Model of Professional Development for Teachers: Components, Factors, and Approaches

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A r t i c l e   I n f o

A B S T R A C T

Objective: The present research aims to identify the components, factors, and influential approaches on the professional development of teachers and to design an appropriate model for elementary schools.

Methodology: The study was conducted qualitatively using thematic analysis. The research population consisted of academic experts and education specialists, who were selected through purposive sampling. The number of participants in the study was determined based on the logic of sampling in qualitative research and the principle of theoretical saturation, including 12 experts and specialists in education. Semi-structured in-depth interviews were used to collect the required information in the qualitative section. For data analysis, open, axial, and selective coding systems were used.

Findings: Results indicated 108 initial codes, 22 sub-categories, and 12 main categories. The validity of the research was examined, and reliability was determined using test-retest reliability (87%) and inter-coder reliability (82%). The analysis revealed that 12 factors influence the professional development of teachers. These factors include psychological, organizational, teacher empowerment, cultural, managerial, educational, motivational, economic, evaluative, instructional design, and challenge-related components.

Conclusion: Presenting a model for the professional development of teachers is one of the most important issues in the educational system. Therefore, by strategic planning, educational needs assessment, and considering modern approaches, the groundwork for improving the current conditions of professional development for teachers in education can be established.

Keywords: *Model of professional development for teachers, elementary schools, components, factors, approaches.*

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1　Introduction

Education is the foundation of sustainable human development and is considered the primary tool for achieving development goals (Salajegheh & Safari, 2015). A major issue in education, given the extensive human resource community, especially teachers, is strengthening human resources. Strengthening human resources means enhancing the knowledge, skills, abilities, and motivations of employees, particularly teachers within this organization, which is only possible through professional development and learning professional skills (Juwita et al., 2023; Sadat Mousavi & Ebrahimi, 2024). Teachers are recognized as one of the most crucial agents needing change to improve educational systems. This role has transformed professional development for teachers into a growing and challenging field (Villegas, 2003).

Development, in its literal sense, means gradual growth towards becoming stronger, more advanced, and even larger. Professional development is the support and formal and informal activities designed to assist teachers, including training courses, school-based education, and activities such as coaching, counseling, self-directed learning, and research (Popova, 2021; Reychav et al., 2023). Professional development for teachers involves planned processes and activities to enhance teachers' knowledge, skills, and attitudes, ultimately improving student learning. This definition offers a broad and extensive scope for teachers' professional development; however, in modern approaches to professional development, there is an emphasis on lifelong learning capacities and a long-term perspective on these activities, viewing professional learning not as a short-term intervention but as a broad spectrum of activities ranging from teacher training at universities to individual in-service courses (Reychav et al., 2023; Rutherford et al., 2017; Soekamto et al., 2022; Taherpour kalantry et al., 2023; Zein, 2017).

Professional development is indeed a lifelong journey of learning, a journey that continuously flows throughout a teacher's professional life, enhancing their skills, knowledge, and attitudes. This lifelong learning gradually improves a teacher's classroom performance and enables them to make correct and ethical decisions when facing classroom issues and solving them. Aristotle called this ability practical wisdom (Pillen et al., 2013; Popova, 2021). Practical wisdom is essentially a capability that allows a wise teacher to make the most accurate and ethical decisions for every moment in the classroom and for whatever occurs there;

thus, professional development is essentially the development of practical wisdom, turning teachers into decision-makers with correct and ethical judgments (Ramírez-Montoya et al., 2021; Reychav et al., 2023).

