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SCAFFOLDING VOCATIONAL STUDENT TEACHERS' COMPETENCE DEMONSTRATION ON THEIR EPORTFOLIOS

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Abstract

ePortfolios are not a new concept and there have been studies from different perspectives related, such as a professional learning design, development planning, technology and a reflective tool. This study focuses on more detailed way what kind of competences vocational student teachers have made visible in their ePortfolios and how. The interest focuses on exploring what kind of pedagogical and digital competences are visible in ePortfolios. The study explored what kind of artifacts and sections are ePortfolios composed of and what kind of digital and content quality ePortfolios represented. The main artefacts that were studied were learning designs, development work report and a general use of ePortfolio tools. The pedagogical competence was studied by using a framework of the Technology Enhanced Pedagogical Infrastructure that is formulated with four components: technological, social, epistemological and cognitive. These four components are the basic, and at the same time, very general frame for creating learning designs or evaluating them. The framework was used to create a more detailed and practical evaluation frame that was drawn from vocational student teachers' learning designs presented in their ePortfolios. The Concept of the Digital Competence was used to evaluate student teachers' digital competence. Even there is no overall consensus of the digital competence there is a need to find a common ground for using it in different educational practices. Technology is not a specific content to learn but more a didactical approach to be implemented in substance and to be consider as a wide concept. The Concept of the Digital Competence that was used in evaluating ePortfolios includes definitions of technical skills, ability to use and apply digital technology for working and studies, critical use of various technologies and understanding of computational thinking and robotics, and motivation to participate and engage in digital culture.

The study reveals that there is a lot of variation of student teachers' ePortfolios; some of them were left unfinished and some of them represented a high quality of pedagogical and digital competence. Making individuals competence transparent in a digital format is complicated. More guidance and scaffolding are required regarding how to create an ePortfolio and store competences in a digital format. Student teachers' motivation to use ePortfolio in their learning activities and competence demonstration was also studied in order to discover what kind of scaffolding they require. Finally the study presents some ideas how to scaffold ePortfolio activities in a way that motivates student teachers to use ePortfolios in their learning processes and with their own students after their teacher studies. This finding relates to the discussion of the continuing learning that occurs through an individual's career and life.

Keywords: ePortfolio, student teachers, competence objectives, assessment criteria

1 INTRODUCTION

ePortfolios are for making competences visible in digital format. Nowadays multimodal documentation is used in a format such as texts, pictures, photos, videos, figures that make competences visible in a multifaceted way [1]. ePortfolios are reciprocal and reflective [2] and they are not just learning but also improves candidate's employability when it is presented for audience such as employers, career advisors and professional communities [3]. It is important that the information and competences presented in ePortfolio meet the requirements of professions. [4] suggests that ePortfolios should be organised around competences. ePortfolios are tools for continuous learning by supporting its' owners understanding of their personal competences and needs for the professional development and, in addition, it is suggested that ePortfolio tools should be chosen by students themselves in order to continue working with the ePortfolios after the studies [5]; [6]. Creating an ePortfolio is not an easy task for student teachers [7];[8] and it requires much guidance and scaffolding from teachers [9].

In practice ePortfolios mean creating a personal development plan, reflecting own competences, exploring personal growth and a systematic utilization of an ePortfolios after studies during the future career [9] ePortfolios represent an authentic evidence of work experience and professional expertise that is criteria-based promoting a formal validation of competences acquired in the world of work and it include a strong objective to demonstrate a personal competences [10]. If the competence recognition is conducted publicly e.g. with open badges or other accreditation system it supports to use a personal competences, to see new possibilities and grow as a professional expert [11]. Writing the competence objectives the competence-based approach is used that is recommended to utilize by European Union [12]. It means among other issues that learning is always context orientated and answers to the questions such as why, what and how in order to open methods to written competence objectives and assessment criteria [13]. According to [13] research the format of contextualizing helps to connect learning objectives to practical learning designs and their construction. Contextualizing can be understood authentic learning in vocational education and training sector. [13] has defined the contextualizing in order to understand competence objectives and assessment criteria in easier way that gives room for development of curriculum and learning design practices, and in addition, it should foster collaboration with representative of the world of work. Contextualising is especially important in a relation with the world of work when work tasks are needed to be wide enough but at the same time flexible with time and place [13]. The competence demonstration is made by implementing theories in practice and that is described in visible format e.g. in ePortfolios. Defining competence criteria it should inform the scale of the competence demonstration and all the evidence it is required [10].

Student teachers need quite a much scaffolding to use ePortfolios that is not only related to digital competences. To work with ePortfolios it requires own competence objectives among other issues such as assignments with peers and constant feedback from a teacher in order to make sure that objectives and audience of ePortfolio work are clear for those who create ePortfolios [9]. When criteria for ePortfolios are defined they can be used in recruit processes and in planning HR management, continuing learning and supporting tool for improving work processes. ePortfolios are motivating tools to competence demonstration and can be seen useful in all school levels and continuous learning. [10]

2 METHODOLOGY

This case study concludes two previous studies that are in the context of the vocational teacher education. The studies explored how student teachers have demonstrated their competences via their ePortfolios, what motivates them to study and demonstrate their competences through ePortfolios and what kind of scaffolding they need in order to demonstrate their competences successfully through their ePortfolios. The aim of the study was to find even more guidelines of ePortfolio activities for teacher students to work towards personal competence development that teacher may guide successfully.

