

Original Article (Mixed)

Presenting the model of self-directed professional development of student teachers based on the smart learning approach

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Abstract

The aim of the current research is to present a model of self-directed professional development of student-teachers based on the micro-learning approach. According to its purpose, the research method is applicable; in terms of execution method, it is mixed (qualitative-quantitative); and in terms of the nature of information collection, it is descriptive-survey. The statistical population in the qualitative section includes 11 faculty members in the Farhangian Universities of Mazandaran, Tehran, Zanzan, Isfahan, and Shiraz, as well as Allameh Tabatabai University and Azad Islamic University of Mazandaran, selected by purposive sampling. The statistical population in the quantitative part includes the academic staff members of Farhangian University (the North Pole of the country), including the provinces of Mazandaran, Golestan, Gilan, and Semnan, as many as 456 people, of which 210 people were selected by stratified random sampling based on the Morgan table. Data collection was done by semi-structured interviews in the qualitative part, and by the questionnaire in the quantitative part. Delphi method and MAXQDA software were used in qualitative part data analysis, and SPSS and PLS software were used in quantitative part. The results of the data showed that this model has three main categories of antecedents (with 5 dimensions and 40 indicators), processes (with 3 dimensions and 36 indicators), and consequences (with 2 dimensions and 19 indicators). The ten dimensions of the model include: 1) immersion in professional learning situations; 2) creating platforms for empathetic and emotional participation in the category of learning; 3) cooperative orientation to learning; 4) University's emotional support for micro-learning activities; 5) Accompanying and coordinating the academic curriculum with a micro approach; 6) micro-content knowledge; 7) Ability to design micro-content; 8) the skill of using micro-content; 9) professional self-management of student-teachers (individual and organizational); 10) Effectiveness of micro-learning of learners. The overall model fit index (GOF) was obtained as 0.620; which shows the overall fit of the model.

Keywords:

Self-directed professional Development, Micro-learning, Professional learning, Empathetic and emotional participation

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Extended abstract

Introduction

One of the basic issues in the higher education system of teacher training is the quality of educational programs. Educational programs should be designed comprehensively and according to the real needs of teachers and cover topics related to teaching, teaching methods, classroom management, teacher-student communication and other professional skills of teachers. Also, the quality of teacher education directly depends on the performance of professors and lecturers in universities and educational institutions. Professors must have the necessary expertise and experience in the field of teaching and teacher training and be able to convey professional concepts and skills to students in a complete and comprehensive manner (Namdari et al, 2022).

Self-directed professional development is based on the responsibility and learning of the individual; therefore, it requires theories and methods that are suitable for this type of development. Among the different learning theories, the micro-learning theory is more likely to be suitable for the development of self-directed professions because it provides learning at the disposal of the individual and with his own control and supervision, and it is also highly effective. Therefore, education based on micro-learning has been considered as a new strategy and approach to provide correct information to learners, facilitate learning and development of educational services and easy and smooth access to these services in order to help learners in building the meaning of personal learning and growing experiences (Naterilo, 2020). Based on this, knowing the effective components on the self-directed professional development based on micro-learning in electronic education led to the formation of the main problem of this research, so that the question is raised that: "what model can be designed for the self-directed professional development of student-teachers based on the micro-learning approach in the Farhangian university of Mazandaran culturalists?"

Theoretical Framework

Professional development

Professional development means that teachers update their knowledge, attitude, skills and abilities in relation to their duties and roles such as teaching, research and evaluation in accordance with environmental and technological changes so that they can be effective and efficient in carrying out the process of students' education (Howard, 2020).

Self-directed learning

Self-directed learning is an approach to the learning process; which encourages learners to identify their learning goals or needs through shared knowledge and collaborative decision-making. This approach allows learners to use learning strategies to meet these needs; strategies such as search, independent learning and experimental techniques, and formation and development of individual and group progress evaluation towards achieving defined goals. Self-directed learning methods include independent study of the learner, alone or in collaboration with peers (Van Woezik et al, 2021).

