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Presenting a Model for Enhancing the Professional Competence of Geography Teachers in Iraq Based on a Systemic Approach

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Abstract

The objective of this research was to propose an educational model based on a systemic approach to enhance the professional competence of geography teachers in Iraq. This study was applied in terms of purpose and qualitative in terms of methodology, utilizing thematic analysis. Potential participants in this research included geography teachers in Wasit Province, Iraq, who were selected purposefully based on theoretical saturation criteria. The purposive sampling criteria for this study were teachers with a master's degree or higher and at least 10 years of teaching experience in geography. Additionally, prominent geography professors with at least one published article in the field of geography education and educational issues were included in the sample. The coding and analysis method followed the Attride-Stirling (2001) model. The findings of this model consist of three main components: input, process, and output. Inputs include knowledge of geography content, general pedagogical knowledge, pedagogical content knowledge, and technological knowledge, which play a fundamental role in improving the quality of education and enhancing the professional competencies of geography teachers. Process factors include in-service teacher training, teacher motivation enhancement, and managerial functions, which contribute to improving education and supporting geography teachers. The outputs of this model include the effectiveness of geography learning, lifelong learning, stakeholder satisfaction, and pluralism, which are interconnected through a feedback loop, creating a coordinated and integrated system. enhancing teachers' professional competencies not only improves the quality of geography education but also helps nurture a generation that is aware, creative, and responsible toward the environment and society

Key Words: Professional competence enhancement of teachers, geography, Iraq, systemic approach

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Introduction

In an efficient educational system, all components and elements, such as curriculum and materials, learners, teachers, educational tools, space and equipment, budget, and funding, must mutually influence one another to achieve the expected goals. Alongside this mutual influence, each of these components must individually possess the necessary quality and efficiency. Among all these components, the teacher plays the most critical role in providing suitable conditions for learning activities. Therefore, it is essential for teachers to have the necessary qualifications to fulfill such a role in the educational system (Maleki, 2012).

Teachers in today's world are not merely part of the educational system but are vital agents in the learning process. The four key competencies teachers need to perform their roles effectively are:

1. **Educational Competency**: Mastery of teaching methods and techniques and the ability to design and implement engaging learning experiences.
2. **Professional Competency**: Staying updated in the knowledge and skills related to their specialized field and familiarity with the latest developments and trends in this area.
3. **Personal Competency**: Emotional intelligence, flexibility, and commitment to personal growth and development.
4. **Social Competency**: The ability to build positive relationships with students, colleagues, and parents, and to create a supportive and collaborative learning environment.

Teachers, as professionals, play a fundamental role in shaping the future. Through planning and implementing the learning process, assessing learning outcomes, and providing guidance and support through coaching and individualized instruction, they help students progress and succeed (Wiyanto & Iswandi, 2023).

Teacher competency plays a crucial role in shaping the quality of education, both at the national level and within each educational unit. The higher the teacher's competency, the higher the quality of education will be. In any educational unit, student learning outcomes can be a key indicator for measuring teacher competency. Educational units with highly competent teachers consistently observe strong learning outcomes in their students. Conversely, units with less competent teachers are likely to see weaker learning outcomes. This correlation highlights the critical importance of investing in the development and enhancement of teacher competencies and ensuring that educators possess the necessary skills and knowledge to effectively guide their students. While numerous free webinars and training sessions aim to improve the competencies of geography teachers, concerns remain in areas such as

finding suitable learning plans, managing classroom emotions, using technology in teaching, and establishing effective communication with parents. Addressing these challenges requires a multifaceted approach, including differentiated instruction, emotional regulation, technology integration, and communication skills, alongside continuous support, supervision, and evaluation of teacher development programs. This focus on geography teachers underscores the need for similar efforts in all subjects, with the ultimate goal of improving the quality of education and ensuring effective learning experiences for all students (Kurniawan, 2020).

