

Teaching E-Portfolios in Teacher Education

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Abstract—Especially when starting their career in the induction phase, young teachers need personal, profession-related and social support. Young teachers can get personal support with a mentoring system, profession-related support in seminars and social support with peer-learning. E-portfolios offer ways to accompany those learning processes and are a central tool for the documentation of individual student progress in the induction phase of teachers. In this article a concept of teaching e-portfolios for the induction phase is presented, showing a basic structure, essential conditions and possible risks. Additionally this article also includes practical thoughts to the use of e-portfolios in basic teacher education and further teacher training.

Index Terms—Collaboration, e-portfolios, induction phase, mentoring, peer-learning, peer-review, reflection, self reflection social networking, teacher education, teaching e-portfolios, teaching portfolios.

I. INTRODUCTION

Since Mueller Fohrbrodt, Cloetta and Dann [1] reported on the practice shock of young teachers in 1978, other researches on the career entry of teachers in German-speaking countries followed. Although the results of these researches are very diverse it is visible till today, that the induction phase of teachers is a sensitive phase of teacher education. In the concept paper "PädagogInnenbildung NEU" [2] the induction phase in Austrian teacher education has been paid particular attention. For their career entry young teachers should get personal, social and profession-related support to set reflexive processes in motion. Reflection can be seen as the heart of e-portfolio work.

II. REFLECTION IN TEACHING E-PORTFOLIOS

To meet those challenges that come along with our rapidly advancing society, the ability of critical reflection is a key skill for lifelong learning. Reflection itself is seen as a form of thinking that takes place, when a problem occurs in the learning process. When reflection takes place, the problem should be viewed from different angles to find new aspects and approaches. When working with e-portfolios, in which individual and self-directed learning are in the foreground, reflection can enable a change of perspective of the learner. Attention is directed at a higher level - at one's own cognitive processes. On this meta-cognitive level "reflecting-in-action", reflecting on concrete problems in the labour process, and "reflecting-on-action," reflecting on their own learning, takes place. "Reflecting-on-action" is seen as a review of their own learning activities. Through detailed analysis of past and

present learning activities conclusions can be drawn for future learning [3].

Teachers are often exposed to strong temporal and psychological pressure in their first assignment. For this reason critical reflection of one's own patterns of action in this very formative period could probably be missed out. Young teachers run the risk of internalizing actions that are not or just little practical in an unreflected way. If this happens they will later find it difficult to refrain from these habits [4]. Mentors could support young teachers in the prevention of internalization of inappropriate behaviour patterns by encouraging them to reflect and by accompanying them in their reflective processes.

Those self-reflections seem to be important for all phases of teacher education training. Students generally should be able and willing to question and develop their beliefs concerning knowledge and learning. Otherwise their beliefs could also turn out to be a hindrance [3]. This reinforces the argument, that reflection is of essential importance not only for a self-directed process of lifelong learning, but also for basic teacher education and induction of teachers.

By writing reflective reviews about their own learning progress, for example in a cover letter or a conclusion, the teachers would reflect on the creation of learning products like written documents and think of the resources they used, of any wrong ways, criticism of the task or comments on an eventual teamwork. Such contributions are in the nature of "reflecting-on-action". Entries in learning journals or diaries on the other hand are usually "reflecting-in-action" and in most cases short reports on the status of learning difficulties, motivation or the state of mind. Also mixed forms of both types can occur [3].

In addition to the above mentioned reflections, reflections on the planning of further learning can be integrated in the e-portfolios. In times of basic education this could be forced and promoted by the seminar leaders or tutors. During the induction phase of teachers that would be up to the mentors to lead and focus the young teachers to self-reflection on the future of their own learning. For the processes of teacher training and lifelong learning this would be of great importance, too. This could bring clearness about their personal future career priorities. Additionally these own individual ideas shall be set in accordance with school administration and the development plan of the educational management.

