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VIDEO IN BLENDED TEACHER EDUCATION: A TOOL FOR PRACTICING TEACHING ANALYSIS

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Abstract/Izvleček

The article presents a case study of using videos to develop primary school student teachers' skills when analysing teaching. It is based on a content analysis of teaching observations, students' written work, teacher feedback, curriculum, student evaluation, and teacher interviews. The research results show that using video is meaningful and motivating to student and university teachers. However, students rarely draw on theoretical knowledge in analysing the situations. To connect theory and practice, it is desirable to consistently apply the requirement to reflect on observed phenomena with the underpinning of theory and to strengthen the connections between theoretical and practical courses.

Keywords:
teacher education, teacher training, video use, blended teacher education

Ključne besede:
izobraževanje učiteljev, usposabljanje učiteljev, uporaba videoposnetkov, kombinirano izobraževanje učiteljev

Video v kombiniranem izobraževanju učiteljev: orodje za praktično analizo poučevanja

V članku je predstavljena študija primera uporabe videoposnetkov za razvijanje spretnosti študentov razrednega pouka pri analizi pouka. Študija temelji na vsebinski analizi opazovanja poučevanja, pisnih del učencev, povratnih informacij učitelja, učnega načrta, virov, evalvacij študentov in intervjujev z univerzitetnimi učitelji. Rezultati raziskave kažejo, da je uporaba videoposnetkov smiselna in motivacijska za študente in univerzitetne učitelje. Prav tako rezultati kažejo, da se študenti pri analizi situacij le redko opirajo na teoretično znanje. Za povezovanje teorije in prakse je zaželeno, da se dosledno izvaja refleksija o opazovanih pojavih, ki temelji na teoriji, in da se okrepijo povezave med teoretičnimi in praktičnimi predmeti.

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Introduction

In recent years, owing to the shortage of qualified teachers, there has been an increasing demand for undergraduate studies in a blended form, i.e., a form that combines face-to-face teaching and online teaching (Rooney, 2003). It is also necessary to recruit candidates for teacher education from among people who have been working in the field of education for a long time and who therefore, often because of family commitments, cannot pursue a full-time form of study (Brücknerová et al., 2020). Teacher educators are faced with the challenge of designing their courses to achieve maximum effect with a limited number of face-to-face meetings and practice in schools under the supervision of selected teachers (Loudová Stralczynská et al., 2022; Stará et al., 2020). The notion of the teacher as a reflective practitioner (Schön, 1983) requires finding new ways to link theory and practice even in these limiting conditions.

The use of videos in teaching is one of the ways to achieve the connection between theory and practice and the development of reflective skills among students (Vondrová et al., 2020). The literature on the use of video to link theory and practice in teacher education is relatively extensive, but the time constraints of teacher education students' curricula and conditions are not always considered. In our article, we will therefore present a case study of the use of videos in a blended form of study, where the teacher must choose teaching approaches and methods that respect the low time allocation for teaching. Our intention was to describe and evaluate these approaches. We believe that this case study can encourage other teacher educators to think about the potential for using video in teaching and any possible teaching innovations in the limited conditions of teaching and practice.

Video in teacher education

Videos are a valuable tool for learning by and for training future teachers. The criticized gap between theory and practice in teacher education can be bridged to a certain extent through videos (Laurillard, 2002, Cannings and Talley, 2003; Vondrová et al., 2020; Wang, 2013).

The use of videos has been facilitated by technological advances and the digitization of teaching resources (Brunvand, 2010; Calandra and Rich, 2014; Goldman et al., 2007; Sherin and Han, 2004).

The experience of distance learning in the COVID-19 era has led to significant development in the skills of teacher educators in using digitized materials to support and manage student teachers' learning (Ali, 2020; Sari and Nayır, 2020). Analysis of video sequences of teaching has become an important part of teacher education in many departments (Masats et al., 2007).

According to Yung et al. (2010), video recordings of authentic situations have a positive impact on the professional skills of teachers and student teachers and enable learning at the emotional, social, cognitive, and psychomotor levels. After working with videos during autonomous training, teachers demonstrated a better ability to define and exemplify targeted professional competences (Meyer, 2010).

Yung et al. (2010) identified three main processes that accompany video use and support learning. These are critical thinking, meaningful comparison, and productive discussion. These then lead student teachers to theorize, contextualize and design contextual adaptations in their own practice.

Masats and Dooly (2011) point out that when watching video recordings, student teachers view the observed teaching from the position of the teacher as well as the student, which is crucial for the development of their teaching competences.

