e-teaching portfolio development : Scoping Review

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Abstract

The purpose of this study is to develop an e-teaching portfolio to perform a teaching portfolio of an instructor on the web. I order to carry out this study, an initial model of the e-teaching portfolio was developed through systematic literature review, and the final e-teaching portfolio was developed by selecting and applying five students, then modifying and supplementing them. The study period was from May 1 to May 20, 2022. As a result of the study, the components of the finally developed e-teaching portfolio are Step 1: Understanding oneself, Step 2: Goal setting, Step 3: Learning strategy, Step 4: Self-check. In conclusion, the program developed through this study is a convenient function that can process everything in one place by connecting the fragmented teaching results, and the developed e-teaching portfolio can promote interaction between individuals by building a community. It has possible characteristics. In order to systematically activate the e-teaching portfolio developed through this study, it is necessary to establish an online management system for systematic operation. Furthermore, an institutional device is needed to guarantee the result of the developed e-teaching portfolio. In order to continuously manage the quality of the teaching portfolio, extrinsic rewards that stimulate the instructor's intrinsic motivation should be provided.

Keywords: College student, e-teaching portfolio, instructor

1. INTRODUCTION

Recently, rapid social change has become a society in which no one can expect certainty about their future life. These changes in society require that we do not spare efforts to increase our own value by securing competitiveness through continuous self-development, and universities must fulfill their responsibility to lay the foundation for this. Until now, education in Korea has been recognized as a driving force for individual success and economic development. In particular, higher education has played an important role in the national economic growth [1]. In order to meet the rapidly changing society and fulfill its social responsibilities, university education as a higher education institution must be flexibly applied to the characteristics of learners and the educational environment, including the specialized content of study, and education that does not break the basic framework must be provided. In line with this global trend, many universities in the United States, Europe, and Australia are currently building an on-line portfolio system to accommodate social requests and to effectively and systematically deliver and evaluate professional educational contents, thereby contributing to learning activities and evaluation. is being used [2].

Portfolio is a word derived from Latin and is said to be a compound word of 'portare' meaning 'to carry' and 'folio' meaning 'document' [3]. The first use of portfolio mainly meant a collection of works in the fields of art and architecture, but recently it has been used in various academic fields. The term portfolio began to be used as the term teaching portfolio in university education [4]. The Teaching Portfolio describes the educational strengths and achievements of a professor, and shows the growth of the instructor's knowledge, skills, experience, and professionalism formed over a long period of time in one place. In other words, it can be said that it is a collection of materials that show what kind of experience the instructor has gone through for education, and the achievements he has achieved through that experience [5].

The teaching portfolio, which is being used in the education field, is widely used as an alternative to the traditional evaluation method and is recognized as helping the professional growth by providing an opportunity for the instructors to self-reflect. This is because it can be said that the basic method of a portfolio is to have a sense of reflection and responsibility through reflection on one's own learning activities and to lead the professionalism of the portfolio creator himself. The portfolio for learning used in universities is used as an alternative evaluation to the standardized and fragmented evaluation methods that have been conducted so far, so that the instructor can self-evaluate and reflectively reflect on his/her teaching activities to help develop his/her professionalism. can do [6].

In order to develop a teaching portfolio model, it is important to extract components that match the purpose of the portfolio. Since the teaching portfolio is an individual product and reflects an individual's unique appearance, in principle, it can be composed of different elements [4]. Nevertheless, it is possible to extract common contents included in the teaching portfolio for the purpose of professional development of professors in general. Looking at the components of the teaching portfolio according to scholars, in 1994, Doolittel and zubizarreta found that the teaching philosophy of the instructor, the role of the instructor, the long-term and short-term goals of the teaching activity, teaching method and teaching strategy, teaching materials, teaching activity results, learners and colleagues Suggested efforts for evaluation and analysis of instructors and professional development [7-8]. In 2001, Bailey, Curtis & Nunan found that educational philosophy, class content, class observation and analysis, class log content, video recording content, learner feedback, learning results, class materials, expert data, and professors Presentation on learning, conference activities, committee activities, and volunteer activities were suggested [9], and Seldin et al., reported educational responsibility, educational philosophy, educational goals, strategies, methods, instructional materials (syllabus, lecture materials, assignments), student evaluation, classroom observation, faculty material review, and lecture improvement efforts (curriculum curriculum). improvement, participation in pedagogical conferences and workshops, educational innovation), student learning outcomes, the dean's opinion, education-related awards, students' responses to diagnostic questionnaires, student learning evidence, and appendices were suggested in 2010 [5]. Summarizing the above contents, it can be seen that the components of the teaching portfolio commonly present educational philosophy, teaching methods, teaching materials, and learning outcomes.