Aware of the fact that in all phases of teacher education many e-portfolio views could be created it would be of great importance, that correlations between different educational phases, long term changes and developments and of teachers are emphasized. As a consequence it would be relevant to consciously create stops in the process of teacher education for reflecting and reporting about

personal development, further expectations and goals. Beside a cover letter at the time of study entry, the end of the introduction phase (S.T.E.P.-phase), the end of basic teacher education or the end of the induction phase would be good occasions to stop and reflect about this particular period of time and to give an outlook on future goals. Cross-references and linkages between some e-portfolio views can be used to highlight thematic relationships and connections and to present the personal development of the students over a longer educational period [3].

The structural model of Himpsl-Gutermann illustrates the role of reflection in learning with e-portfolios. It shows the basic structure of e-portfolios in three layers. This model consists of the three layers Products of Learning, Process of Learning and Representation of Learning (see Figure 1).

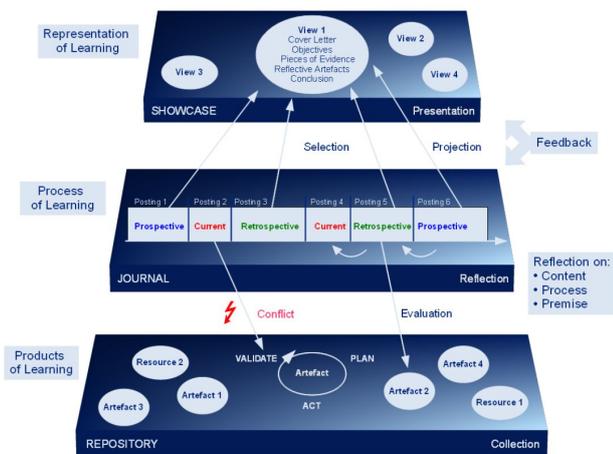


Figure 1. 3-layer-structure of e-portfolios. (Himpsl-Gutermann 2012, p.239)

For Himpsl-Gutermann [3] the process of reflection in e-portfolios takes place in the middle layer, which he calls "Process of Learning". In the lowest layer, the so-called "Products of Learning", artifacts and used resources are integrated in a repository. That is a storage where artifacts and learning outcomes can be saved and collected. These artifacts are learning outcomes which are created in individual learning activities of learners. The lowest level can be compared to the step "Collection" in the process components of e-portfolios by Häcker [8]. The layer "Process of Learning" includes planning, monitoring and control of own learning and self-evaluation. It corresponds to a learning journal or a learning diary, in which reflective postings, mostly in a written way, are drawn up in chronological order. Depending on temporal alignment these postings can be classified in present, retrospective and prospective. In this sense current reflections normally correspond with "reflecting-in-action", retrospective are "reflecting-on-action". Prospective reflections are directed into the future in formulating planning, expectations and hopes for the upcoming learning process. Reflections can deal with the content using the question word "what?", with the process using "how?" and the premise using the question "why?".

At the beginning of the process of e-portfolio work, a forward looking preview of own expectations, interests and goals shall be written. After that learning and additionally the writing of entries in the learning diary starts.

If disturbances occur in the learning process reflective artifacts about current problems shall be created. However, this requires the willingness of students to honest self-assessment with reflections on the "what?", the "how?", and eventually also on the "why?". However, the written formulation of the problem can lead to a solution or a new idea for a solution. Otherwise the students can ask for help from peers or tutors. If learners receive appropriate feedback, the problem can be solved. When learning products are completed, retrospective reflections are written by the authors. In these contributions, the reasons for the selection of artifacts in the e-portfolio views are added and eventually a self-assessment on the quality of the work. In the following learning period current and retrospective reflections can alternate. Additionally, forward-looking prospective postings can be written, for example when - after having received feedback from a peer or a tutor - changes in the learning product are planned. All these reflective postings shall be linked to the corresponding artifacts and stored in the learning diary. These postings are to be seen as artifacts themselves and are called reflective artifacts. At the highest level of the reflective work in learning with e-portfolios, which is called "Representation of Learning", all artifacts that are selected by the author of the e-portfolio view are presented. This serves as proof of skills acquired in a particular area. Now the e-portfolio view shows a collection of artifacts and reflective artifacts. In these reflective artifacts self-assessment of the students is included, in which they have a critical eye on the quality of their learning products, the learning curve and the progress they made in learning. There is also the possibility that peers or teachers evaluate the work of teachers or bring suggestions for improvement. Additionally the views that represent the learning progress of the students can be taken as a basis to assess the students' work.