Professional development for school teachers is a vital need for success in their professional roles (Reychav et al., 2023; Richter et al., 2011). Guskey & Huberman (1995) have stated that the majority of teachers we encounter are committed professionals who work hard under existing conditions. It is because of these hardworking teachers that opportunities for professional development are necessary; not only does this acknowledge teaching as a serious profession, but it also welcomes new opportunities for growth, exploration, learning, and development across all professions and fields (Pillen et al., 2013; Popova, 2021; Richter et al., 2011). A professional teacher must have a deeper understanding of content knowledge, learning styles, teaching strategies, and a new set of values along with respect for individual differences, collaboration with colleagues, and continuous feedback from teaching and the ability to guide and change effectively (Soekamto et al., 2022). In recent years, the literature on teacher professional development in the area of school reform and empowerment is grounded in the belief that the primary reason for student learning and success is the effectiveness of teachers (Zein, 2017; Živković, 2016). On the other hand, research results indicate that continuous and high-quality professional development programs play an important role in developing teachers' thinking and their effectiveness in teaching and learning. New approaches in the ongoing training and education of teachers are based on developing the concept of a systemic approach to education, considering teaching as a professional activity, and supportive policies for professional development have emerged and made education a continuous need in teachers' professional lives (Reychav et al., 2023; Richter et al., 2011; Sharma & Pandher, 2018; Soekamto et al., 2022; Zein, 2017; Živković, 2016). Professional development is still considered the most common prescription for enhancing the effectiveness and health of educational systems. Emphasis on professional development underscores the strategic role of learning and development as a challenge for human resource management units to develop and apply tools to improve performance and specialized development of employees (Richter et al., 2011; Soekamto et al., 2022). Two models of professional development are mentioned: the traditional model and the revised model. In the traditional model, knowledge is transmitted to the teacher with an emphasis on what the

teacher needs to know. In the learning process, the teacher is a recipient of information; however, in the revised model, the use of a diverse and multiple approach in teaching is recommended. Changing the approach of traditional professional development leads to a change in the role of the instructor from a specialist to a facilitator in the learning process, increases positive learning outcomes, and leads to desirable knowledge transfer (Taherpour kalantry et al., 2023; Villegas-Reimers, 2003; Zein, 2017).

Researchers have identified indicators for the professional development of teachers that, according to Silverstein (1996), should enable teachers to understand the emotional, social, and educational needs of students on the one hand, and change the capabilities of teachers in terms of knowledge, skills, and attitudes on the other (Laei, 2012). Antoniou & Kyriakides (2015) conducted a study titled Professional Development Program and Teacher Effectiveness and concluded that a continuous and high-quality professional development program plays an important role in developing teachers' thinking and their effectiveness in teaching and learning (Antoniou et al., 2015). Jabrooti & Bagherimajd (2023) concluded that motivation, perseverance, self-regulation, and curiosity play a role in creating professional development for teachers (Jabarooti & Bagherimajd, 2023). Taherpour Kalantari & Pourshafiei (2021) in their research concluded that the five-factor model includes lack of an appropriate plan and a non-professional view of professional development as the central category and causal conditions (individual and organizational factors), facilitating intervention conditions (motivation, needs assessment, and empowerment programs), restricting intervention conditions (programmatic challenges and financial and policy challenges), strategies (current and perceived actions), and outcomes (reduced motivation and resource wastage) are the main components (Taherpour kalantry et al., 2023). Erfani & Amini Mofrad (2020) showed that in the traditional approach, teacher assessment in the classroom is the first priority, in-service training the second priority, and clinical supervision the third priority, and among the models of the modern approach, the collaborative or collegial model is the first priority, use of radio and virtual space is the second priority, and the model of professional schools is the third priority (Erfani & Aminimofrad, 2020). Haj Khozeymh et al. (2020) concluded that the components of professional development for educational group managers in universities and higher education institutions include five categories: management-leadership skills, educational skills, research

skills, personal skills, and counseling skills (Haj Khozeymh et al., 2020). Jafary and colleagues (2017) showed that the model of teacher professional development includes three components: content, context, and process (Jafary et al., 2017). The review of research conducted indicates the absence of a model in the professional development of teachers in elementary schools in the Qom province.

Thus, the present research aims to identify the components, factors, and influential approaches on the professional development of teachers and to design an appropriate model for elementary schools. The research was conducted qualitatively using thematic analysis.