The e-teaching portfolio is an abbreviation of the electronic portfolio, and electronic technology and portfolio are integrated. That is, multimedia materials such as text, sound, image, graphic, and video and a computer-based web portfolio are used to collect data for the purpose of evidence, achievement, learning progress results, and demonstration. A web portfolio is a transfer of this digital portfolio on the web, and wherever the web is connected, it has the characteristic that it can be written and evaluated anytime, anywhere. Therefore, it can store an incomparable amount of data compared to a paper-based portfolio, and manage it more efficiently while easily modifying and attaching data. Through this, it can be used not only as an alternative evaluation tool for educational performance, but also as a systematic management tool for students preparing for graduation and employment. In other words, it will be a storage for longitudinal teaching management activities.

In addition, the e-teaching portfolio provides a method to make the instructor's teaching method and result prediction in the next education reasonable and reasonable by accumulating the experience of applying systematically designed educational methods on the web. In addition, various examples contained in the portfolio guide the direction of what to prove in order to predict the results in the next educational environment, and reduce the teachers' anxiety about education by predicting the preparation for future education. The specific purpose of this study for the development of an e-teaching portfolio with such various advantages is to cultivate the competence of experts in instructors, and to check the development process and results of interactions with learners anytime, anywhere. It is to develop a teaching portfolio system that guarantees the quality of education by making the parts easily accessible. The e-teaching portfolio developed through this study can be used to collect and manage evidence of the learner's development and competency if it is used according to the achievement of the teaching purpose or the intended purpose, and furthermore, members who can access the e-teaching portfolio Everyone will refer to the parts they need and will be a reference for effective teaching, and based on this, they will be able to develop more professional teaching.

2. METHODS

2.1   Research design

This study is a study to develop an e-teaching portfolio that can be taken out of the stored web whenever and wherever necessary by systematic literature review and analysis of domestic and foreign papers of 22 papers on the teaching portfolio within the last 10 years. The development process was based on the experience of the researcher's teaching portfolio, and the final 13 articles were selected for research after excluding those that were duplicated or did not meet the purpose of this study. The developed initial model was applied to 5 participants and corrected to complete the final model (Figure 1).
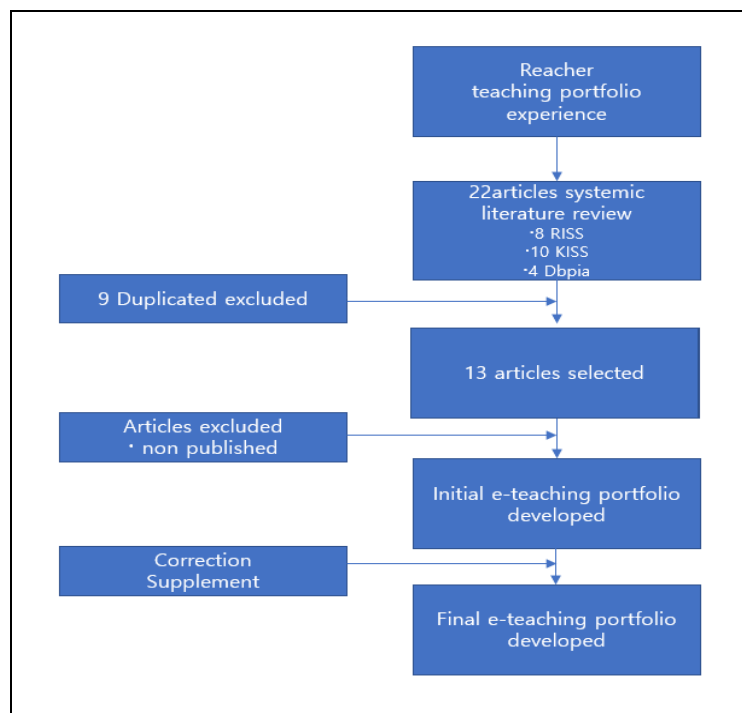

Figure 1. Research design

2.2   Research purpose

The purpose of this study was to develop an e-teaching portfolio applicable to university educational institutions. In order to develop the e-teaching portfolio, The literature to be finally analyzed in this study is based on the Cochrane collaboration's systematic review handbook [10] and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) group's systematic review reporting guidelines   carried out from 2000 to now and 15 years of teaching experience [11] For the developed teaching portfolio, an initial model was designed through revision and supplementation(Table 1) after a pilot study was conducted for 5 students. The e-teaching portfolio developed through this study will verify the applicability based on the evaluation of computer engineering experts, and then apply it to actual lectures to determine the suitability of the model. In addition, the refinement of the constructed model after the completion of the model fit will be presented as a research result in the future. The procedures and available tools of the developed e-teaching portfolio are as follows.