In teacher training, it is often impossible to provide sufficient direct contact between teachers, students in schools, and student teachers, especially in distance or blended forms of study (Moore and Kearsley, 1996; Northrup, 1997). It is here that working with videos seems very important.

Working with video offers multiple advantages. It allows one to link video viewing with discussion or to watch specific parts of a video repeatedly and focus on details. Student teachers can observe other teachers' teaching, but they can also make recordings of their own lessons and reflect on these–individually or in a group of student teachers. Research has confirmed the greater emotional engagement of students when watching videos of other teachers compared to watching their own videos (Kleinknecht and Schneider, 2013), while other studies have found the opposite (Seidel et al., 2011). According to Kleinknecht and Schneider's (2013) research, watching videos of others allows for deeper engagement in the analysis of problematic events. Observing one's own videos versus observing others' videos requires more prearrangement and scaffolding. Zhang et al. (2011) point out that the use of other people's video recordings is often insufficiently contextualized. It is also common that it is inconsistent with the observers' experience or does not match their knowledge.

When working with videos of others, it is possible that the observers are unable to empathize with the teachers and students in the videos (Vondrová et al., 2020).
Group viewing and discussion of the videos allow personal teaching experiences to be brought to the group and learning to be shared with others (Kang and van Es, 2019). It is also research verified (Tripp and Rich, 2012) that teachers and student teachers prefer group reflective tasks over individual reflective tasks, but also that group reflection is more effective when preceded by individual reflection.
The literature cites the benefits of working with videos that are examples of good practice (Kang and van Es, 2019) as well as the benefits of using cases depicting teaching that is in some way lacking (Krammer et al., 2015). In particular, the advantage of videos that are examples of good practice is that they are more motivating for students. Students' reflection on such videos tends to be more thorough and sophisticated (Janík and Minaříková, 2011). The disadvantage is that these videos do not offer the student situations in which mishaps occur. However, the student should also be systematically prepared for these. Conversely, the advantage of videos that are not examples of good practice is that they can be used to demonstrate specific and clear deficiencies. As a rule, they are obvious and can therefore be easily detected by the student. However, analysing these videos risks providing students with insufficient stimuli to develop adequate professional competences (Gaudin, 2014).

Aim and methodology of the research

Undergraduate teacher training programs in a blended form, suffering from lack of time for supervised practice in schools, can use virtual apprenticeship through video teaching sequences. Since we could not find research on how individual teacher education programs and individual teachers approach such an option, we decided to map this issue as a descriptive case study (Yin, 2009).
The aim of the research was to describe a case of using video in the blended form of studying a key course in the undergraduate preparation of primary school teachers at the Faculty of Education of Charles University in Prague. We posed the research question, How are video recordings of lessons used in a course that aims to teach student teachers to analyse primary school teaching?
In order to meet this objective, the use of videos in teaching the course was examined through observation, analysis of audio recordings of discussion in face-to-

face teaching, analysis of students' written work and teacher feedback on this work, analysis of documents such as the curriculum of the Primary Education Teaching program, course syllabuses, analysis of student evaluation of lessons, analysis of video recordings used, and analysis of interviews of university teachers.

The main research (observation of teaching, interview of university teachers) was carried out in the academic year 2020/2021. Analysis of documents, student assignments, and their evaluation were also carried out for the two previous academic years.

The data collection and analysis were conducted by 3 university teachers, one of whom is a teacher of the course under study. We are aware of the limitations of this approach because the teacher of the course is not an independent researcher. However, given that this researcher has a broad understanding of the case study context and is motivated to truthfully describe and evaluate the reality of teaching the course with the use of video recordings to learn from and participate in innovations in the use of video in further teaching, we believe that the limitation of the approach is outweighed by these advantages.

Observation records and written materials were subjected to content analysis, with the researcher focusing on the characteristics and type of video recordings used, the way of watching the video and working with video recordings, course evaluation by students, and evaluation of the work with video recordings by university teachers.

Regarding the latter point, the researchers independently conducted a subjective evaluation of the use of videos in the course. They freely articulated the individual strengths and weaknesses of the case. The researchers presented and discussed their evaluations in a joint meeting.

An audio recording was made of the presented evaluations and the subsequent discussion, a recording which was then made available to all three researchers. This was then compiled by one of them into written conclusions. These were then commented on and discussed in a shared environment until the researchers agreed on an evaluation with which all three agreed.

Teaching practice course – context and objectives

TP I is taught in the 2nd year of the 5-year master's degree program Teaching at Primary School in parallel with the course Theory of Primary Education I (TPE I).

