Skill Based Teacher Education in Blended Learning Scenarios

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Abstract
Development, implementation and reflection of blended learning scenarios, have become established in both research and education (Mehl, 2011). Results are evident for the different phases of teacher education. Imbedded in a design based research a blended learning scenario was developed in which students were enabled to video-record each other’s teaching and interacting during school lessons and finally to comparatively reflect those. Evaluation was realized with guided group interviews. Based on interferences when students reflected their own and fellow students’ teaching, clear effects can be outlined. By dealing with their own and their fellow students’ video material students gained new knowledge and competencies.

Key words: Reflective practice, blended learning, physical education, videography, job-related skills

Introduction
One of the most sensitive stages in Physical Education teacher education is, when students, after profound preparation, give their first lesson at school. As early as this, students must be taught competencies that enable them to critically reflect their as well as their fellow students’ acting. The way in which reflection takes place is very diverse. The described concept uses a blended learning scenario. Reasons shall be outlined in the following.

Development, implementation and reflection of blended learning scenarios, linking theoretical and practical training of teaching competencies, have become established in both research and education (Mehl, 2011). For the purpose of a reflective teacher education, in order to face diverse school settings, several research groups (Lipowsky, 2004) have surveyed didactically suitable blended learning scenarios. Results are evident for the different phases of teacher education including university, pre-service and in-service (Mehl, 2011, Kleinknecht & Poschinski 2014, Schlöffel, 2015).

The described project tries to focus on supporting competencies, which foster the ability to act in school settings by using a blended-learning scenario (lesson, video analysis and online-platform).

Theoretical background
Practical training courses for student teachers at schools comprise an important part in teacher education in Germany even though the quantitative amount varies immensely
within the different educational locations (Bosse, 2012). Requirements concerning content are being set by the standards for teacher education (KMK, 2004) as well as requirements to scientific disciplines and subject didactics in teacher education (KMK, 2008).

A clear focus is being set on the education of a comprehensive action competence. Especially in today’s media society, being able to use multimedia and the internet is seen as a basic qualification. This includes new cooperative forms of learning and teaching by internet-based learning (Lermen, 2008). In this sense, media competence augments the model of comprehensive action competence as seen in figure 1.

![Figure 1. Components of comprehensive action competence (Lermen, 2008, p. 48, mod.)](image)

In combination, using media competence, reflection can support the understanding of one’s own actions in order to develop and improve teaching competencies. Within the process of reflection Schön (1983) distinguishes chronologically between ‘reflection-in-action’ (in a pedagogical setting it can be regarded as reflection while teaching) and ‘reflection-on-action’ (reflection after teaching). (Wyss, 2013)

At the University of Leipzig, students gather first experiences in a four weeks practical training by mainly watching and reflecting on lessons based on various scientific objectives.

In a second practical training course, students give their first lessons in their two studied subjects during one semester (two semester hours per week). Those lessons are being prepared in cooperation with fellow students and a university advisor.

The final practical training lasts another four weeks per studied subject. It mainly focusses on more independent teaching and understanding structures and processes, which are import for apprehending the mechanisms of school life (ZLS, 2016).

The project described implies blended learning in the second practical training course. In this context, blended learning shall not be understood as self-explaining or a didactical approach (Reusser, 2005; Reinmann, 2011; Sherin & van Es, 2009). Nonetheless, it ensures attention by linking media and education (Ebner & Schön, 2011; Reinmann, 2008, Reinmann, 2011; Schorb, 2009). Moreover, blended learning needs to be planned carefully, including the determination of teaching and learning goals, choosing suitable
materials, sequencing and embedding them (Krammer & Reusser, 2004; Krammer, Lipowsky, Pauli, Schnetzler & Reusser, 2012).

