. The negative feedback we receive is generally aimed at specific aspects of the program, which we can easily address.

Lessons Learned and Challenges for the Future

As the CERPEK is a relatively new center, we therefore monitor its development, assess its strengths and weakness, and consider avenues for further strategic development. If we look back at the center's history, we discover two critical decisions that had a positive influence on its beginnings. Firstly, the most important decision we made was to conduct research on teachers' needs and beliefs before starting the center and its development program. This research provided us with empirical evidence specific to our own institution. These results were extremely important in the first months of the center's initiation, particularly as we were repeatedly faced with academics and university staff saying there was no need for such a center and that we should not copy every trend that comes from Western universities. In our context, the empirical findings provided the scientific evidence for why such a center was indeed necessary in our local context.

Secondly, we carried out a review of the organizational structure and everyday work of similar university centers. A dilemma we faced was how to establish the basic structure of our center: Should we connect the center with the Faculty of Education or with the whole university? Should we open the development program to all academics or only beginners? Should we mix

participants from all nine faculties into one classroom, or should we divide them into "hard science" and "humanities" classrooms? We discovered differences between international universities and finally decided to associate the center with the whole university, prepare courses only for beginners—as we realized how different the expectations and needs of young and experienced academics could be—and to create a single, heterogenous classroom. We believe that these key decisions had a strong impact and garnered a great deal of respect for the center in the eyes of our academic colleagues over a relatively short time.

Nevertheless, despite our success in setting up the center and gaining the respect of our academic colleagues in a relative short period of time, we predict a few challenges to arise in future years. One of the largest will be to find a way to evaluate the effectiveness of the center. We need to find a method of evaluation which, on the one hand, would be rigorous enough, while remaining cost-effective on the other hand. We also need a more complex evaluation based on several sources to triangulate the quality of our data. Ideally, we need a tool in which we could use modern technologies and statistical methods to show causal relationships between the teachers' participation in our development program and the quality of their teaching.

Due to this chapter's limited space, we are unable to discuss all of our research findings, but we will mention one important discovery in conclusion. Our study of beginner teachers at MUNI revealed major differences in the development trajectories of scholarly and pedagogical competencies. Whereas scholarly competencies tend to grow as academics gain more experience, pedagogical competencies seem to stagnate at a certain point. In most cases, it seems as if academics have mastered the basic didactic techniques that enable them to conduct adequate university-level teaching. Teaching quality, however, is not as heavily monitored as research quality, which is regularly assessed. Academics are remunerated for high-quality research output, which also contributes to their career growth. Therefore, it seems that growth in academics' pedagogical competencies often hits a plateau. In order to expand our knowledge of this aspect, we are currently in the process of conducting an ongoing research project that will provide us with pertinent additional data.

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