Table 1. The initial model of e-teaching portfolio

Component		Format and data type
Understanding of the instructor	• Identity as an instructor • Education Philosophy and Goals	Reflection paper Worksheet
Goal setting	• Class Goal Analysis • Lesson Topic Analysis	Lesson plan Worksheets worksheets Audiovisual materials
Learning Strategies	• lesson design • Developing instructional materials • Class observation and analysis • Set the evaluation method	syllabus New professors and textbooks class recording Student work assessment results
Instructor self-check	• Self-class critique • Peer Professor Feedback	class recording video class log class analysis report peer review

2.3   Procedure

2.3.1 Understanding of oneself

It focuses on figuring out what the instructor himself/herself has taught so far and what his attitude toward the learner's guidance is. As he/she collects and organizes the content she has guided for the creation of his/her portfolio, he/she is looking into what he/she has done. In other words, he/she understands his/her present and how he/she has changed.

2.3.2 Goal setting

The instructor refines the educational plan to achieve the goal. At this time, the portfolio decides where and what kind of classes will be conducted.

2.3.3 learning strategy

Various learning outcomes (examples) are organized in the portfolio so that learners can learn more

efficiently and autonomously by using learning strategies that are appropriate for the class goals according to the learners' situation. In other words, the specific learning activity output presents the form and type of evidence for each component.

For example, a syllabus is attached as a product related to 'syllabus design', and a lesson design is a lesson plan, worksheet, worksheet, audiovisual material, evaluation paper, etc.

2.3.4 Instructor self-check

In this stage of self-inspection of the instructor, he/she checks his/her responsibility for the class by systematically analyzing the class, monitors the class through the teaching portfolio, and evaluates his/her own results.

2.4 Available tools (free or low cost)

The e-teaching portfolio can be utilized if it is applied to computer technology using tools developed for free or low cost so far, and the available tools are as follows [12].

2.4.1 b-learning(CANVAS)

2.4.2 Wordpress

2.4.3 Edublog

2.4.4 Google Site

3. RESULT

As a result of pilot application of the developed e-teaching portfolio, the revised and supplemented e-teaching portfolio is shown in Table 2.

Table 2. The final model of e-teaching portfolio

Component		Format and data type
Understanding of the instructor	• Identity as an instructor • Education Philosophy and Goals	Reflection paper Worksheet
Goal setting	• Class Goal Analysis • Lesson Topic Analysis	Lesson plan Worksheets worksheets Audiovisual materials
Learning Strategies	• lesson design • Developing instructional materials • Class observation and analysis • Set the evaluation method	Syllabus New textbooks Class recording Student work Assessment results
Instructor self-check	• Self-class critique • Peer Professor Feedback • Participate in the latest teaching methods (additional)	Class recording video Class log Class analysis report Peer review Summary of the latest teaching methods (additional)

Convenience and quality of content were improved by abbreviating repeated content in the initial model, and deficiencies discovered by applying the initial model were added. In the stage of self-understanding, the

identity as a teacher was deleted because it overlapped with the educational philosophy. It was found that 20% of the students who participated in the initial model application did not reach the expected goal. As a result of the Delphi survey of fellow professors, they came to the conclusion that the teaching method needs to be supplemented.

4. CONCLUSION

This study is an e-teaching portfolio that combines the teaching portfolio that researchers have used for classes and electronic technology. In addition, the literature review of teaching portfolio studies that have been studied so far, in order to secure the validity and objectivity of the teaching portfolio, the final file was written after the pilot study after program development.

Güzeller, Cem Oktay raised the need for a personal life web space that covers the whole life for everyone [13]. The e-teaching portfolio developed in this study is that instructors can refer to the part they want very conveniently and quickly when they want by collecting all the teaching contents, methods, and prediction of results. The first expected outcome of this e-teaching portfolio is the continuity of education. Since this e-teaching portfolio can access their teaching results at any time, instructors will be able to maintain the teaching method for a longer period of time and solve new problems by linking the fragmented teaching results. The second is the convenience of having everything in one place. The third is the connection function that promotes interaction between individuals by building a community. However, in order for the developed e-teaching portfolio to be systematically activated, the establishment of an online management system for systematic operation must be prioritized. Furthermore, an institutional device is needed to guarantee the result of the developed e-teaching portfolio. In addition, in order to continuously manage the quality of the teaching portfolio, external rewards that stimulate the instructor's intrinsic motivation should be provided.

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