Keeping this in mind, the needs of the learners are in the focus of blended learning. Characteristic is the transition between phases of independent learning when gathering information and phases of working in pairs or groups (Sauter, Sauter & Bender, 2004). Learners are demanded to motivate themselves, to choose suitable learning strategies to plan single learning phases and to organise the learning process including the possible solution of occurring conflicts (ibid). Therefore, learning arrangements must be provided to ensure both independent learning as well as accompanying learning processes (ibid.).

Implementation of the concept

As mentioned above, the project deals with the organisation of the second practical training. Students are in third year. Based on theoretical background they now enter a practical training which focusses on giving lessons. Accompanied by a university advisor the students prepare and give first lessons, which are video-recorded. Those videos are being used to analyse and evaluate the lessons.

The main goal is to support the further development of competencies, which foster the ability to act in school settings. To understand the working principle of the project, its pattern shall be explained in the following (fig. 2).

Figure 2. Possible schedule for the second practical training

Embedded in a 15 weeks’ term, students meet in weeks one and two for the first time in their groups consisting of five to six members. This is when they receive basic knowledge about the organisation, the content and the goals of the course. Furthermore, they get the chance to make themselves acquainted with the provided equipment like video cameras, tripods, microphones and laptops. A course in Moodle 2.0 helps them to independently get more information via guidelines and video tutorials to fulfil the requirements of the course.

In week three student teachers get to know their school, their teacher and their pupils. Subsequently in weeks four to six they start taking over parts of the lessons like, for example, the beginning or the ending. Short reflections in the groups take place directly after the lesson. They leave space for a short self-reflection and feedback from fellow students, the class teacher as well as the university advisor.
In weeks seven to twelve the student teachers give full lessons. Hereby mostly two students prepare and give the lesson. During the teaching period, another fellow student video-records what is happening, focussing on the actions of the student teachers. The other students sit in the background and watch without detailed patterns.

The video camera is being given to the two active student teachers immediately after the lesson. After cutting and converting the video (using a freeware programme, called freemake video converter), they upload it to the course in Moodle 2.0. This is where they can also deposit their self-reflections on a feedback pin wall. Simultaneously, the other students in the group can now access the uploaded video to provide their reflections in the same feedback pin wall. For a profound feedback, they use observational criteria, which they have exchanged after the lesson.

After each student has given at least two complete lessons, they support the class teacher for the rest of the term. In the final week, the concluding interviews take place. In general, the blended learning scenario consists of an online phase and a phase of attendance. During the phase of attendance, the students teach and sit in. During the online phase, the recorded material is being cut, converted, uploaded and reflected. The university advisors supply the learning environment on Moodle 2.0. Moreover, they support students in preparing the lessons, provide necessary material and give a detailed video reflection in form of a didactic coaching.

All in all, the concept shall offer an attractive learning environment to foster job-related competencies like reflective and media competencies.

**Embedding blended learning in a design-based research**

Dealing with the evaluation of a teaching and learning tool it is helpful to refer to the approach of design-based research (Reinmann, 2010) and to imply it into the described process (fig. 3). Having the aim to improve teaching, a repeated and theory-based analysis, a developmental and a testing period and finally reflection takes place.

![Blended learning in design-based research](image)

*Figure 3. Design-based research*
After analysing the problem, several theory-based explanations were used to develop and to run the concept (Tups, 2015). The implementation was evaluated by gathering the personal attitudes of the participants. This was done by guided interviews with groups of students and finally evaluated by qualitative content analysis (outcome is being discussed in the next paragraphs). The results provided a basis for further interventions closing the circle of design-based research.

**Empirical access**

The survey took place once after the intervention in summer term 2015. Eight groups, consisting of five to six student teachers (44 students in total) accompanied by a university advisor, attended lessons at primary and secondary schools in the city of Leipzig. Seven groups used the blended learning scenario, including video analysis and working on an online platform (Moodle 2.0). The students were in fourth to sixth term on their way to become Physical Education teachers (for primary or secondary school).