III. MENTORING IN TEACHING E-PORTFOLIOS

An important factor to the success of a mentoring process is the willingness of the mentees to work on themselves and their career. It is essential that they have the openness to accept advice from the mentor and to internalize it later. As mentees get support in their everyday work through mentoring, mentoring can promote their personal development and social skills [5].

In addition to the already mentioned openness, trust and honesty other basic requirements for successful mentoring need to be mentioned. In trustful conversations the learners can openly speak about weaknesses, fears and ideas. The mentees have the opportunity either to accept the advice of mentors, or to think about it critically. In discussions self-evaluation and critical skills are encouraged. If mentees have the courage to try something new and eventually to make mistakes, the critical analysis of this action can bring the best findings for further professional work [5].

The learning process in mentoring shall not be seen as one-sided. It is possible that not only mentees learn from their mentors. A learning process can also take place the other way round. So mentors can also benefit from abilities and reflections of their mentees. Furthermore, mentors can also get feedback from their mentees. As a consequence mentoring may force a break from routine and the development of new perspectives in their professional activity. [5].

In the learning diary, a blog that is the most important part of the "teaching e-portfolio", the young teachers create reflective artifacts [3] in which they critically write about problems, findings and progress in their classroom work, educational work or administrative work. These postings can also be seen by the mentor and thus serve as a preparation for their meetings. As a consequence of the meetings mentees formulate short-term and long-term goals that should be updated regularly.

For the training of mentors it is important to note that the mentors are to be trained simultaneously for the use of e-portfolio and for mentoring. The training for traditional mentoring alone will not suffice. The combination of both methods will turn them into so called e-portfolio-mentors. According to Prop and Driessen [9] those e-portfolio-mentors find widespread use in education in universities to assist students in their personal and professional career. In their investigations, taking into account the perceptions of mentees and mentors, three functions for e-portfolio-mentors emerge [9]:

- In an early phase of mentoring e-portfolio-mentors act as "contact coaches". So they are contact persons between the student and the university. Students want to be coached by a mentor who has a complete view of the student as a professional and as a person. E-portfolio-mentors in this phase describe their approach as directive and they pay a lot of attention to encouraging self-reflection and self-awareness in students. The e-portfolio serves as a tool that helps students to reach a deeper understanding of their development processes and their progress. They can get in personal contact in regularly scheduled contact moments.
- Towards the end of mentoring e-portfolio-mentors shall be available for their mentees, the initiative for coaching comes from the students themselves. Students in this phase consult the e-portfolio-mentors about specific questions concerning their professional career or their performance, especially when decisions for specialization are to be taken. The mentor has to be an expert in the field, so that he or she can provide useful feedback on their performance and development and show them the way in their professional career. For the contact moments it is important that e-portfolio-mentors do not mix personal and professional career of the mentee. The mentor holds a mirror up to the student.
- During the entire learning process an e-portfolio-mentor should act as "buddy" in all the different phases of the learning process. The mentor should be approachable and accessible for students and guide them in a non-parental way. Although the e-portfolio is the basis of the mentoring program, personal contact with the mentor is regarded as more important than the e-portfolio itself. Additionally it would be ideal, if the mentors had gone through the same learning processes as the students. Personal contact between student and mentor is the most important success factor for effective e-portfolio-mentoring. Students and mentors prefer to stay in relationship from the beginning until the end of their learning process. This way, the mentor can have a significant influence on the student's professional development.

For the education of e-portfolio-mentors it is essential that they have the same competencies as traditional mentors have after their training. Additionally, they should also be trained on the concrete tasks in their functional areas as "contact coach", "coach on demand" and "buddy" by building up a good understanding of roles. If the e-portfolio-mentors are already trained in their basic functions and actively working in their professions, they also learn from each other for example by sharing experiences with their colleagues. In addition to ongoing regular training, for example six times per year for three hours in Midden Holland and Rijnstreek [10], a network of mentors could be developed through workshops and collaborative tasks to enable the transmission of new knowledge in a lifelong learning process, or to advise and support each other in difficult situations.