Professional competencies of teachers are a system of knowledge, skills, abilities, and motivational desires that enable the effective realization of professional educational activities (Bezić, Kurent, & Milosović, 2010). The lack of success and inefficiency of teachers who, after employment, enter the classroom despite all the shortcomings of the hiring system and receive little attention to their training and competency enhancement, leads to their fatigue in the classroom, subsequent problems, and ultimately teacher dissatisfaction. This is due to factors related to teacher competencies. The absence of initial competencies and the lack of necessary skills and competencies result in reduced self-confidence, low energy, interest, memory weakness, and other related factors, all of which lead to decreased patience, subtlety in work, reduced mastery, and declining productivity (Farzaneh, Pourkarimi, & Ezati, 2015). Competency refers to the teacher's ability to perform their profession, which must be accompanied by knowledge, skills, and attitudes full of responsibility (Somantri, 2022). As explained by Yasin (2021), teacher competency is the ability of teachers as educators to fulfill their commitments with a full sense of responsibility. Teachers, as educators, are also required to possess five types of intelligence: intellectual intelligence, moral intelligence, emotional intelligence, social intelligence, and motor intelligence. These intelligences are characteristics of an ideal teacher, as the teacher's intelligence influences the activities of delivering information from the teacher to the students (Somantri, 2022).

In today's world, the development of professional competencies of geography teachers who can work under conditions of rapidly increasing scientific information and the introduction of innovative educational technologies is of particular importance. Moreover, a geography teacher must develop students' cognitive and creative abilities, build their scientific worldview, develop geographical thinking, and the ability to extract information from various sources, identify and analyze links between natural and social processes (Mizambaeva & Baimyrzaev, 2019). The professional competence of geography teachers includes successful preparation and performance that delivers high-quality teaching. Structurally, the professional education of a geography student includes metaphysical, value-based, practical, and professional-personal components, the development of which directly facilitates the enhancement of teacher competency (Mizambaeva &

Baimyrzaev, 2019). The professional competence of geography teachers includes not only the theoretical level of knowledge, the ability to use geographical terms and concepts, but also knowledge and skills in psychology and education, as well as the personal characteristics of a citizen (resilience, decisiveness, dedication, hard work, etc.) that may influence students' personalities. Therefore, under current educational conditions, the preparation of prospective geography teachers must undergo fundamental changes. In this regard, it is essential to change the methods of delivering educational services and organizing education in higher education systems. This is particularly important in relation to rapidly developing innovative technologies and the need to incorporate them into the training of geography teachers. A specific professional characteristic of modern geography teachers is that their work today acquires regulatory features, including requirements for mastering professional qualities, technologies, methods, forms, and educational tools depending on the goals and priorities set by the government. Most studies, considering issues related to improving the preparation of geography teachers in terms of subject and methodological knowledge, focus on the holistic and integrated concept of professional and educational training of prospective geography teachers (Mizambaeva & Baimyrzaev, 2019).

The direct study of the competencies of geography teachers at the secondary level has yet to attract researchers' attention. However, this does not mean it should be overlooked. Here, aspects of professionalism and the training of geography teachers are examined to create a model that can evaluate teachers' weaknesses, which directly impact student progress, and which, in turn, can be addressed by creating a model of teacher competencies. From this perspective, a good starting point for examining professional aspects is the study of geography teachers' professional competencies, including subject content knowledge, pedagogical content knowledge, educational technology knowledge, attitudes, and values (Hanifah, Mohmadisa, Yazi, Nasir, & Balkhis, 2019). Competency, alongside professional knowledge, subject content knowledge, pedagogical content knowledge, educational technology knowledge, and professional values, is closely related to teachers' mastery of their subject content. According to Ahmad Yunus and Halim (2010), teachers' mastery and understanding of subject content are crucial for ensuring effective teaching and learning. The findings of Mohammad Rusdi (2017) also showed that pedagogical content knowledge is related to understanding a subject, as teachers' understanding of subject content differs from that of subject content experts. The importance of educational technology knowledge in improving teacher competencies aligns with the view of Koehler et al. (2013), who argued that teachers should use technology in teaching and learn sessions creatively while mastering their subject content, "thinking outside the box" (Hanifah, Mohmadisa, Yazi, Nasir, & Balkhis, 2019).

Research Questions:

The main research question is: *What can an educational model based on a*

systemic approach for enhancing the professional competencies of geography teachers look like?

Other questions include:

1. What are the components of professional competencies of geography teachers *based on a systemic approach*?
2. What is the model of professional competencies of geography teachers *based on a systemic approach*?

