Identifying and Prioritizing the Explanatory Components of Research-Oriented School with the Aim of Improving the Quality of the Teaching-Learning Process

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ABSTRACT

Background and Aim: A research-oriented school can improve the quality of the teaching-learning process. Therefore, the purpose of this study was identifying and prioritizing the explanatory components of research-oriented school with the aim of improving the quality of the teaching-learning process. **Methods:** This study in terms of purpose was applied and in terms of implementation method was cross-sectional. The research population was the teachers of all educational levels of Mazandaran province in the 2022-2023 academic years, which based on the Cochran formula numbers of 380 people of them were selected as a sample with using multistep cluster sampling methods with respect to the ratio of the size of townships. The research tool was a researcher-made questionnaire with 118 items in 24 components. Data were analyzed by exploratory factor analysis and Friedman test in SPSS software. **Results:** The results of the exploratory factor analysis showed that the factor loading of all items was higher than 0.40 and the research-oriented school with the aim of improving the quality of the teaching-learning process had 24 components in 11 dimensions, which the factor loading and average variance extracted of all of them were higher than 0.50 and Cronbach and combination reliability of all of them were higher than 0.70. The results of the Friedman test showed that in the research-oriented school with the aim of improving the quality of the teaching-learning process respectively the components of social consequences, scientific and research workshops and festivals, motivational incentives, educational system consequences, forward-looking thinking to research, individual consequences, human resource empowerment, developmental attitude to research and education, academic consequences, upstream policies, creativity-oriented and intellectual orientation of education, religious and national values, creation of research-oriented environment, weakness of education-oriented system, educational contents, dissemination of research-oriented culture, necessity of research-oriented in education, curriculum, facilities and infrastructures, leadership of educational system managers, motivation of students, fostering of critical spirit and problem solving, material and non-material support and research-based evaluation had a higher priority. **Conclusion:** Considering the identification of the explanatory components of research-oriented school with the aim of improving the quality of the teaching-learning process and prioritizing them, can be taken effective step to improve the research-oriented school through the components with higher priority.

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Introduction

Education is the most crucial element in the advancement of a society, requiring special attention in all circumstances. A reflection on the changes and developments in both developed and developing societies indicates that education plays a significant role in the growth and flourishing of talents (Erbilgin, 2019). In today's world, education is of high importance, and its continual changes and developments have led to increased attention to the issue of education, learning, and upbringing, making education a vital need in contemporary societies. Dynamic and constructive education requires creativity, innovation, change, and transformation, and focusing on the effective teaching-learning process is essential (Valizadeh, Sharifzadeh, & Davoudi Roknabadi, 2021). In educational systems, the teaching-learning process is of great importance; it is the responsibility of schools, and other educational activities are of secondary importance. Moreover, the teaching-learning process influences many decisions of the educational system or institution (Nithiyanandam, 2020). If education seeks progress, stakeholders, especially teachers who interact extensively with learners, must transform and improve the teaching-learning process. Professionalism in education and, foremost, in teaching is crucial, as the teacher is one of the key components of the educational system, and deficiencies in other components are influenced by this critical element (Safari, Abdollahi, & Sabouri, 2019). One of the effective factors in learning knowledge is the focus on the teaching-learning process, where knowledge intertwines with learners' real lives, fostering curiosity, self-confidence, and creative and critical thinking. This process is effective when it leads to the desired outcome of knowledge and information acquisition (Abazari, Mirjani Agdam, & Cheraghi, 2015). Teachers need to change their traditional views of the teaching-learning process, transforming from a traditional classroom where the teacher's role was to transfer knowledge and information to a facilitator of knowledge and information (Bin Shahreel, Bin Salemin, & Al Elyoumali, 2015). One of the primary responsibilities of teachers is choosing the best teaching-learning methods considering objectives, content, learners, and evaluation types (Sremsiu, Lazarievic, Krinovic, Mandic, & Medjovic,

2018). The most important outcome expected from the teaching-learning process is for learners to not directly acquire attitudes and skills from teachers, but rather, guided by teachers, discover and innovate new findings and ideas, learning what knowledge, attitudes, or skills they need and how to acquire them (Aguidou-Yogina, 2022).