Therefore the use of e-portfolios would be conceivable, that on the one hand enables communication and promotes feedback and collaboration, and on the other hand also offers opportunities for self-reflection and personal development [5].

If both methods e-portfolio and mentoring work together effectively it can be noted, that the e-portfolio is a tool that offers the mentees the opportunity to organize feedback from mentors and to illustrate their personal development. Archiving and communication functions are the heart of this successful cooperation. Often together with their mentors, mentees learn to analyze experiences and get a deeper understanding of educational processes. Communication functions in e-portfolios allow the comparison of their own development with the opinion of others. They can also facilitate that the teachers ask for support eventually.

E-portfolios are also suitable for the collection of feedback in self-directed learning processes. The verbal conversation in a face-to-face situation still remains central in the combination of e-portfolio and mentoring. Written feedback can be seen as an additional possibility in e-portfolio processes to place the feedback exactly where it belongs to - for example to a document, a blog posting in the learning diary or a picture. This possibility shall be taken in e-portfolio-processes while simultaneously being aware of the fact that the more factual written feedback is not really suitable for very complex contents. This means that written feedback is an amendment that is qualitatively getting better, the better mentors and mentees know each other. That is the reason why the portion of written feedback can be increased during e-portfolio-mentoring-processes. This presupposes, however, that mentors and mentees know each other well and even then there can be some misunderstandings. In critical career phases like the induction phase it is important, that statements remain clear. As a consequence preference should be given to face-to-face communication.

Sonderegger [11] divides the cooperation of mentors and young teachers in preparatory work, preliminary of lessons, the lesson itself as a kind of execution and debriefing of the lesson. In combination with e-portfolios, it is recommended that the young teachers shall produce reflexive blog postings in all of these phases. These reflections collected in the learning diary are a central part of the teaching e-portfolios.

In the phase of preparatory work, brief verbal agreements about the subject area and an appointment for the

preliminary of the lesson shall be made. After that, the mentees gain an overview of the subject and calculate the number of lessons that are needed to cover the whole subject area. Mentees and mentors collect various materials for the lessons. Finally, the mentees create a vague lesson plan for the first lesson and think of content and goals for the first lesson. All these considerations and designs serve as a basis for discussion for the preliminary of the lesson. The mentees formulate a blog posting in the learning diary. This posting shall be integrated into a new e-portfolio view that is specially created for this topic. The materials such as pictures, short videos, handouts and similar things are to be integrated in this view. The vague lesson plan for the first lesson can be attached to the post as a file.

In a preliminary of lessons mentees and mentors are both working together to get a structure for the entire subject area at first, and are additionally working on a structure for the first lesson. In this cooperative work both consider prior experience and knowledge of the students in order to find a starting point for the lesson. Before the lesson is planned in detail it should be clarified, what skills, strategies, content and concepts students should learn in the teaching units. After that mentees and mentors direct their attention to the detailed planning of the lesson. Normally a draft has already been created before. Together, mentors and mentees reflect on this planning and highlight the central content explicitly, which is the centerpiece of the teaching unit. Furthermore the choice of learning methods and learning materials as well as selected social forms are to be questioned and conclusively justified. In the following phase, mentors and mentees concentrate on support options that are available for students in the phases of independent student activity. So they focus on the questions how to encourage weaker students and how special challenges can be found for gifted students. After having created a coherent lesson structure, work materials are selected. Here the mentors can offer the mentees the worksheets or materials they normally use, or give tips for creating new ones. At the end of the preliminary of the lesson, a mission for observation during the lesson is to be fixed. Together they choose an observation method, so that the mentors can provide specific feedback. After the meeting the mentees create a new posting in the learning diary about the lesson plan in which they mention the key points of discussion in a written way. This posting serves as a kind of agenda for the mentees for further work on the detailed planning of the lesson. Mentors can also give feedback by using the comment function under the posting and deliver additions, focusing or corrections.

During the lesson itself the mentors have an eye on the work of the teacher and on the students they collect data and facts taking account of the fixed observation perspective. They set up measurements and make verbatim transcripts or frequency lists. In the observation the mentor just has a passive role. During the individual or group work phases, they may be active as well by giving reminders to the students or by provoking discussion.