Methodology

This research employed a qualitative method using thematic analysis based on the Attride-Stirling (2001) approach. In this method, basic themes were identified by analyzing the smallest codes and key points in the text. After a thorough review of the text, codes containing the smallest concepts and themes were selected as basic themes. Organizing themes included combining and summarizing basic themes. At this stage, basic codes were reviewed, and similar concepts were grouped together. The researcher, based on their judgment and expertise, assigned appropriate names to each group of codes. Finally, overarching themes included superior themes that dominated the text and were considered the essence of the study.

Potential participants in this research included geography teachers in Wasit Province, Iraq, who were selected purposefully based on theoretical saturation criteria. The purposive sampling criteria for this study were teachers with a master's degree or higher and at least 10 years of teaching experience in geography. Additionally, prominent geography professors with at least one published article in the field of geography education and educational issues were included in the sample.

Data were collected using semi-structured interviews. During the interviews, the researcher reached data saturation after 27 interviews. For qualitative data analysis, the thematic analysis method based on Attride-Stirling (2011) was used. First, excerpts from the interview texts provided by participants were extracted and recorded on paper. Then, using initial coding, each excerpt was coded separately and recorded in separate tables. In the next stage, by combining codes with similar meanings, basic themes were extracted. These basic themes were identified based on semantic similarities in the school. In other words, each basic theme was categorized as an organizing theme. Finally, organizing themes were placed under an abstract and overarching theme, and the final table of theme categorization was compiled.

Research Findings

Table 1 shows examples of interview statements and extracted basic themes.

Table 1: Excerpts and Basic Themes

Excerpt	Open Code	Basic Theme
In my opinion, one of the factors that enhance the professional competencies of geography teachers is their familiarity with the laws, concepts, and principles in the field of geography that teachers should become acquainted with. This familiarity may exist before entering the teaching profession. Additionally, there are other factors that increase the grounds for enhancing competencies, such as familiarity with compasses, globes, maps, and the knowledge related to these.	Familiarity with laws, concepts, and principles in the field of geography, familiarity with compasses, globes, maps, and the knowledge related to these.	Familiarity of teachers with concepts, principles, and laws in geography.
Another factor is that teachers should have sufficient familiarity with various syllabi of textbooks, especially in geography, and should have acquired the necessary awareness beforehand. Currently, what is very important for teachers, and as someone who teaches at the university and trains teachers, is that a geography teacher must understand spatial relationships well. Based on my experience over the years, familiarity with the diversity of ethnic groups, societies, and communities to understand cultural wealth, creating values, and international cooperation can enhance teachers' professional competencies.	Familiarity with various syllabi of textbooks, especially in geography. Geography teachers must understand spatial relationships well. Familiarity with the diversity of ethnic groups, societies, and communities to understand cultural wealth. Creating values and international cooperation.	Familiarity with various syllabi of geography textbooks. Understanding spatial relationships. Familiarity with the diversity of ethnic groups, societies, and communities to understand cultural wealth. Creating values and international cooperation.

A teacher, especially a geography teacher, should be able to work with informational data such as images, charts, and maps in geography and have the necessary familiarity.	Familiarity with informational data such as images, charts, and maps in geography.	Familiarity with informational data such as images, charts, and maps.

After evaluating and receiving feedback from advisors and consultants, as well as feedback from participants, the basic themes were reviewed and revised. Following the extraction of basic themes, abstract themes were formed. At this stage of thematic analysis, efforts were made to organize the initial themes obtained and identify more abstract themes closer to the main themes.

Table 2: Basic, Organizing, and Overarching Themes of the Model for Enhancing the Professional Competencies of Geography Teachers