Seven guided group interviews were conducted, recorded and transcribed in which 32 participants took part. 14 of them were female and eight of them male. 13 participants attended primary school lessons and 19 secondary school lessons. One group could not be interviewed because parents’ permissions to video record lessons were not granted. This group had to accomplish the practical training course without the blended learning scenario.

Guided interviews provide a scaffold, which helps comparing the findings. Nonetheless, they leave enough space to ask new questions and to integrate new topics, which were not taken into account when the guideline was created (Bortz & Döring, 2015).

The final guideline originated from interviews, which had taken place in the second teacher training within 2011 and 2014. They were reviewed and edited according to Mehl (2011) and underlying criteria for creating such guidelines. The following seven topics shape the guideline:

1. **recording videos – camera operator**
   Expecting appropriate media skills and the understanding of the provided guidelines, it is expected, that student teachers have no difficulties in handling a video camera.

2. **while recording – student teacher**
   Novices in teaching mainly concentrate on giving the lesson. Therefore, the existence of a video camera, recording their actions should not be distracting.

3. **while watching – student observer**
   Student teachers observing the lessons of their have the chance to freely observe in any direction. Answers given here can vary.

4. **providing the video**
   Providing the video splits up into downloading it to the computer, cutting and converting it and finally uploading the result to the online platform in which the recorded lesson shall be reflected. When following the given guidelines, students’ teachers should have only few difficulties in doing so.

5. **video analysis – perceiving oneself**
Perceiving oneself on video can cause awkward feelings to student teachers. Turning this assumption into improvements of acting in front of class can be supported by video analysis.

6 reflecting oneself and others
It shall be investigated in how far student teachers see difficulties in reflecting oneself and fellow students based on the recorded videos.

7 outcome – job relation
The ability of student teachers to transfer gained skills to the profession of teaching shall be analysed with this question.

The mentioned blocks reflect the main fields of interest. Especially video analysis and internet based reflection put high requirements to media competencies of the students. In order to foster independent learning, cooperation and reflection the mechanics of the technical components must be regarded as essential. It can be concluded that the created guideline combines the questioning for impact potential with the technical practicability of the project.

Results
The analysis of the findings derived from the group interviews takes place on the level of main categories. For the purpose of interpreting the findings, consideration of standard examples shall be conducted.

1 Recording interviews – camera operator
Standard example: “Well, it was all explained fairly well; wasn’t much of a problem. The only problem was, I didn’t find the plug.”

The students who were video-recording the lessons had to be capable of technically operating the equipment (camera, tripod) on the one hand and to decide which scene or situation to record on the other hand. Comments were mostly made on the technical realization. As the standard example shows, the use of the video equipment was generally seen as simple. This can be connected with the media competencies already existing in the students but also in the well explained guidelines and video tutorials presented to the students. It also needs to be mentioned that students decided in the group who would do the video recording. Students who felt insecure could thereby step back and let fellow students do the camera work.

2 While recording – student teacher
Standard example: “It actually got lost in the shuffle.”

The students who are in charge of the class are mostly novitiates. Under immense efforts, they usually have prepared their first lesson. Enforcing this plan, reacting to pupils and adapting methods to the pupils’ needs puts them under high pressure during the lesson. As long as the camera is working in the background and pupils do not use it as a form of distraction, they do seldom realize a camera is in the room. Higher distances between camera and student teacher in the gym or on the sports ground contribute to this perception.
3 While watching – student observer
Comments on this topic given by the students were very versatile. Therefore, deriving a standard example was not possible.
While sitting in class and watching the lesson, students were not given specific questions or patterns to fill in. They were intended to freely absorb what is happening in class in order to use their general notes for the later reflections (6 reflecting oneself and others). Instead, in some cases students did detailed observations on the didactic questions meant for the video reflection. This let them work more time efficiently but also prevented them from having a general glance on the interactions during the lesson.