It aims to link the knowledge acquired in the latter course with observation and reflection on teaching in primary school, to broaden students' understanding of the ways of teaching in a contemporary school. Different teachers are involved in the teaching of the two courses. In both courses, self-study, and completion of tasks by the students are assumed. In the blended form of study, TPE I is endowed with 4 ECTS and 18 hours of face-to-face lessons. The monitored course TP I is also endowed with 4 ECTS, but only 4 hours of face-to-face lessons organized in one block at the beginning of the semester. In addition to the face-to-face sessions, students are expected to complete at least 12 hours of individual practice in a school where the student works or which he/she addresses independently.

The TP I group consists of 35 to 40 students. Several of them are already working in education, usually as primary school teachers, and are now completing the required qualifications by studying. The study group also includes individuals with no previous practical experience.

The course aims to develop the skill of systematic analysis of teaching. Students learn to observe other instructors' teaching, reflect on it, and evaluate its quality in evidence-based criteria. Students' base knowledge is provided by the parallel course TPE I. The course under review is followed by Teaching Practice II (TP II) and Theory of Primary Education II (TPE II). In TP II, students are already independently teaching and analysing videos of their own teaching.

Research results and discussion

The teacher chose to use a video containing a recording of a lesson taught by an experienced primary school teacher. The teacher justifies the choice of the video by stating that some students are overly critical after watching an example of inferior practice and make and verbalize quick and fundamental judgments that need to be worked with (Kleinknecht and Schneider, 2013). The researchers agreed that students, especially those from sites where there are limited numbers of teachers, need to encounter good practice more often, which is why they consider the choice of a video recording with good practice to be an effective step.

Nevertheless, some students argue that they find it difficult to believe the reality of the recordings. This fact confirms that selecting recordings of good practice can be motivating and allow students to have higher expectations of their practice.

Before the viewing, students were asked to think of one lesson they had taught or attended as an observer, which they subjectively considered successful.

In heterogeneous groups, they then briefly described each lesson to the others, highlighting the phenomena they considered to signal teaching quality. The group task was to find common characteristics of 'good teaching'. The teacher facilitated the discussion to reach collective agreement among all groups on the typical characteristics of good teaching. The result of the joint discussion was then compared with the list of observable teacher skills formulated in the document *Framework of Teacher Professional Qualities (PQF)* (Tomková et al., 2012), which is one of the tools used for self-assessment and evaluation of teaching in the Czech Republic in conditions where there is no standard for the teaching profession (Loudová Stralczynská et al., 2022).

The aim of this part of the lesson was to make students realize that they can intuitively identify many of the teaching qualities, but at the same time, that opinions on what can be considered quality vary. In the researchers' peer discussion, it was pointed out that in this activity, students were not challenged to argue with the support of theoretical concepts conveyed to them in theory-based courses, including the concurrently taught course TPE I.

While watching the video together, the students were supposed to focus attention on the teacher's assigned professional skills area from PQF. Supported by a worksheet listing 4 to 5 criteria from that document, the student is to record whether evidence of meeting the criteria can be found in the lesson.

After watching the video, the students shared their notes in groups, and in a teacher-facilitated discussion, they argued, supporting their assessment of the observed teacher's skills. In case of disagreements, a selected portion of the recording was watched repeatedly. They were also aware of the interrelationships between each criterion in a complex teaching situation. Students were encouraged to reflect on the observed and described teaching, and to consider alternative solutions. PQF served as support. The researchers agreed that students were not encouraged to make more substantive and reasoned responses in line with the theory of teaching. The theory was not usually explicitly mentioned, nor was it directly referred to. To make students aware of the importance of theory, the theory could be explicitly mentioned by the teacher, and students could be directly asked about it. For example, in the demonstration below, students could have been asked about what they were being taught simultaneously in TPE I, e.g., what features of dialogic teaching could have

been and were not seen in the recording. In this way, students could revise the theory (Šeďová, 2021).

T: Do you think that criterion 2.5 has been met?

S1 I think definitely. The teacher repeatedly asked the students for their opinion and praised them.

T: Is there an agreement then? Or does anyone have a different opinion?

S2 Well, I don't know, she asked, but then maybe she didn't react to what they said. The boy who asked if the animal was a mammal or not didn't get an answer to his question.

S1 Oh, I didn't even notice that.

S3 Maybe it has more to do with criterion 2.4., but it seems to me that it was the extroverted kids who raise their hands and are fast enough that had the chance to say something.