2   Methods and Materials

The present study was conducted qualitatively. Qualitative research is a broad, deep, and meaningful approach to issues, behaviors, and findings and is used when a phenomenon needs to be examined from various angles. Qualitative content analysis is an appropriate method to obtain valid and reliable results from textual data, aiming to generate knowledge, new ideas, present facts, and provide practical guidelines for performance. The population included academic experts, education specialists, and selected university professors specialized in education, characterized by accessibility, experience, relevant academic background, university teaching experience, and a research and publication history in this field. Their opinions were used in two parts: identifying the factors and components of teachers' professional development and validating the final model. Due to the nature of qualitative research and the data collection tools used, purposive sampling of a network of experts was employed. Data for this study were collected through semi-structured, face-to-face, in-depth interviews lasting between 30 to 90 minutes with 12 academic experts. Participants were also asked about the professional development of teachers, the factors, and approaches influencing this phenomenon. Additional questions were posed to direct the discussions and achieve categories related to the studied phenomenon. Data were transcribed immediately after each interview and analyzed using MAXQDA software (2018). To determine the study's validity, coding was based on credibility, member checking, triangulation of data sources (using three types of sources: faculty members, practitioners, and policy makers), analysis of negative cases, transferability, and reliability or consistency was examined, and reliability was determined using test-retest reliability (87%) and agreement between

two coders (82%). Experts believe that in semi-structured interviews, the questions posed typically do not have predefined answers, and both the researcher and the respondent are free to say whatever they wish; hence, the current research seeks to answer the following questions: 1. What is the appropriate model for the professional development of elementary school teachers? 2. What components should be considered for the professional development of elementary school teachers? 3. What factors are determinant for the professional development of elementary school teachers? 4. What approaches should be considered for the professional development of elementary school teachers?

3 Findings and Results

To identify the components, factors, and influential approaches on teachers' professional development, a qualitative research method and semi-structured interviews with experts were used. During the interview session, individuals were asked questions, and if there was any ambiguity in their statements, follow-up questions were posed to request more detailed and clear explanations. Table 1 presents excerpts from the interviews with experts and the initial codes extracted.

Table 1

Expert Interview Sample and Identified Codes

Interview Code	Interviewee's Response	Identified Codes
M.1	Professional development means updating the knowledge and skills of teachers, meaning a teacher who works in a school and goes to class must continually align themselves with the future needs of students and create an environment for learning. A teacher can provide optimal learning conditions for students only if they are qualified and have acquired the necessary conditions. We consider four components as the main components for a professional teacher: 1 - The first component is in the subject area they teach; for example, if the teacher is a mathematics teacher, they should increase their knowledge in that area daily. 2 - The second component is knowledge of teaching methods (methods and techniques of teaching). 3 - The teacher's knowledge about learning and learning theories; the teacher's entire effort and goal is to facilitate learning in their learners and should become more familiar with this topic and enhance their skills. 4 - General knowledge and skill in understanding the audience and learner: continuously aware and knowledgeable about the growth and development of their students (cultural - physiological).	- Knowledge acquisition; - Skill acquisition; - Aligning with students' needs; - Expanding personal capabilities; - Optimal and continuous learning; - Expanding knowledge; - Teaching method; - Content knowledge; - Educational skills; - Recognizing individual differences in students
M.2	The first factor in the professional development of teachers is individual and personality factors. The individual should pursue continuous learning. Additionally, teachers should have characteristics such as creativity and innovation, openness to criticism, participation-seeking, decision-making skills, collective thinking, responsibility and professional commitment, and communication skills. Additionally, having emotional-social intelligence, which fosters collaboration and synergy, is essential. They should have a friendly spirit and give personality to the learners. On the other hand, alongside specialized knowledge and behavioral competencies, they should be familiar with modern teaching methods and educational games. Alongside personality factors, there are cultural factors that also impact teachers' professional development, such as the spirit of collectivism, teamwork, professional ethics, and belief in teamwork.	- Critical thinking; - Collaborative learning; - Creativity and innovation; - Mental health; - Teamwork
M.3	Among the set of approaches recently used in professional development, lesson study, field studies, in-service training courses, action research, and humanistic approaches to education have been of high importance. Since professional development for teachers is a set of planned processes and activities aimed at enhancing professional knowledge, skills, and attitudes to improve student learning, the research methods used must focus on improving practice.	- Lesson study; - Field studies; - In-service training courses; - Action research

Subsequently, the identified codes were arranged into subcategories through three stages of coding: open, axial, and selective. Parts of the categorization of the initial codes in the second phase (axial coding) are shown in Table 2.