4 Providing the video
Standard example: “Well, I regarded it as simple, because I didn’t have to do much cutting in my video. I could simply download it from camera, convert it and upload it.”

This standard example shows, that, as long as no extra work had to be done, downloading, converting and uploading of the video were achievable. Guidelines, video tutorials and existing media competence were helpful here. A close relation to Point 1 can be drawn here. In both cases operating the technical equipment was seen as simple.

Nonetheless, students also had difficulties when trying to provide the videos. The invested amount of time could be high because of
- insufficient internet connection
- big size of video files
- having to do much cutting
- having to convert video files twice because of software failure

In all cases, students looked for advice in fellow students or the university advisor. As a result, all recorded videos could be uploaded and reflected.

5 Video analysis – perceiving oneself
Standard example: “Well, to me it was very valuable. Of course, when you have a picture of yourself, seeing this can be deterrent. Yeah, but it’s not too bad.”

Seeing oneself in the video felt strange to many students. The got confronted with different perceptions of their voice, body posture and gesture. This let many feel reluctant in the beginning. An open way of discussing their first teaching attempts followed by different communication rules let them get over this period so that they could work with constructive feedback in the end.

6 Reflecting oneself and others
Standard example: Felix: “From reflecting yourself or others? Because, when reflecting yourself you often reflect on what was said to you; mostly, surely not always.”

        Carl: “I don’t agree with that. I must say, when reflecting myself I often tried to explain myself.”

The topic Reflecting oneself and others is seen by the student from two different perspectives. Felix, for example, does not only take his own thoughts and perceptions into account. He also takes considerations of his fellow students and his university advisor
into account. Moreover, he uses different opinions and impressions to put down his own reflection.

Carl instead goes one step further. He combines his considerations with those of others, uses them to justify his actions and thereby explains himself.

Carl does not do the task as it was intended; namely to describe and reflect his own actions during the lesson. In addition, he goes one step further and uses feedback of others in order to justify himself or even to derive alternatives for his future teaching.

7 Outcome – job relation
Standard example: “Well, lesson by lesson, even if I was not teaching, I learnt something; also by noticing advices others gave to each other. So you could improve that in the next lesson.”

Students see the possibility of being at school, teaching to pupils and constructively reflecting on it as something very rewarding concerning job relation. It is stressed that a development takes place from lesson preparation, teaching methods, interaction with fellow students and pupils but also in reflection on their own way of teaching. In general, students see chances for job related learning in both practical training as well as reflection, which is offered by this blended learning scenario.

Summary and outlook
The balance between practical and theoretical teacher education is very hard to take. Theoretical knowledge is the basis for later practical training periods. The described blended learning scenario combines theoretical and practical learning by repeatedly putting students into situation, which let them prepare lessons based on their didactical knowledge, give lessons at school and reflect on them both independently as well as cooperatively in an online environment (Moodle 2.0)

Competencies that are intended to be fostered are reflective competence and media competence in order to support students’ ability to act in school settings.

During the process of this blended learning scenario, students tend to blend self-reflection and the reflection of others. A synthesis in reflection competencies by working in the blended scenario takes place. In addition, students gain new awareness and knowledge by dealing with their own video material as well as material of others (the later one happens online). By doing this in different places and in groups even independent and cooperative learning processes are being fostered.

Based on a design-based research further modifications of the project are taking place. Guidelines, video tutorials and online learning environments are being regularly revised. In addition, requirements are being adapted. For example, since summer term 2016 students hand in a 15 seconds’ video sequences from their own teaching in order to explain why this scene had a huge impact on their way of becoming a Physical Education teacher. This very short amount of time (15 seconds) was chosen to direct student teachers to one specific situation in their lesson. By doing this, all students use their reflective and
media competencies at the end of the term in order to prepare for the following practical school training.

It is also intended to link this methodology with other areas of student teacher training. This could be in other practical trainings but also in other subjects. Finally, a transfer to pre-service and in-service teacher training is intended.

References