S4 She didn't have to call them out right away, but maybe should have required everyone to write down the answer first. Or use a lucky dip; it's worked well for me.

T: Does anyone have any other recorded moment that would be evidence of meeting or not meeting criterion 2.5?

S5: Although it was not seen in this lesson how they work with it, they have a rule on the notice board 'We listen to each other', so I suppose it is important for the teacher to guide them to do that.

S6: Or maybe it's just formally on there. Other times she might do it, but it wasn't visible in this lesson.

Students then independently briefly summarised the strengths and weaknesses of the lesson, formulated questions they would like to ask the observed teacher and reflected on the benefits the observation had for their own teaching.

S1: The strength of the lesson was the use of a wide range of methods with an emphasis on active learning and cooperation. Students worked in pairs and in cooperative groups, where they had assigned roles to promote positive interdependence between members. The teacher often asks open-ended questions in discussion to promote the development of higher-level thinking skills and encourage students. The classroom environment was tailored for cooperative learning. Collaboration between the teacher and assistant was effective. Question for the teacher: How should group members be changed and how frequently?

In the final discussion, students were asked to generalize the experience.
Direct teaching was followed by a series of tasks in the LMS Moodle environment. In 2020/2021, students individually analysed in writing a video recording of the lesson different from the one used in the direct session. They observed different or additional quality criteria from the PQF observable in the lesson. They rated each other's work anonymously. The video recording matched the same criteria as the video recording observed together and was selected by the teacher.
In 2018/2019, students freely discussed a specific video recording in an online discussion forum. Each student was required to contribute to the discussion at least once. On average, each student contributed twice to the discussion. The lecturer entered the discussion twice, mainly to appreciate the activity and encourage a plurality of opinions, to monitor compliance with the rules of the discussion, and, if necessary, to point out deviations from them, to give suggestions for new aspects of the discussion.
Spontaneously, student attention has been shown to be directed toward the teacher's activity rather than the students', which is especially common in the early years of study (Santagata et al., 2007). Students focused on the quality of the teaching process rather than on the effectiveness of the process for students' learning relative to the objectives, even though the objectives are the core curriculum in TPE I (Stará and Starý, 2019). Students who were concurrently teaching often compared the teaching from the video with their own, thus reassuring themselves about the quality of their own practice. At the same time, they tended to point out critical points in the analysed teaching but were not always consistent with their supporting arguments. Arguments explicitly pointing to connections with theory were sporadic and tended not to refer to specific research or researchers; instead, students made comments such as; "That's what we talked about in the lecture." The contributions of students with little or no actual teaching experience were fewer and less comprehensive. These mainly appreciated specific ideas from the teacher and possibly fellow students, and only rarely suggested alterations. Some students contributed rather formally to the discussion, or it was clear that they had not watched the video in its entirety. Some commented, in the teacher's opinion, on irrelevant details about the lesson or details without much potential for generalization. The discussion was long; some students did not read it all, and therefore some comments were repeated. This is also why, subsequently, in 2019/2020 and 2020/2021, students had the option to choose from three different shorter video recordings, one of which, given the situation of the COVID-19 pandemic, was a demonstration of online teaching.

This video recording was clearly responsive to the current needs of students, as it received by far the most comment.

In all three years, students were asked to select three different situations from another video lesson. They were to label the selected sections with a time stamp and comment on them. After all the assignments had been handed in, the teacher summarised in writing the phenomena that the students had selected and how they had commented on them. She also summarised what had attracted little attention.

The teacher provided the teachers on the recordings with the comments of students. They reported that this served to motivate them for future cooperation.

Evaluation of the use of video recordings by the teacher and students

The course has always received high ratings (95%, 81%, 94%, 86%) in the anonymous student university evaluation survey. Below are typical student comments on this evaluation:

> S1: The course confronts us with real practice. I find it greatly beneficial because as an observer I can replay interesting moments or pause and reflect on them. It is true that the viewer misses out on the specific atmosphere in the classroom, but it has these certain advantages as well; S2: The opportunity to watch videos is inspiring for me, their analysis makes me think not only about the work of my colleague in the video but also about my own work; S3:Practical demonstrations, sharing ideas – anything that helps to bring practice closer. I appreciate and find the forums helpful in sharing ideas and experiences. I have started to use some of the ideas shared in my own practice. I also find it beneficial to work with video recordings of lessons, especially for time reasons. It is very problematic to combine the time of classroom observations with one's own schedule.
>
> Collaborative video analysis brings experience and emotion into the classroom (Kleinknecht and Schneider, 2013): S1: I was pleased that the teacher handled it in a similar way to me, assured me that it is a good way;
> S2: It was only when watching the video that I realized why giving precise instructions to the students is so important; S3: Ugh, I hope I don't really come off like that.