In the first case [14] studied what kind of competences student teachers make visible in their ePortfolios while they were studying their teacher education program. They based the evaluation of ePortfolios on [15] technology enhanced pedagogical infrastructure framework and discovered what kind of pedagogical and digital competence student teachers have. In addition, they used [16] digital competence definition as an indicator to evaluate student teachers' competence to use digital tools; first to create ePortfolio and second, by witch digital tools they have crated their artefacts in their ePortfolios. By the study, it was revealed that some of the ePortfolios were in an excellent level and at the same time some of them were very light and not describing even the whole truth of the student teachers' competences. It was clear that more scaffolding was required to use ePortfolios during the teacher studies and motivating student teachers to apply ePortfolio practices into their own competence demonstration. In addition, the objective to use ePortfolios lays also in a fact that it is a tool for continuous learning by supporting its' owners understanding of their personal competences and needs for development. [14]

In the second case, because of composing an ePortfolio is not an easy task for student teachers [14]; [7]; [8] it was useful to discover what motivates student teachers to create ePortfolios and what kind of scaffolding they require. In the second case [17] found out that student teachers were actually very motivated to work with ePortfolios because they find the ePortfolio concept a modern approach to teach and learn, they get to use several new digital tools, and they were satisfied to see their own development and growth as a teacher. Student teachers required scaffolding activities from several

actors, not only from a teacher. According to [17] these scaffolding activities were provided by teachers, digital learning environments, workplace mentors, and peers that was the most important support they required during the ePortfolio process. One specific point student teachers named they needed to support in their ePortfolio process was that competence objectives for ePortfolio work is required as in all learning processes the specific content related learning or competence objectives are given. [9]

The two previous presented studies were analysed exploring the vision of the competence objectives that would help teacher students to create and work with ePortfolios. The case study was used in order to explore this particular phenomenon [18]. The study is conducted with qualitative research method while the data is a word, images and categories [19].

3 RESULTS

The two cases indicate that several expectations are set for working with ePortfolios during the studies and in order to support the continuous learning perspective after studies during the teacher career.

The first case revealed that student teachers' ePortfolios presents practical demonstrations of teachers pedagogical thinking in a format of learning design and project work related to pedagogical practices. The learning designs were studied with more detailed way because pedagogical approaches are seen clearly via them. The expectations are that pedagogical competence includes components that describes what kind of technologies are used in learning processes and how, does a learning process include social activities with peers and what kinds of, are learning assignments authentic, and are peer- and self-assessment assignments given as well as learning objectives explained. In addition, expectations are to describe also teachers' activities of scaffolding and given feedback. All requires aspects are expected to create with multimodal digital tools in many various ways. [14]

The second case revealed that student teachers' ePortfolio process promotes teacher career, starts a new process for continuous learning, and supports personal growth and development of one's own teacher competence. These three approaches include expectations such as competence of demonstrating competences, using digital tools, understanding a new technology, use new learning methods, continuous use of ePortfolios, finding own teacher identity, promote benefits to use ePortfolios with own students, and continue to reflect one's own work and growth in ePortfolio. [17]

Based on results of the two previously mentioned studies the competence objectives for making personal ePortfolios are as follows:

A student teacher can

- promote their own teacher career by making pedagogical competence visible through ePortfolio,
- use digital technology in composing an ePortfolio,
- utilize ePortfolios for ongoing and lifetime learning of teacher competence, and
- promote benefits to use ePortfolio concept with their students.

The assessment criteria based on these competence objectives are as follows:

A student teacher

- makes their pedagogical competence visible among substance competence,
- uses digital tools for composing an ePortfolio,
- collects feedback and assessment from peers, lecturers, workplace trainers and students as well as makes it visible in ePortfolio,
- knows how an ePortfolio can promote their career,
- participates in communication in peers' ePortfolios,
- uses digital tools in various and modern ways to promote their competence,

- understands the benefits to use ePortfolio after studies for continuous learning purposes;
- makes their teacher identity visible,
- composes own development plan and follows as well as reflects it, and
- explores possibilities and plans methods to take ePortfolios as a part of their own teaching practices.

Instructions for competence demonstration as an evidence are drawn from the assessment criteria. The evidence includes digital description of the pedagogical competence in various viewpoints such as teaching and guiding methods, learning environments, applied curriculum practices, learning designs and teaching practices. The owner of the ePortfolio writes also own pedagogical development plan and objectives related as well as reflects competences in line with the ePortfolio competence objectives. ePortfolio includes evidences of it's content's accreditations. Finally, the competence demonstration include plans for taking ePortfolios as a part of teaching practices.

4 CONCLUSIONS

In order to make ePortfolio activities clear during studies and for future work career after studies the specific competence objectives and assessment criteria for ePortfolio work are defined. The assessment criteria were written in a way that competence demonstrations are authentic real life implementations that [10] suggested. Criteria are also context related [13]. Using ePortfolios it requires implementation with learning process and curriculum design [20]; [21]; [4] and concrete criteria for the ePortfolio work helps students to see the level of the required competence. The clear instructions for a competence demonstration were written as [10] have suggested by their studies. When student teachers create ePortfolios it helps them to understand the pedagogical competence and practices of teaching profession [22]. Assessment criteria should help student teachers to see what is expected from their work with their ePortfolios that offers them a means of developing their competences and planning their own careers [23]. The assessment criteria for ePortfolio work gives frames to see the need of the continuous learning now and in future and helps person plan a suitable learning path for their own development.

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