Table 2

Categorization of Identified Codes into Subcategories

Subcategory	Open Codes
Knowledge	- Pedagogical knowledge; - Subject matter knowledge; - Technological knowledge; - Pedagogical content knowledge
Context	- Infrastructure and suitable environment
Process	- Methods for acquiring new skills; - Methods for acquiring new knowledge
Attitudes	- Teacher's interest; - Teacher's motivation; - Interest in personal advancement
Personality Traits	- Creativity and innovation; - Responsibility; - Critical thinking; - Commitment; - Emotional intelligence; - Perfectionism; - Truth-seeking; - Professional ethics
General Competency of Teachers	- Academic competency; - Ethical competency; - Political competency; - Scholastic competency; - Psychological competency
Management Skills	- Recruitment of teachers; - Educational structure; - Organizational climate; - Changing regulations and circulars; - Decentralization; - School-centered approach; - Updating content knowledge; - Enhancing the quality of teacher knowledge; - Recruitment of motivated personnel; - Selection and employment of teachers
Training Courses	- In-service training; - Initial training; - Necessary training for teachers; - Observation and analysis of educational and scientific films; - Connecting teachers with educational universities and other universities
Research-Oriented Courses	- Collaboration with UNESCO; - Study opportunities; - Participation in scientific conferences; - Improvement of in-service training quality; - Strengthening the academic foundation of teachers; - Field studies
Cultural Development	- Promoting a culture suitable for lifelong learning; - Enhancing the social status of teachers; - Organizational culture; - Expanding the culture of a learning organization
Educational Leadership	- School management; - Leadership style of managers; - Participative management; - Friendly behavior of the manager; - Friendly behavior of teachers and manager
Teaching Strategies	- Teaching appeal; - Classroom management; - Conflict management; - Communication skills; - Attention to individual differences in students; - Self-management; - Familiarity of teachers with modern teaching methods
Educational Processes	- Enhancing academic level; - Mastery of the profession
Educational Technology	- Educational tools; - Educational facilities; - Educational space; - Utilization of information and communication technology; - Virtual education; - E-learning
Education Quality	- Collaborative learning; - Counseling classes for teachers; - Improving the quality of activities; - Time management; - Effective and efficient teacher; - Encouraging team learning
Professional Development Standards	- Continuous and lifelong learning; - Systems thinking; - Having a vision; - Mastery of content knowledge; - Quality teaching; - Research-oriented; - Collaboration and cooperation among teachers; - Teacher experience; - Attention to students' needs
Motivation	- Encouraging teachers; - Supporting teachers; - Welfare services for teachers; - Strengthening the reward system for teachers' research activities; - Improving job security and attitude
Financial Support	- Budget or financial resources; - Adequate salaries and benefits; - Allocation of financial resources for professional development programs; - Using financial incentives to motivate teachers
Evaluation	- Needs assessment of teachers; - Improvement of teacher evaluation process
Study Methods	- Futurology; - Narrative research; - Action research; - Lesson study
Challenges	- Inappropriate selection of teachers; - Lack of optimal management; - Lack of mental and psychological health; - Lack of political stability; - Economic instability; - Low research spirit among teachers; - Lack of time for research; - Teacher fatigue; - Lack of useful training courses; - Inappropriate evaluation

In the final stage of the research, the identified subcategories are placed into more abstract categories, and in this phase, the subcategories are classified into 12 main categories: components, psychological factors, organizational factors, teacher empowerment, cultural factors, managerial factors, educational factors, motivational factors, economic factors, evaluation, instructional design, and challenges. Table 3 shows the main categories.