One of the effective factors in improving the teaching-learning process is research orientation. The research-oriented approach in the educational system emerged as an alternative approach to solve issues in traditional, education-centered systems. This comprehensive approach encompasses problem-solving models, exploration, critical thinking, and inductive models, characterized by a process-oriented and cyclical nature, where students ask questions leading to further inquiry and new questions (Chavoshi, Shah Talebi, & Ebrahimzadeh, 2020). In research-oriented learning, learners use diverse sources of knowledge, information, and ideas to enhance their understanding in a specific area. Research-oriented learning plays a vital role in elevating learners' knowledge and skills levels, providing opportunities to face challenges, experience enjoyable learning, self-control, independence, and enhancing educational quality (Abili, Chrysoloras, Sihen, Mitimich, Al-Maraki, Seliger, et al., 2017). The importance of research in schools is such that it is referred to as a novel approach, the research-oriented approach, in various curriculum areas in the educational system, offering the benefits of enjoyable, independent learning, and lifelong learning challenge management (French & Wichesler, 2004). Education in a research-oriented approach is dynamic and active, where learners go through the same stages as scientists when dealing with uncertain situations and problems. Therefore, science and information should be learned in the same way they are produced by scientists, acquainting students with the process of science production rather than directly receiving facts, preparing them for real-world life (Sadati Kiadehi, Salehi, & Niazazari, 2021). A research-oriented school is one where the principal, teachers, students, and all programs are research-oriented, and student evaluation is based on questioning and facilitating inquiry, using lesson study as an effective model for promoting and enriching learning and professional knowledge production

(Maleki, Davari, & Zarei, 2018). Research orientation has features distinguishing it from traditional or non-research-oriented educational systems, including creativity, collaborative learning, information-centricity, information literacy, exploration, dominance of critical thinking, problem-solving thinking, and a collaborative process of knowledge production and transfer (Farb & Matjasko, 2012). Ladanu, Tortoriello, and Vincenzi (2020) found in their research on an experience of teaching algorithms through research-based learning that this method increased students' interest in learning, improved their skills and competencies, and enhanced their academic progress.

Research orientation is considered one of the fundamental objectives of the education system at various educational levels and is emphasized in documents such as the Fundamental Transformation Document and the National Curriculum Document. To utilize these legal capacities and operationalize them, it is necessary to create appropriate conditions that facilitate the realization of research orientation (Hosseinpour & Zeinabadi, 2019). Research background shows that although there have been studies on research-oriented higher education and research-oriented education, few studies have been conducted in this area, mostly qualitative, indicating a gap in quantitative research. Conducting quantitative research and developing tools to examine the status of research-oriented schools and prioritize effective components can better assist experts and planners in higher education in improving the teaching and learning process, thus creating conditions for improving the quality of the teaching-learning process. Consequently, a research-oriented school can lead to the qualitative improvement of the teaching-learning process for students. Therefore, the aim of this study was to identify and prioritize components that define a research-oriented school with the goal of improving the quality of the teaching-learning process.

Method

This study was applied in its objective and cross-sectional in its execution approach. The research population comprised teachers from all educational levels in Mazandaran Province during the 2023-2024 academic year. Based on Cochran's formula, 380 of these teachers were selected as the sample using multi-stage cluster sampling methods, taking into account the proportional sizes of the counties. In this sampling approach, Mazandaran Province was initially divided into three main clusters: East, West, and Central. Subsequently, the counties of Neka, Behshahr, and Sari from the East cluster, Qaemshahr, Babol, and Amol from the Central cluster, and Ramsar, Tonekabon, and Nowshahr from the West cluster were randomly selected. Schools were then randomly chosen from each cluster, and all teachers from these selected schools were sampled and responded to the research instruments. It is noteworthy that for this purpose, the population proportion of each county was calculated, and samples were selected from the counties in accordance with these proportions.

Materials

1. The Researcher-Constructed Questionnaire for a Research-Oriented School to Improve the Teaching-Learning Process: This questionnaire, designed by the researchers of this study to identify the components of a research-oriented school for the qualitative improvement of the teaching-learning process of students, comprised 118 items across 24 components. These components included future-oriented thinking in research, developmental attitudes towards research and education, the necessity of research orientation in education, weaknesses of the education-centered system, top-level policies, curriculum, educational contents, facilities and infrastructure, student motivation, leadership of educational system managers, material and non-material supports, religious and national values, research-oriented evaluation, fostering a critical and problem-solving spirit, creativity and wisdom in education, empowering human resources, motivational incentives, scientific and research workshops and festivals, creating a research-oriented environment, promoting a research-oriented culture, educational outcomes, individual outcomes, educational system outcomes, and social outcomes. Each item was rated on a five-point scale ranging from very low (score 1) to very high (score 5), with higher scores indicating a greater presence of that component or feature. The face validity of the Researcher-Constructed Questionnaire for a Research-Oriented School to Improve the Teaching-Learning Process was confirmed by 22 experts, professionals, and specialists from Mazandaran Province with a minimum of a master's degree and more than 10 years of service experience, and the results of other psychometric indices are observable in the findings section.