Basic Themes	Organizing Themes	Overarching Themes	Main Themes
Familiarity of teachers with concepts, principles, and laws in geography. Familiarity with compasses, globes, maps, and related knowledge. Familiarity with various syllabi of geography textbooks. Understanding spatial relationships. Familiarity with the diversity of ethnic groups, societies, and communities to understand cultural wealth. Creating values and international cooperation. Familiarity with informational data such as images, charts, and maps.	Geography content knowledge	Input factors	
Familiarity with teaching strategies. Familiarity with students' temperaments and spirits. Familiarity with various stages of lesson planning. Familiarity with strategies to improve the learning and teaching environment. Familiarity with basic principles of psychology.	General pedagogical knowledge		
Familiarity with preparing and creating conceptual maps in geography. Familiarity with integrating content with everyday life issues and the surrounding environment. Familiarity with field studies and their application in teaching geography. Skills in human-environment-society interactions at global and regional levels. Ability to understand and recognize students' problems. Having teaching experience, especially practicum experience. Skills in representing subject content.	Pedagogical content knowledge		
Familiarity with image interpretation and working with satellite data. Familiarity with various software in geography education for	Technological knowledge in geography		

drawing mathematical position lines (e.g., ARC-GIS). Teachers' familiarity with online tests, creating online tests, and analyzing them. Familiarity and use of artificial intelligence. Teachers' familiarity and use of interactive digital whiteboards. Familiarity with coding skill platforms like Tinker and Scratch. Familiarity with mapping techniques, creating globes and maps, and similar items.		
In-service training for teachers in geography. In-service training for teachers in educational and technological issues and their use. Holding in-person and virtual workshops on topics related to geography. Training on the use of virtual laboratories.	In-service training	Process factors
Providing financial and non-financial incentives. Establishing and equipping necessary laboratories and workshops for teaching geography. Providing necessary support for purchasing educational and supplementary tools. Supporting the preparation of programs and one or multi-day field trips to familiarize with various geographical regions, even neighboring countries.	Motivation enhancement	
Eliminating laws and regulations related to education, especially teaching geography. Planning and organizing appropriate facilities for teaching geography. The presence of qualified managers in education. Employing specialized managers. Managerial support for teachers. Greater student participation in the teaching process.	Managerial functions	
Greater student participation in the teaching process. Improving quantitative and qualitative grades. Increasing satisfaction among students and parents. Diversifying geography teaching and learning. Local, regional, and national development.	Effectiveness of geography learning	Output factors
Integrating technology with problem-based learning. Creating interest in students for learning geography. Increasing geographical literacy among students. Increasing informational literacy in geography. Teaching various skills needed in geography. Teaching and using self-assessment for students.	Lifelong learning	
Enhancing the status and respect of teachers. Satisfaction of students and their parents. Increasing students' sense of responsibility in learning geography. Increasing students' sense of responsibility toward the environment.	Stakeholder satisfaction	
Forming small and diverse groups. Encouraging discussion and exchange of opinions in groups. Valuing individual differences among members. Creating	Pluralism	

opportunities for creative thinking and constructive criticism of ideas. Facilitating and guiding discussions by the teacher.	

As shown in Table 2, after reviewing and removing duplicate basic themes, a total of 59 basic themes, 11 organizing themes, and 3 overarching themes were categorized. In the next stage, the thematic network was drawn.