Table 3

Classification of Identified Subcategories into Main Categories

| Subcategory	Main Category
Knowledge; Context; Process	Components (dimensions) of professional development
Attitudes; Personality Traits; General Competency of Teachers	Psychological Factors
Management Skills; Recruitment of Teachers	Organizational Factors
Training Courses; Research-Oriented Courses	Teacher Empowerment Factors
Cultural Development	Cultural Factors
Educational Leadership; Teaching Strategies	Managerial Factors

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Educational Processes; Educational Technology; Education Quality; Professional Development Standards	Educational Factors
Motivation	Motivational Factors
Financial Support	Economic Factors
Evaluation	Evaluation
Study Methods	Instructional Design
Challenges	Challenges to Professional Development

Based on the findings from the literature review and feedback from experts using semi-structured interviews, a conceptual model for the professional development of primary school teachers in Qom province has been presented:

Figure 1

Model with Beta Coefficients
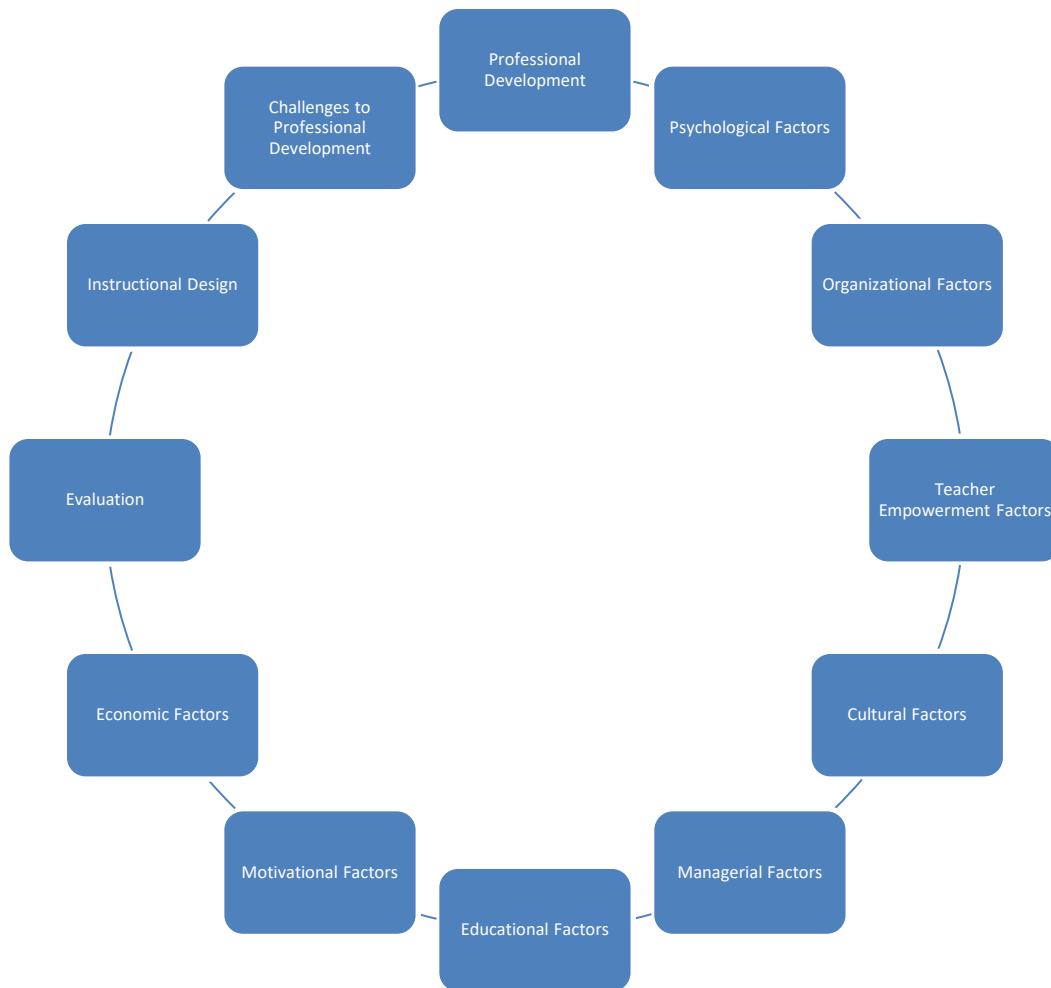
4   Discussion and Conclusion