After the lesson the mentor and the mentee meet for reflection. After establishing conditions and expiration debriefing starts. Mentors present their written notes from the lesson. These notes can be just written down on a piece of paper or they can be added to the last posting of the mentee as a comment in the e-portfolio software.

What/how the students learn is the main focus of observation and as a consequence circumstances that are positive or negative for student learning are discussed. The findings of the interview are not used to point out the things that are worth to be changed in the mentees' behaviour, but to establish principles and personal background theories for their own educational practice. This affects not just the mentees. The findings can also serve mentors for the enrichment of their own teaching. Debriefing ends with a reflective summary of the mentees. Experiences, insights and implications for further work are recorded. The observations of the mentor and the common findings and discussion points should also be noted in a blog posting of the learning diary. A guide or structure for such a posting for mentees and mentors could be the GROW-model which means [12]:

- **Goal** setting for the session (short and long term).
- **Reality** checking to explore the current situation.
- **Options** and alternative strategies or courses of action.
- **What** is to be done, **When**, by **Whom**, and the **Will** to do it.

It is ideal, if mentors also write a comment to this posting at last to evaluate postings and the performance of the mentees. In this sense mentors can motivate the student teachers by giving information about the progress of the student teachers and about their self-assessment in the postings. They can also give the mentees an overview of what should be done in the near future of their cooperation.

On the one hand these blog postings generally are a part of the complete learning diary, that can be read as a blog. The students can decide themselves who is allowed to read the blog and who is not. This blog shows the learning progress of the student teachers through the whole induction phase. On the other hand these postings shall also be placed as reflective artifacts in a special e-portfolio view about the topic that includes planning, handouts, worksheets and probably pictures and videos.

IV. PROFESSION-RELATED SEMINARS IN TEACHING E-PORTFOLIOS

In addition to personal support by mentors, teachers shall receive profession-related support from experts in the field of teacher education in the induction phase. One possibility of implementing such support would be regional courses which are accompanied with e-portfolio software. These seminars offer young teachers an opportunity to network with colleagues and experts to get profession-related input and reflect on their current professional situation of entering the teaching profession.

If profession-related training courses are offered in the induction phase to support teachers, they can be seen as steps to professionalism and are as a consequence a part of this portfolio of development, called "teaching e-portfolio". In the e-portfolio views it is possible to use the digital portfolio for personal knowledge management. The teachers simply collect artifacts such as text documents, presentations, seminar content, photos and video clips. Written tasks can also be published via the e-portfolio software by uploading a file and adding it to the e-portfolio view. Finally, reflections are to be created about the seminar. Again young teachers can write blog postings

in the learning diary about seminar content, collaborative tasks and so on. The software enables giving peer-review feedback about the created views so that young teachers can learn from each other in a form of social support. Possible topics for profession-related seminars can be [18]:

- Dealing with personal resources
- Work with parents, parental education
- Confidence in classroom
- Values, standards and limits
- Assessment and reflection
- When is teaching good teaching?
- Support services for teachers
- Professionalism in teaching and rhetoric

One profession-related seminar normally consists of an activation phase to refresh previous knowledge, the seminar itself and a post-phase, in which teachers have to carry out collaborative tasks. For that peer groups are formed in the seminar in order to fulfill tasks collaboratively until the next seminar takes place.

V. PEER-LEARNING IN TEACHING E-PORTFOLIOS

The formation of peer groups in combination with e-portfolio work has found its way to university several years ago. Danube University Krems in the master's program "eEducation", and Vrije University Amsterdam can be mentioned as two examples. In Amsterdam the installation of such peer groups is justified with the argument, that the educational psychology has the opinion that learning is to be seen as a social event. As a consequence peer feedback can be used to improve learning outcomes in the e-portfolios [6].

The community features of the e-portfolio software enable young teachers to maintain the contact with the other peers and to create feedback. In the learning process it is possible to comment on postings in the learning diary and on e-portfolio views. The unique potential of peer-learning lies in the fact that it favours the creation of networks in which teachers can support each other. The e-portfolio software provides social networking tools for peer-work to make communication between peers easier. Collaborative group views can be created and group data can be managed.