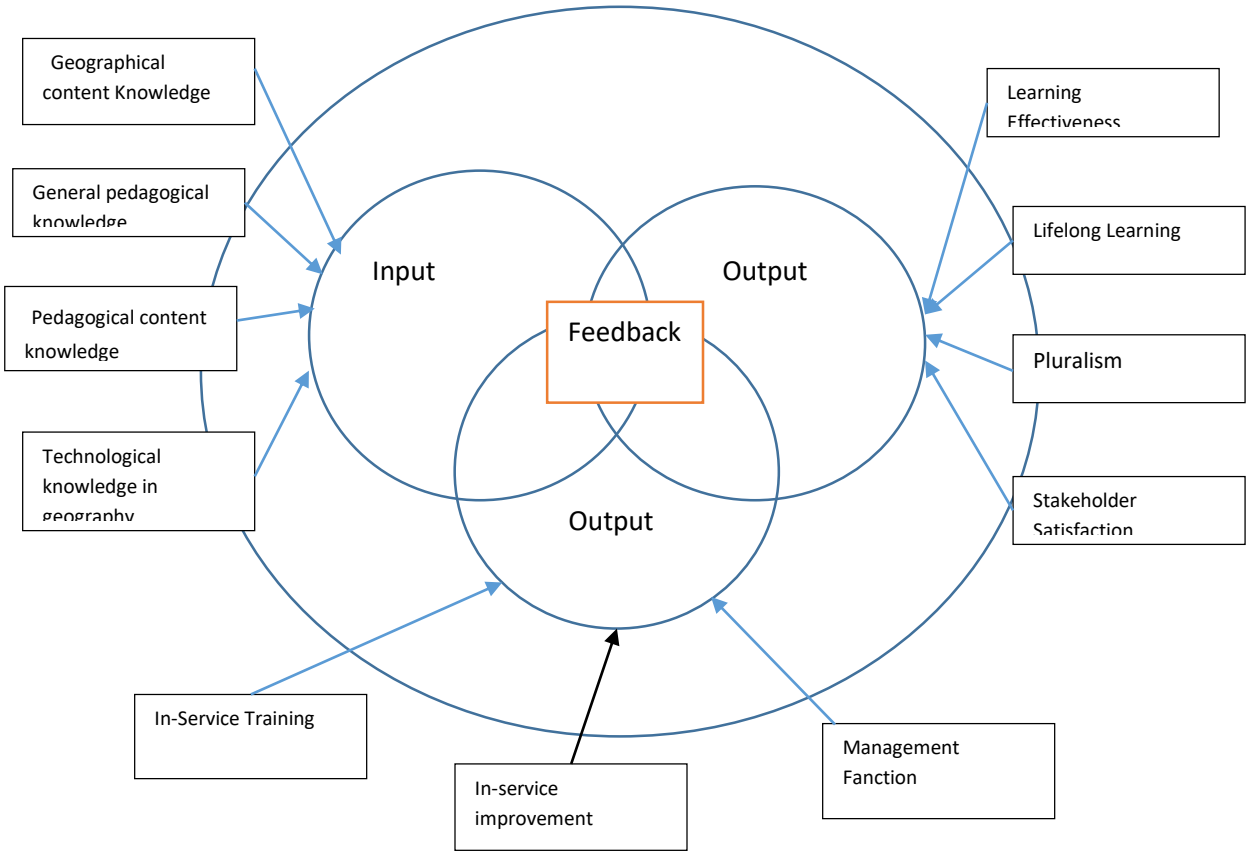

Figure 1: A Conceptual Model for Enhancing the Professional Competencies of Geography Teachers

Figure 1 provides more details about the indicators, components, and dimensions of the model. This model consists of three main sections: input, process, and output, each of which is elaborated below:

- **Input Factors**: These include geography content knowledge, general pedagogical knowledge, pedagogical content knowledge, and technological knowledge. Universities play a vital role in providing

these inputs, and if they fulfill their mission well, they can offer valuable resources for the education system, especially in geography. These inputs serve as the foundation for improving the quality of education and enhancing the professional competencies of geography teachers.

- **Process Factors**: These include components such as in-service training for geography teachers, enhancing teacher motivation, and managerial functions. In-service training for teachers means providing continuous training and learning opportunities for teachers to update their skills and knowledge. Enhancing teacher motivation addresses increasing teachers' job satisfaction and motivation, which can directly impact the quality of education. Managerial functions include all organizational and managerial activities undertaken to support and enhance teachers. These processes demonstrate the role of the education organization in improving and enhancing the professional competencies of geography teachers.
- **Output Factors**: The outputs of the model include the effectiveness of geography learning, lifelong learning, stakeholder satisfaction, and pluralism. The effectiveness of geography learning refers to the success in teaching and learning geographical concepts. Lifelong learning refers to the ability of teachers and students to continue the learning process throughout their lives. Stakeholder satisfaction includes the satisfaction of students, parents, teachers, and others involved in the education process. Pluralism refers to accepting and supporting diversity in the education process. These three dimensions are interconnected through a feedback loop and depend on each other to form a coordinated and integrated system. This model, relying on interactions between inputs, processes, and outputs, provides a comprehensive and systematic perspective for enhancing the professional competencies of geography teachers.

Discussion and conclusion

Enhancing the professional competencies of geography teachers based on a systemic approach requires attention to three main components: inputs, processes, and outputs. This research aimed to identify the indicators and components effective in this field, and the findings show that a comprehensive and systematic model can help improve the quality of geography education and the professional development of teachers. The dimensions of this model include:

- **Input Factors**:
  - Geography content knowledge: Teachers must master basic geography concepts, educational tools (maps, compasses), and methods of analyzing spatial data.