Implementation

To conduct this study, after interviewing experts, professionals, and specialists from

Mazandaran Province, a 118-item questionnaire in 24 components titled Researcher-Constructed Questionnaire for a Research-Oriented School to Improve the Teaching-Learning Process was designed. After three rounds of Delphi, their opinions were reviewed and applied, ultimately validating the face validity of the questionnaire. In the next stage, quantitative samples were selected using a multi-stage cluster sampling method, taking into account the proportion of the size of the counties. The importance and necessity of research were explained to the samples, reassurances were given regarding ethical considerations, and they were asked to respond to the research instruments with utmost care. After completing the tools and verifying their completeness by the researcher, the samples were thanked for participating in the study, and coordination was made regarding the communication of research results.

Data related to the demographic information form were analyzed using frequency and percentage frequency methods, and the data from the Researcher-Constructed Questionnaire for a Research-Oriented School to Improve the Teaching-Learning Process were analyzed using exploratory factor analysis and the Friedman test in SPSS software.

Results

In this study, 380 individuals participated, the majority being women (52.11%), married (82.63%), in the age range of 41 to 50 years (37.37%), with bachelor's degrees or less (45.00%), and 16 to 20 years of service experience (25.26%). Prior to conducting factor analysis, its assumptions were examined, with the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy being higher than 0.80 and the Bartlett's Test of Sphericity being significant at less than 0.001, indicating the necessary conditions for conducting exploratory factor analysis. Also, the factor loadings of all items (all 118 items) were higher than 0.40, and therefore none of the items were eliminated. A summary of the exploratory factor analysis to identify the components of a research-oriented school for the qualitative improvement of the teaching-learning process can be seen in Table 1.

Table 1. The Results of Exploratory Factor Analysis and Reliability Tests						
Dimension	Component	Items Freq.	Factor Loading	AVE	Cronbach's Reliability	Composite Reliability
Developmental Perspective	Future-Oriented Thinking in Research	5	0.81	0.66	0.82	0.88
	Developmental Attitude Towards Research & Teaching	4	0.84	0.71	0.79	0.88
Inefficiency of Current Educational System	Necessity of Research Orientation in Education	4	0.82	0.67	0.75	0.86
	Weakness of the Education-Centric System	4	0.83	0.68	0.76	0.86
Teaching-Learning Policies	Top-Level Policies	5	0.79	0.63	0.80	0.87
	Curriculum	5	0.78	0.61	0.84	0.88
	Educational Contents	4	0.82	0.67	0.75	0.85
Foundation and Motivation	Facilities and Infrastructure	4	0.84	0.70	0.79	0.87
	Student Motivation	4	0.83	0.68	0.84	0.89
Top-Level Support	Leadership of Educational System Managers	4	0.78	0.60	0.78	0.85
	Material and Non-Material Supports	5	0.79	0.62	0.80	0.87
Understanding the Value of Research-Orientation	Religious and National Values	4	0.78	0.61	0.79	0.86
	Research-Oriented Evaluation	3	0.89	0.79	0.73	0.88
	Fostering a Critical Spirit and Problem-Solving	5	0.78	0.60	0.77	0.85
Empowerment Strategies	Creativity and Wisdom in Education	5	0.76	0.59	0.82	0.87

	Empowering Human Resources	5	0.83	0.68	0.84	0.89
Supportive Strategies	Motivational Incentives	4	0.82	0.67	0.75	0.86
	Scientific and Research Workshops and Festivals	5	0.80	0.63	0.81	0.87
Environmental-Cultural Strategies	Creating a Research-Oriented Environment	6	0.80	0.63	0.85	0.89
	Spreading a Research-Oriented Culture	5	0.76	0.57	0.75	0.84
Micro Outcomes	Educational Outcomes	5	0.81	0.64	0.81	0.87
	Individual Outcomes	6	0.79	0.61	0.84	0.88
Macro Outcomes	Outcomes of the Educational System	6	0.81	0.64	0.86	0.90
	Social Outcomes	5	0.82	0.66	0.83	0.88

According to the results in Table 1, the research-oriented school for the qualitative improvement of the teaching-learning process had 24 components in 11 dimensions, all of which had factor loadings and extracted variance averages higher than 0.50 and Cronbach's alpha and composite reliability higher than 0.70. A summary of the Friedman test for prioritizing the components of a research-oriented school for the qualitative improvement of the teaching-learning process can be seen in Table 2.