Professional development within the educational system requires a model that is primarily driven by teachers; because it is teachers who teach learners how to learn in such a way that, if they can effectively fulfill this role, they can provide a real-life context for their students. Additionally, the progress and development of organizations and institutions depend on the enhancement of the knowledge, skills, behavior, and insights of human resources. Accordingly, it can be observed that many leading organizations and institutions increasingly focus on training and development of human resources, thereby defining the

true place of education in the pathway of organizational development as a major mission. In this regard, a continuous professional development program is one of the fundamental components in planning for human resource development. This program aims to enable teachers to develop according to their capabilities and skills in line with the goals of their organization and job, establishing a dynamic link between their personal development needs and their professional duties. This study, based on the important role of teachers' professional development, aimed to identify components, factors, and effective approaches for professional development based on designing an appropriate model, and both main and subcategories have been examined and the model explained based on three areas.

The first area focuses on the components of professional development, emphasized in three dimensions: process, context, and knowledge. Accordingly, professional development qualitatively enhances individuals' capacity for learning so that they can clarify their perspectives on achieving learning goals. Professional development ensures that school teachers have acquired the necessary content, processes, knowledge, skills, authority, and competencies. This issue has also been addressed in the prior research (Antoniou et al., 2015; Erfani & Aminimofrad, 2020; Jabarooti & Bagherimajd, 2023; Jafary et al., 2017; Laei, 2012; Pillen et al., 2013; Popova, 2021; Ramírez-Montoya et al., 2021; Reychav et al., 2023; Richter et al., 2011; Rutherford et al., 2017; Sadat Mousavi & Ebrahimi, 2024; Sharma & Pandher, 2018; Soekamto et al., 2022; Taherpour kalantry et al., 2023; Villegas-Reimers, 2003; Zein, 2017; Živković, 2016).

The second area involves a set of factors that play a role in shaping teachers' professional development. These factors include psychological, organizational, teacher empowerment, cultural, managerial, educational, motivational, economic, evaluative, and instructional design factors. These factors suggest that teachers' professional development encompasses a broad range of learning activities, which can include teacher study groups, supervisory communications and mentoring, teacher networks, participation in school improvement groups and curriculum committees, evaluations, workshops, and training courses. This is consistent with the prior findings (Antoniou et al., 2015; Erfani & Aminimofrad, 2020; Jabarooti & Bagherimajd, 2023; Jafary et al., 2017; Laei, 2012; Pillen et al., 2013; Popova, 2021; Ramírez-Montoya et al., 2021; Reychav et al., 2023; Richter et al., 2011; Rutherford et al., 2017; Sadat Mousavi & Ebrahimi, 2024;

Sharma & Pandher, 2018; Soekamto et al., 2022; Taherpour kalantry et al., 2023; Villegas-Reimers, 2003; Zein, 2017; Živković, 2016).

The third area consists of approaches that influence the formation of teachers' professional development, including future studies, narrative research, action research, and lesson study. The goal of these approaches is to develop the knowledge, skills, and insights of employees and managers to achieve organizational development in today's turbulent environment. Previous research (Antoniou et al., 2015; Erfani & Aminimofrad, 2020; Haj Khozeymh et al., 2020; Juwita et al., 2023; Ramírez-Montoya et al., 2021; Sadat Mousavi & Ebrahimi, 2024) have referred to these issues. Overall, the findings and results of the research indicate that explaining the main factors of teachers' professional development depends on investigating various categories and factors, each of which can be considered to play a unique role. Based on the findings, it is recommended that each of the identified components be studied separately and in more detail, and a new model be proposed.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Declaration of Interest

The authors report no conflict of interest.

Ethical Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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