Although in other professional groups and organizations forms of internal knowledge management are successfully practiced, for various reasons no general culture of peer-learning has been established in schools in Austria yet. Although there already are teachers in the school system who are communicating with each other and networking in a professional and high-quality type, it has not become the normal case. When peer groups are formed in the induction phase it is not just meant for the collaborative tasks of the post-phase of profession-related seminars. The teachers shall also have an eye on the learning diary of other colleges of the peer group. So young teachers can give feedback and help each other. It is important to be self-critical and honest in these peer groups. It is not just about communicating success, but also about sharing mistakes and failure. Hofmann [13] points out that teachers need a learning diary like the blog in the e-portfolio software and a reflective pedagogical position in order to enable a productive cooperation in the

peer group. By creating postings in an accompanying learning diary young professionals reflect their classroom experience alone in a first step. They ask questions like:

- What negative teaching experience have I worked on?
- What have I planned and how? Did it work?
- What is my conclusion to all this?

Now the peers have the opportunity to read this posting and to attach their feedback in the form of a comment on the posting. They can point out for example, whether they have experienced something similar, or how they would react in this situation. The learning partners are "critical friends" for each other. They analyze the concrete situation, a project or the entire experience and try to empathize. They possibly try not to use evaluative statements and hasty solutions. If e-portfolios are also used for the representation of a personal learning progress and assessment during the career entry, peers may also be used for feedback before a final submission, for review or rating. In this case the peers have a critical eye on the content of the views of their group members. The software, however, provides the opportunity for peers and for tutors to give written feedback to the teachers on the bottom of the view.

VI. A POSSIBLE STRUCTURE FOR TEACHING E-PORTFOLIOS

The young teachers welcome readers of their e-portfolios on their profile view, which they fill in according to their personal preferences. Compulsory elements are reflections on philosophy, principles, strategies and methods of their own teaching. From this page, links lead the readers to the various other views they have created.

During the induction phase, the teachers also create a variety of teaching materials. Successful lesson plans, well done worksheets, handouts and presentations can be stored in the views. For each artifact there is also a reflective artifact to be created.

Additionally essays, reports, posters and other pieces of work done by students are also an important part of teaching e-portfolios, which can be built in e-portfolio views with the permission of the authors.

Photos, video clips, presentations and graphics enrich all views created by the teachers for this development portfolio. However, embedding them for the purpose of decoration shall be avoided. All reflective artifacts are very important components of the teaching e-portfolios and usually more important than every decoration.

Of course, the above-mentioned views of the profession-related seminars, the learning diary and its containing reflections and goals of the mentoring process, and all collaborative learning products from peer group work are also part of the teaching e-portfolios. An overview of components of "teaching e-portfolio" views is shown in figure 2.

In the following section the basic structure of e-portfolio views for the implementation of teaching e-portfolios for the induction phase is presented and explained. This example is divided into eleven main sections or views. The main views, for example, are named "01_My teaching philosophy,". Subpages for example are titled "03.1_Music7_Musicals". Here number seven stands for the 7th school year. For all bold titles e-portfolio views are to be created. After all main views ex-

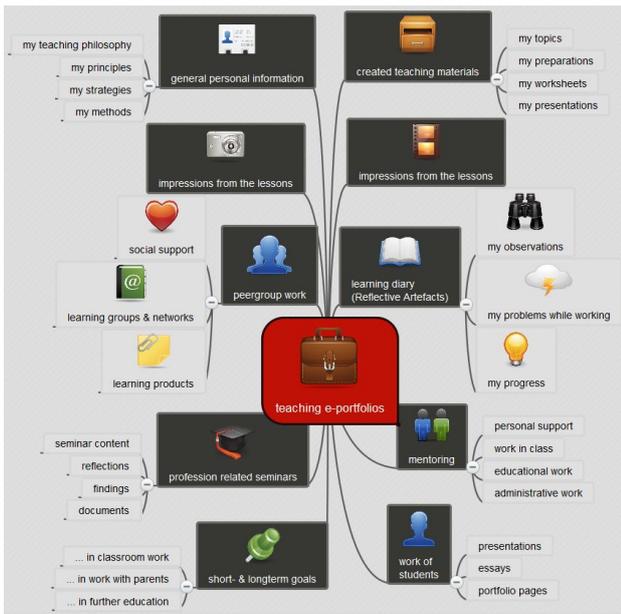


Figure 2. Components of "teaching e-portfolio" views
(<http://tinyurl.com/teaching-e-portfolio>).