Table 2. The Results of Friedman Test				
Component	Mean	Standard Deviation	Weight	Priority
Future-Oriented Thinking in Research	2.97	0.82	0.069	5
Developmental Attitude Towards Research and Teaching	2.93	0.82	0.047	8
Necessity of Research Orientation in Education	3.07	0.76	0.018	17
Weakness of the Education-Centric System	3.09	0.82	0.026	14
Top-Level Policies	3.14	0.77	0.034	10
Curriculum	3.07	0.80	0.017	18
Educational Contents	3.10	0.80	0.025	15
Facilities and Infrastructure	3.07	0.84	0.013	19
Student Motivation	2.89	0.84	0.010	21
Leadership of Educational System Managers	2.98	0.77	0.013	20
Material and Non-Material Supports	2.94	0.80	0.008	23
Religious and National Values	2.99	0.78	0.029	12
Research-Oriented Evaluation	3.07	0.84	0.006	24
Fostering a Critical Spirit and Problem Solving	3.00	0.71	0.009	22
Creativity and Wisdom in Education	3.00	0.78	0.033	11
Empowering Human Resources	3.02	0.83	0.050	7
Motivational Incentives	3.01	0.82	0.086	3
Scientific and Research Workshops and Festivals	3.07	0.80	0.106	2
Creating a Research-Oriented Environment	2.87	0.79	0.027	13
Spreading a Research-Oriented Culture	2.95	0.73	0.022	16
Educational Outcomes	3.12	0.77	0.041	9
Individual Outcomes	2.97	0.79	0.069	6
Outcomes of the Educational System	3.09	0.82	0.073	4
Social Outcomes	3.04	0.79	0.166	1

Based on the results in Table 2, in a research-oriented school for the qualitative improvement of the teaching-learning process, the components with higher priority were, in order, social outcomes, scientific and research workshops and festivals, motivational incentives, educational system outcomes, future-oriented thinking in research, individual outcomes, empowering human resources, developmental attitudes towards research and education, educational outcomes, top-level policies, creativity and wisdom in education,

religious and national values, creating a research-oriented environment, weaknesses of the education-centered system, educational contents, promoting a research-oriented culture, the necessity of research orientation in education, curriculum, facilities and infrastructure, leadership of educational system managers, student motivation, fostering a critical and problem-solving spirit, material and non-material supports, and research-oriented evaluation.

Conclusion

Research-orientation plays a crucial role in improving academic performances. Although it is well addressed in high-level documents, such as the Fundamental Transformation Document of Education, providing legal and institutional frameworks for research-oriented schools, its implementation in Iranian schools is still limited, with traditional, education-centric models predominating. Therefore, the objective of this study was to identify and prioritize components of a research-oriented school to enhance the quality of the teaching-learning process.

The findings of this study indicated that the factor loadings of all items were above 0.40, and the research-oriented school for improving the quality of the teaching-learning process comprised 24 components in 11 dimensions. Each component's factor loading and extracted variance mean were above 0.50, with Cronbach's alpha and composite reliability above 0.70. Further findings revealed higher priority for components such as social outcomes, scientific and research workshops and festivals, motivational incentives, educational system outcomes, future-oriented thinking in research, individual outcomes, empowerment of human resources, developmental attitudes towards research and education, educational outcomes, top-level policies, creativity and wisdom in education, religious and national values, creating a research-oriented environment, weaknesses of the education-centered system, educational contents, promoting a research-oriented culture, the necessity of research orientation in education, curriculum, facilities and infrastructure, leadership of educational system managers, student motivation, fostering a critical and problem-solving spirit, material and non-material supports, and research-oriented evaluation.