Micro-learning

Micro-learning is a creative teaching method that can use one or more technologies to improve education. Some of these technologies include online games, video clips and podcasts, multimedia presentations, simulations, blogs, and quizzes. Cognitive load theory shows that effective educational materials direct cognitive resources to activities that are related to learning instead of learning prerequisites, and thereby facilitate learning (Jabbari & Rastgarpur, 2020).

Zhang (2023) carried out a research entitled "Teachers' self-directed professional development in poor resource contexts: How important are open educational resources?" The results show

that the teacher's self-directed professional development based on open educational resources involves the process of struggling with various factors inside and outside the classroom, including his previous expectations of open educational resources and the alternative educational experiences he has gained in the implementation of his professional development. The teacher gradually developed a flexible and critical understanding of open educational resources as crucial resources in sustaining self-directed professional development. This study concludes that open educational resources were useful in the teacher's self-directed professional development process despite the complexity of their use.

Kusar et al, (2023), conducted a research with the aim of "investigating the effect of teachers' self-directed professional development on their educational performance". The objectives of the present study were: to explore the components of self-directed teacher professional development, identify teaching practices of high school teachers, and explore the impact of self-directed professional development on teaching practices. Self-directed professional development was found to have a strong impact on teaching practices. It is recommended that teachers may adopt modern self-directed professional development practices to improve educational standards.

Research methodology

The research method is applicable in terms of purpose; mixed (qualitative-quantitative) in terms of execution method; and descriptive-survey in terms of the nature of information collection. The statistical population in the qualitative section includes 11 faculty members in the Farhangian Universities of Mazandaran, Tehran, Zanjan, Isfahan, and Shiraz, as well as Allameh Tabatabai University and Azad Islamic University of Mazandaran, selected by purposive sampling. The statistical population in the quantitative part includes the academic staff members of Farhangian University (the North Pole of the country), including the provinces of Mazandaran, Golestan, Gilan, and Semnan, as many as 456 people, of which 210 people were selected by stratified random sampling based on the Morgan table. Data collection was done by semi-structured interviews in the qualitative part, and by the questionnaire in the quantitative part.

Research findings

Delphi method and MAXQDA software were used in qualitative part data analysis, and SPSS and PLS software were used in quantitative part. The results of the data showed that this model has three main categories of antecedents (with 5 dimensions and 40 indicators), processes (with 3 dimensions and 36 indicators), and consequences (with 2 dimensions and 19 indicators). The ten dimensions of the model include: 1) immersion in professional learning situations; 2) creating platforms for empathetic and emotional participation in the category of learning; 3) cooperative orientation to learning; 4) University's emotional support for micro-learning activities; 5) Accompanying and coordinating the academic curriculum with a micro approach; 6) micro-content knowledge; 7) Ability to design micro-content; 8) the skill of using micro-content; 9) professional self-management of student-teachers (individual and organizational); 10) Effectiveness of micro-learning of learners. The overall model fit index (GOF) was obtained as 0.620; which shows the overall fit of the model.

Conclusion

The current research was conducted with the aim of presenting a model of self-directed professional development of student-teachers based on the micro-learning approach. The results of this research is aligned with the results of Zhang (2023), Kusar et al, (2023), Redondo et al, (2021), Hrastinski (2021), Howard (2021), Mohammadi & Arshadrad (2023),



Rahimi et al., (2022), Taherpor Kalantari & Gholampur (2022), Nuri et al, (2021), and Ebrahimi Dabbagh et al, (2021). Taherpor Kalantari & Gholampur (2022) showed the dimensions of teachers' professional development were classified in 4 dimensions and 19 factors and 95 categories including individual dimensions (motivation, individual dimensions, teachers' interactions and characteristics), organizational dimensions (supervision and evaluation, management, support, career path), program dimension (knowledge management, self-directed and individualistic approaches, collaborative approaches, program features, and use of multimedia), and professional development challenges dimension (challenges of weakness in needs assessment, program challenge, economic challenge, accessibility challenge, individual and structural challenge).

According to the results of this research, the following suggestions are presented:

It is suggested that face-to-face and online training workshops using the experienced professors of Farhangian University, new and effective teaching methods appropriate to the field of study with an emphasis on the applicable knowledge of educational sciences in today's world be held for student-teachers.