planations to the contents of the e-portfolio views are given:

01_My teaching philosophy

Teachers write a text reflecting on the following questions [14]:

- What do I believe is the role of a teacher?
- What do I believe is the role of a student?
- Why do I teach?
- What does good teaching mean for me?
- What can my students expect from me?

02_My teaching methodologies

Teachers can think about the following questions and also can write a text about it [14]:

- Why do I choose the teaching strategies and methods that I use?
- How could I describe my particular teaching style?
- What do I do in the classroom and outside of it?
- How do I assess student learning?
- What kind of feedback do I give to students?

03_My topics: lesson planning, teaching and reflecting

03.1_Music

03.1.1_Music7_musicals

03.1.2_Music7_AcousticRecording

03.2_English

03.2.1_English5_OurWorld

03.2.2_English5_Names and Addresses

As an example for views of the area 03, the subjects Music and English are given. As described in chapter III, views about various topics are created. The views contain for example templates for teaching materials, worksheets, tests, lesson plans, reflective blog postings, and comments of mentors to preliminary of lessons, the lesson itself and debriefing of the lesson. In these views there is also space for video recordings of teaching sessions and the corresponding reflections from the teachers themselves and

from mentors. In the comment section at the bottom of the views feedback of peers and mentors can be found.

04_Teaching material I produced

In addition to the materials themselves like handouts, the teachers can insert pictures or videos of classroom situations, in which students use the created materials successfully. For instance there is also place for filled out worksheets, self made musical instruments, successful free work or crossword puzzles.

05_My learning diary

In contrast to area 03, where just the corresponding blog postings are included into the views, view 05 encompasses the whole blog of the induction phase. This includes all the blog postings and comments on all subjects and activities of the young teachers. The learning diary illustrates the learning progress in all kinds of educational work of the young teachers.

06_Efforts to improve my teaching

06.1_My profession-related teacher training seminars

06.1.1_Dealing with my personal resources

06.2_That's me: What I created new

In area 06 all training courses that are attended in induction phase are included, for example some profession-related seminars that are mentioned in chapter IV.

Here teachers create a view for each seminar session which includes prior experience, expectations and goals, peer group activities, reflection in the form of blog postings and a résumé with an outlook into the future. In the area 06.2 teachers have the opportunity to present what they personally have made differently or new, or what distinguishes them as a teacher.

07_Work of students as evidence of my work

07.1_Music

07.2_English

Contributions in the area 07 can be very diverse, ranging from individual written work such as essays, open learning over videos of English sketches, sung contributions of a class choir to posters or PowerPoint presentations that were created by students for presentation in classroom.

08_Educational activities outside of the classroom

The area 08 also offers a lot of options, for example the planning, performing and reflecting all kind of school excursions, as well as reports on collaboration with colleagues in teams. If young teachers are consulted by students or parents about personal problems or issues of school guidance, so the experience gained from these conversations, reflections and opinions can be just stored here [15].

09_My goals - an eye into the future

This section of the e-portfolio is always looking forward. The formulation of short- and long-term goals helps the teachers to figure out possible additional projects and activities that can be positive for further development of the young teachers. Useful questions could be [14]:

- What teaching goals have I been unable to attain in the past that I would like to pursue now?
- Why are they important to me?
- What kind of resource help (people? money? space? time?) do I need to achieve these goals?

10 Impressions

If the young teachers are impressed by individual teacher personalities or actions, by outstanding student achievement or by lessons of other teachers, short reports or pictures can be placed here in area 10. Additionally a personal statement about the position of young teachers at their schools and in their peer groups should also be added to this area of the "teaching e-portfolio"[15].

11 Appendix

If there are any other reports, pictures, videos or blog postings that are relevant for showing the personal progress of the young teachers and do not fit into this structure, they can be placed here in area 11.