- Pedagogical knowledge: Familiarity with teaching methods, learning psychology, and classroom management is essential.
- Technological knowledge: The use of specialized software (e.g., GIS), artificial intelligence, and digital platforms in geography education is critical.

- **Process Factors**:
  - In-service training: Continuous training programs, practical workshops, and the use of virtual laboratories can keep teachers' knowledge up to date.
  - Motivation enhancement: Financial and non-financial incentives, equipping schools with educational facilities, and supporting field programs (e.g., geographical field trips) can increase teachers' motivation.
  - Managerial functions: Educational administrators must remove administrative barriers, plan appropriately, and hire specialized personnel to create the necessary environment for effective geography teaching.
- **Output Factors**:
  - Effectiveness of learning: Active student participation, improved grades, and diversity in teaching methods are signs of this model's success.
  - Lifelong learning: Integrating technology with education, increasing geographical literacy, and encouraging self-assessment motivate students to continuous learning.
  - Stakeholder satisfaction: This includes the satisfaction of students, parents, and teachers with the education process.
  - Pluralism: Respecting individual and cultural differences in the classroom, constructive dialogue, and critical thinking are reinforced.

The proposed model of this research, by combining specialized knowledge, pedagogical skills, and modern technologies, provides a systematic framework for enhancing the professional competencies of geography teachers. This model shows that improving the quality of geography education is not possible by focusing on only one dimension (e.g., curriculum content) but requires coordinated interaction between educational policy-making, school management, and teacher empowerment.

Recommendations:

- **Teachers**: Participate in blended training programs (pedagogical and technological) and use active teaching methods.
- **Educational Authorities**: Develop technological infrastructure, design effective incentives, and support field research in geography.

- **Future Researchers**: Investigate the impact of this model on other subjects and educational levels and conduct comparative studies with other educational systems.

This research emphasizes the necessity of a systemic approach to geography education and shows that collaboration between teachers, administrators, and policymakers can lead to sustainable transformation in teaching this subject. Ultimately, enhancing teachers' professional competencies not only improves the quality of geography education but also helps nurture a generation that is aware, creative, and responsible toward the environment and society.

References

Ahmad Yunus, K., & Ab. Halim, T. (2010). Pengetahuan Pedagogikal Kandungan (PPK) Pengajaran Akidah: Kajian kes guru cemerlang Pendidikan Islam. *Journal of Islamic and Arabic Education, 2*(2), 13–30.

Attride-Stirling, J. (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research, 1*(3), 385–405. https://doi.org/10.1177/146879410100100307

Bjekić, D., Krneta, R., & Milošević, D. (2010). Teacher education from e-learner to e-teacher: Master curriculum. *Turkish Online Journal of Educational Technology, 9*(1), 202–212.

Hanifah, M., Mohmadisa, H., Yazid, S., Nasir, N., & Balkhis, N. S. (2019). Professional and pedagogical competencies of geography teachers in Malaysia. *Review of International Geographical Education Online, 9*(2), 304–318.

Kereluik, K., Mishra, P., Fahnoe, C., & Terry, L. (2013). What knowledge is of most worth: Teacher knowledge for 21st century learning. *Journal of Digital Learning in Teacher Education, 29*(4), 127–140. https://doi.org/10.1080/21532974.2013.10784716

Koehler, M., Mishra, P., & Cain, W. (2013). What is technological pedagogical content knowledge (TPACK)? *The Journal of Education, 193*(3), 13–19.

Kurniawan, E., Eva, B., & Dafip, M. (2020). A teaching-based technology in geography learning. *Cypriot Journal of Educational Sciences, 15*(4), 766–776. https://doi.org/10.18844/cjes.v15i4.5059

Maleki, H. (2012). *Teaching competencies*. Madrese. (Original work published 1391). [In Persian]

MIZAMBAEVA, F. K., & BAIMYRZAEV, K. M. (2019). Conditions for the formation of professional competence of an intending geography teacher. *Revista ESPACIOS, 40*(09). [Include URL if available]

Somantri, L. (2022). Indonesian spatial intelligence for geography teachers. *JPPI (Jurnal Penelitian Pendidikan Indonesia), 8*(2), 267–274. https://doi.org/10.29210/020221274