The main benefits of the use of video, as the teacher and two colleagues affirm, are that it allows bringing the image of practice into the lessons. The students are highly active in such teaching, even in a relatively large group.

They consider that by watching, analysing, and discussing the video situations, they are learning important skills that are relevant to practice.

The researchers stated that the practice of stopping the video and replaying some parts of it according to the needs of the group was effective. In addition to other benefits, it encouraged students to seek evidence for their claims and evaluations. Less often there was a naming of what was seen with the backing of theory.

Collaborative practice in analysing observations using video is likely to translate into a relatively high-quality level of performance in subsequent tasks in the online environment and can be expected to enhance the effectiveness of observations in individual practice where the tutor cannot be present with the students.

The linking of video work in a face-to-face meeting and subsequent independent work with another video in an online environment was identified as a supporting factor. In addition, a combination of individual and group reflective tasks also proved appropriate to eliminate the drawbacks of each approach and reinforce the benefits.

Watching videos can also encourage students to use video training, or filming and analysing their own teaching, as one of the effective methods of supporting the development of professional practice skills (Hamel et al., 2019; Janík et al., 2016).

The researchers believe that students with longer experience gain less from the course and that, conversely, students with little or no practical experience of self-directed teaching and students with low reflective skills in general particularly benefit from the course. However, this hypothesis has not been verified. In future, there is a need to identify greater challenges for students with more experience and more highly developed professional skills and to provide them the support enabling them to work effectively on their professional development.

According to the researchers, the phenomena that the students notice and how they interpret, comment, and evaluate them are also enriching for teachers and increase their understanding of the specifics of the context in which the students work in practice.

The researchers also agreed that providing the primary school teachers with feedback makes them feel the importance of their work and deepens the collaboration between primary school teachers and university teachers and their mutual learning.

Video usage limits

Over the years that videos have been used in education, the GDPR rules have gradually become stricter. Unfortunately, these rules have led to a reduced database of suitable recordings and increased cost and time to acquire new recordings.

Another limitation may be the exclusive use of video recordings illustrating good practice (see above). One of the practical implications of this study was the decision of lecturers to focus on the facilitation of common practice video recordings in other courses in the curriculum. Also, the fact that the course does not offer students the opportunity to work with video recordings of their own practice, even though we know from the literature (see above) about the benefits of working with this type of recording, led the researchers involved to conclude that the follow-up course would predominantly use recordings of student teachers' own teaching experiments.

Conclusions

The ability to analyse learning situations is a prerequisite for effective action in these situations (Sherin and Han, 2004; Sherin, 2007; Berliner, 2001; Kersting et al., 2012). The use of videos enables the development of the ability to analyse situations and thus contributes to the development of desirable professional skills. In this respect, the use of videos in the case under study has proved to be meaningful to both student and university teachers.

The use of videos allowed students to practice argumentation and learning through sharing of individual opinions and arguments in a limited time. It was evident that the advantage was that the videos made it possible to observe the given teaching repeatedly.

However, it has been shown that students rarely rely on theoretical knowledge, even though they have a course dealing with the theory of teaching in the curriculum in parallel with the observed course. In this respect, we consider it desirable to deepen the cooperation between teachers of theoretical and practical courses and to consistently apply the requirement to reflect on observed phenomena with the support of theoretical knowledge.

The opportunity for group reflection on video situations is highly appreciated because it allows students to view the same elements from various angles, making them aware of details they may not have otherwise noticed and significantly improving their learning.

In this instance, there was also learning by the instructors, who provided a recording of their lessons and then received written comments from the students. This is a good illustration of effective collaboration between university and primary school teachers.

It appears to be effective and to ensure the systematic development of student teachers' analytical skills when video work is combined with individual and group reflective tasks in both face-to-face and online settings. The practical emphasis of the instruction, the applicability of the learned material to the practice, and the motivational quality of the observed instances are all valued by the students. The lessons are made more emotional and experiential by the videos and their analysis.

The results of the study contributed to the planning of partial innovations in several courses of the study program and the introduction of a collaborative system of setting requirements for the fulfilment of these courses to link the theoretical and practical knowledge acquired in these courses.

Given the time constraints on teacher education, we hope that these findings will inspire teacher educators in using video in their teaching, especially when they suffer from a lack of the time that would allow them to guide student teachers in regular practice in schools.

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