VII. E-PORTFOLIOS IN BASIC EDUCATION AND FURTHER TEACHER TRAINING

As already mentioned, the career entry is a sensitive phase in teacher education. E-portfolios can only be productively used in the induction phase, when teachers get a systematic introduction into method and software before their actual career entry and if they get constant support during their learning process. If e-portfolios are only being used in an induction phase of teachers, this would just mean additional and extra burden in the phase of career entry. So it could be seen as counterproductive. As a consequence an inclusion of e-portfolio work into basic teacher education, induction phase and teacher training would be desirable [7]. Apart from the use of e-portfolios in the induction phase, there definitely are a number of opportunities in basic education and teacher training:

A. Basic Education:

The basic education of teachers in Austria is now starting with a study entry phase (S.T.E.P.) which lasts for one semester. In this semester young teachers basically can decide if they want to stay in educational profession or not and additionally which specific type of school they would like to teach in. This study entry phase could provide a way of bringing students closer to e-portfolio work at the beginning of their studies. In an introductory workshop the possibilities of e-portfolios as a tool for individualized control of their future learning process can be introduced and concrete examples of the productive use of e-portfolio can be shown to the students [16]. The presentation of various applications of e-portfolios can ensure that students really use e-portfolios.

Simple examples of the use of e-portfolios in basic education of teachers are digital collections of material to various topics [17]. In these e-portfolio views students have the opportunity to store pictures, video clips, worksheets, ideas and suggestions for educational implementation in one place. They can also share these views and invite others for collaboration. All collections started in basic education can also be used or continued later in professional practice.

Students could also collect their learning products of seminars or workshops in basic education in e-portfolio views. So they would place them clearly in one place and have them ready anytime and anywhere. In addition to that, students could also get feedback from tutors or peers, insert self-reflective assessment of their own work or get

written assessment from teachers in the views. Because of the intense interplay of reflections and the documentation of its findings in the e-portfolio software it is possible to make the way to a conscious choice of teaching profession or the choice of a particular type of school at the end of the study entry phase more clearly visible for the students themselves and for others.

Through the presentation of learning products and the related learning reflections e-portfolios enable students to show their individual learning success. Additionally they can present themselves and the learning success. For example didactics seminars could be accompanied by e-portfolios, and serve as the basis for an assessment. If e-portfolios would be used in practical teacher training at schools in basic education, this could be an ideal preparation for the use of e-portfolios in the induction phase of teacher education. The handling of the software and the ability for self-reflection would already be learned in basic teacher education and therefore could be a precondition for the use in the induction phase. In general, however, it remains to be noted that it should not be taken for granted that all students are able to work with the e-portfolio software without getting any support from the educational institution. Students have to learn the necessary reflective skills and the technical handling of the e-portfolio software in basic courses, seminars or workshops and through regular use.

B. Teacher Training:

In times of further training teachers have the opportunity to continue with collecting material on special topics in e-portfolio views as they started before in previous phases of teacher education. E-portfolios can also be used as an accompanying instrument for post-graduate courses at colleges of education. Whenever teachers decide to visit a one-day workshop or attend a perennial training course they can create e-portfolio views to store the material they get from their coaches, pictures, videos, their own notes and all the other documents they get. In using a learning diary they can reflect on their personal learning, their learning progress and organize their future learning. The teachers can contemplate on their previous knowledge, on prospects and goals and can formulate a résumé including an outlook into the future.

VIII. CONDITIONS FOR SUCCESSFUL E-PORTFOLIO WORK IN TEACHER EDUCATION

To reach the real potential of e-portfolios in assessment and evaluation of formal learning it is necessary to adapt curricula and examination regulations. E-portfolios should not be an add-on, they should become an integral part of the studies [7].

The implemented e-portfolio software needs community functions for collaborative learning and social networking. In the peer work a feedback culture can be developed and the teachers can stay in contact after basic education.

Just the initialization of e-portfolio software for teacher education is not enough to achieve improvement in teacher education. Both, mentors and teachers have to get active. For the acceptance of e-portfolios mentors should use the software themselves.

SPECIAL FOCUS PAPER
TEACHING E-PORTFOLIOS IN TEACHER EDUCATION

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