These findings align with those of previous studies by Ladanu et al. (2020), Razmjooei et al. (2021), Jafari Rostami et al. (2021), Chavoshi et al. (2021), Sadati Kiadehi et al. (2021a), Akrami (2020), Chavoshi et al. (2020), Hosseinpour and Zeinabadi (2019), and Abbasi Esfajir (2015). These studies suggest that a research-oriented approach nurtures students focused on expanding capabilities, creativity, and innovative ideas, thus producing research-minded and creative individuals. Furthermore, focusing on improving the quality of the teaching-learning process steers the educational system towards scientific innovations, leading to individuals who are creative and innovative, not solely focused on theoretical issues. Moving towards research-orientation in the student community could lead to lifelong learning, significantly impacting the society's social, economic, political, and cultural conditions. To achieve a research-oriented school, in the component of future-oriented thinking towards research, actions towards advancement, improvement, problem-solving in research, analysis and knowledge, stimulating diligent curiosity, re-engineering and redefining structures to align with current changes and transformations, aligning with needs based on economic, scientific, technical, etc., transformations, and believing in the importance of research for self-sufficiency and diverse productions to meet national needs are essential. In the component of developmental attitudes towards research and education, changes can be made in the educational system of the country in human resources and textbooks, more teachers following modern teaching methods, fundamental changes in education and replacing traditional education with research-oriented education, and focusing on active teaching methods like brainstorming and problem-solving. Given the different priorities of the identified components for a research-oriented school to improve the teaching-learning process, it is logical to first provide a basis for the high-priority components and then work on improving other components.

The necessity of research-orientation in education requires a research-minded and research-oriented perspective, the recreation of existing educational systems aligned with the age of knowledge and rapid transformations, knowledge and ability based on research activities, creativity, innovation, ideation,

nurturing ideas, and technopreneurship combined with applied research. The weakness of the education-centered system indicates the inadequacy of current habits to deal with new situations and the need for research and thought, lack of skills in school and university graduates due to pure teaching and lack of focus on research, non-application of learned materials in real life, and the need for more extensive research in response to increasing problems in various fields (Sadati Kiadehi et al., 2021a). For a research-oriented school, top-level policies could focus more on research in all aspects of education, revise and redefine educational goals, a research-based grand plan for education, mandating research-orientation in the Sixth Five-Year Development Plan law, and constructive interaction among all educational, administrative, political, social, and economic sectors of the country. In this context, the curriculum should pay special attention to including library reading hours in schools, incorporating research methodology courses alongside other subjects, focus on student research centers, attention to research projects in schools as a starting point for research activities, and encouraging students to go beyond textbooks and explore other sources to expand their knowledge and findings. Furthermore, educational contents should seek to change textbooks towards research-orientation, improve research services, integrate research into all aspects of the school curriculum, and eliminate low-quality, memorization-based texts (Akrami, 2020).

Additionally, in the component of facilities and infrastructure, actions such as designing a creative educational system, providing necessary facilities for assigned tasks, creating new spaces and research infrastructures for education, establishing dynamic laboratories, workshops, and libraries in schools, and developing both the quantity and quality of electronic content for improving attitudes and teaching research concepts and skills from basic to advanced levels can be undertaken. In the area of student motivation, effective steps can be taken to enhance students' enthusiasm for learning, implementing motivational and encouraging activities, developing and improving a positive attitude towards inquiry and research, fostering an explorative and thoughtful spirit in students, and nurturing a scientific and research-oriented mindset

(Chavoshi et al., 2020). For having a research-oriented school in the component of leadership of educational system managers, conditions can be created for managers and educators to adopt scientific, logical, and critical thinking methods, replace traditional managers to have research-oriented schools, realize principles of wisdom, responsibility, and dynamism by managers and educators, and prevent decisions without scientific and research backing in education and other related educational issues. To increase material and non-material supports, approaches such as emphasizing the importance of research activities and supporting them, comprehensive support for innovations, creativity, and idea generation, material and spiritual support for successful projects and educational innovations by students, teachers, and managers, appropriate investment and meticulous planning in the educational and research system, and providing sufficient financial resources for equipping workshops, laboratories, and libraries can be utilized (Abbasi Esfajir, 2021).

In the component of religious and national values, the focus should be on following Islamic perspectives and values towards research and scholarship, Islamic teachings on exploration and investigation in education, attention to research and research-orientation in Iranian civilization and historical background regarding discoveries and inventions. Research-oriented evaluation is achieved through careful attention to research-oriented assessment alongside research-oriented teaching, changing the formative and summative evaluation system, emphasizing research-oriented exams like performance tests, and prioritizing research-based assessments. For fostering a critical spirit and problem-solving, solutions include problem-solving through scientific methods, cultivating an inquisitive and exploratory human resource spirit, changing textbooks with a problem-solving and research-oriented approach, creating an efficient educational system with structures, models, and methods focused on problem-solving and research, and promoting creative and participatory learning through school-community interaction.

In a research-oriented school for the component of creativity and wisdom in education, strategies such as creativity-focused courses and teaching, developing abilities and attitudes necessary for integrating theories with practice, establishing problem-identification workshops, avoiding

pure imitation and emotional thinking, fostering a sense of how to learn and how to solve problems instead of how to pass exams, avoiding bias in thought and action, and emphasizing research outcomes in decision-making and policymaking can be adopted. Empowering human resources is realized through training researchers, competent and qualified experts in specialized fields, educating teachers in article writing methods and conducting research, acquainting teachers with action research and lesson study methods, having specialized teachers with sufficient skills in certain subjects like technology and innovation, and relying on scientific knowledge in teacher recruitment and reviewing the employment of new teachers (Razmjooei et al., 2021).

Furthermore, for having a research-oriented school in the component of motivational incentives, attention can be paid to ensuring the livelihood of researchers and compensating them financially, creating conditions and incentives for research and flexible structures, focusing on motivational topics for researchers and valuing research outcomes and genuine researchers. In scientific and research workshops and festivals, conditions can be created for practical, workshop, and laboratory research, organizing festivals based on active teaching methods like exploration, setting up research workshops and problem-solving training, valuing research, group activities, camps, and research-based scientific visits, and facilitating camps and visits in schools with a research focus. For having a research-oriented school in creating a research-oriented environment, strategies like giving more open space and freedom to schools for research activities, creating a school environment dominated by research, inquiry, critical thinking, and problem-solving, eliminating fear of expressing wrong answers in communication with educators and school managers, democratizing information among students and teachers, creating opportunities for group work and more student interactions in research teams, and reengineering to provide solutions for transforming educational processes from education-centered to research-oriented can be utilized. Spreading a research-oriented culture is achieved through parents' and educational partners' perspectives on research, promoting a research culture in schools, solving cultural,

economic, scientific, and educational problems through research, having a research system alongside the educational system, and a research-oriented technological approach in curriculum design and development. In the component of educational outcomes, the focus should be on increasing group work performance among students, improving creativity, curiosity, and expression of new ideas, institutionalizing problem-oriented spirit, enhancing professional ability through critical thinking, moving away from textbook and grade centrality to research-oriented thinking and reasoning. In the area of individual outcomes, increasing self-confidence and strengthening hope for life, experiencing the taste of thinking and research through hearing, seeing, and experimenting, improving students' exploratory outlook with creative thinking, developing the power to analyze various issues, having perseverance and avoiding despair, steering away from superficiality and avoiding hasty, baseless actions can be utilized (Chavoshi et al., 2020).

Another essential component in a research-oriented school is the outcomes of the educational system. To improve this, efforts can be made towards the independence and competence of learning environments, establishing a dynamic education system, fostering a culture of inquiry in schools and society, eliminating biases and traditionalism in teaching and learning, nurturing risk-taking individuals in the education system, and documenting and disseminating research findings nationally and internationally. The component of social outcomes can be realized through the development of social and organizational knowledge-based growth, educating informed and capable citizens in problem-solving, shaping a learning society, innovating in various aspects of personal and social life, and enhancing knowledge production and scientific power of the country.

The limitations of the research scope and its implementation included restricting the research sample to teachers in Mazandaran Province in the 2023-2024 academic year, using a researcher-constructed questionnaire, differences in intelligence, interest, and diverse demographic characteristics among the samples, and inability to control these factors, and the influence of economic, social, and cultural characteristics on the responses of the samples.

Therefore, conducting research on teachers from other provinces, research on teachers differentiated by gender or even educational institution, using interviews or observations, and controlling intervening and confounding variables such as intelligence, interest, and different demographic characteristics are recommended. Given the identification and prioritization of components defining a research-oriented school to improve the quality of the teaching-learning process, effective steps can be taken through the higher-priority components to enhance a research-oriented school. Thus, education experts and professionals, including designers, planners, or implementers, should utilize the results of this research and provide conditions for all identified components, especially those with higher priority.

Conflict of Interest

Acknowledgments

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