




Designing A Paradigmatic Model of Barriers to Innovation Management in Ahvaz Primary Schools

Mahmoud. Rahimi¹, Leila. Behmai^{2*}, Gholam Hossein. Barkat³

¹ PhD student, Department of Educational Management, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran

² Assistant Professor, Elementary Education Department, Omidiyeh Branch, Islamic Azad University, Omidiyeh, Iran

³ Associate Professor, Department of Educational Management, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran

* Corresponding author email address: LeilaBehmai14022023@gmail.com

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ABSTRACT

Objective: The purpose of the present study was to design a paradigmatic model of innovation management barriers in primary schools of Ahvaz city.

Method: The research method was qualitative and, in terms of purpose, applied. The statistical population included experts in schools and universities, selected through purposive and snowball sampling. The research tool included semi-structured interviews, whose validity was established through face validity, and reliability was determined using the inter-coder agreement coefficient, resulting in 0.81. Data were analyzed using grounded theory method.

Results: The findings revealed that causal conditions included understanding innovation characteristics, feeling the necessity for innovation, identifying individual differences among employees, managing information and communication technology, organizational culture, risk-taking in school employees, organizational structure, material resources, and transformative leadership; contextual conditions included individual characteristics of employees, employee experiences, individual characteristics of the manager, management style, organizational rules and regulations, organizational climate, and having an innovation model. Moreover, intervening conditions included psychological barriers, intolerance of ambiguity and failure, educational barriers, research barriers, performance evaluation barriers, structural barriers, human resource barriers, managerial barriers, and cultural barriers within the organization. Finally, strategic conditions included internal and external networking, division of labor, strategic management, committed and specialized human resources, politicization, having an innovative spirit among employees, the existence of a suggestion acceptance system in schools, administrative hierarchy, delegation of authority by the manager to subordinates, employee support, strategic planning, and the outcomes included increased mental health of employees and students, a creative school environment, a reward system for innovative and creative employees, a research-oriented culture, a learning organization, and improved educational quality.

Conclusion: Based on the results, it can be said that the barriers to innovation management in primary schools of Ahvaz city are various factors, and the sub-system of education and management should prioritize and address these barriers.

Keywords: Barriers, Management, Innovation, Primary Schools.

1 Introduction

The Ministry of Education, as one of the valuable and strategic assets of the country, holds a significant role and position in society. Today, the primary concern of a country's educational system is to create an appropriate environment for the growth and excellence of intellectual capital in an information- and knowledge-based society (Wu & Liu, 2021). In recent years, extensive efforts have been made in education to encourage students' creativity and innovation. In the current era, students need to enhance their critical and creative thinking skills for decision-making and solving complex societal issues, to cope with the astonishing transformations of the third millennium (Pouraslan, 2022).

There are reasons for the misalignment between the motive for educational innovation observed in some areas, significant recent educational innovations, and the everyday reality of the educational system (Mehari et al., 2022). Firstly, if education is viewed as a complete system responsible for fulfilling a country's need to educate its community members and develop their knowledge and expertise throughout their active lives, it should be acknowledged that all levels of education are interrelated and interdependent (Karsantik, 2021). Furthermore, education, being a system itself, is part of a larger social super-system intricately linked to it. Education, as a social institution, reflects all the values, laws, principles, and traditions of the society to which it belongs. Therefore, education must be considered a vital, complete, and social entity, and its problems should be addressed considering these relationships and dependencies, both within the educational system and in society. If the society supports innovations in education, the educational system will continuously and effectively evolve and progress (Prytz, 2021).

Innovation management is one of the most critical management processes in educational organizations, activated and flourished through management strategies, methods, and tools such as Total Quality Management, participatory management, organizational suggestion systems, motivational systems, and learning organizations. Organizational change in education creates various management challenges (Serdyukov, 2017). Firstly, internal and external drivers of change must be controlled simultaneously to manage isomorphic pressures and guide organizational transformation. Secondly, specific strategies must be employed to overcome obstacles to organizational change, including ambiguity and uncertainty. Most

importantly, the side effects of organizational change must be recognized to mitigate their impact on employees' working conditions (Endres, Huesig, & Pesch, 2022).

Innovation management combines innovation process management and change management. It refers to product, business process, marketing, and organizational innovation. Innovation management is the subject of the ISO 56000 series (formerly 50500) standards developed by ISO TC 279. It includes a set of tools allowing managers and workers or users to cooperate with a common understanding of processes and goals (Soleimanzadeh, Shojaei, & Hosseini Dronkola, 2021). Innovation management enables an organization to respond to external or internal opportunities and use its creativity to introduce new ideas, processes, or products. It is not confined to research and development. It involves employees or users at all levels in creative participation in the development and marketing of a product or service (Satell, 2017).

Using innovation management tools, management can stimulate and employ the workforce's creative capabilities for the continuous development of an organization. Common tools include brainstorming, prototyping, product life cycle management, idea management, design thinking, TRIZ, the phase-gate model, project management, production line planning, and portfolio management (Kerzner, 2022). This process can be seen as an evolutionary integration of organization, technology, and market, iterating a set of activities: search, selection, implementation, and capture. As the product life cycle shortens due to increased competition and faster time-to-market, organizations are forced to reduce their time to market; thus, innovation managers must decrease development time without compromising quality or market needs (Endres, Huesig, & Pesch, 2022; Glimps-Smith, 2023).

The structure, strategy, organizational life cycle, size, environment, and technology of the educational system (system) do not support innovation in schools. The existence of individual barriers (lack of confidence, fear of criticism and failure, desire for conformity, and lack of mental focus), social barriers (family and educational environment), and organizational barriers (management, organizational structure, organizational culture) are other factors influencing the lack of innovation in schools (Lourmpas & Dakopoulou, 2014; Mirkamali, Ezati, & Naseri, 2016). We live in a world of rapid changes in technology, new products, and new business methods, where innovation is considered vital for business success (Satell, 2017). However, in

education, many of our schools and their approaches to teaching and learning have not significantly changed over the years, leaving innovation largely unrecognized (Glimps-Smith, 2023). Where innovation is included in discussions about educational change, ideas about innovation reflect broader views on education. The first model, which is the basis of the current high-stakes testing and accountability system, is a hierarchical system based on compliance with procedures, management of conformity, and doing right. The second recognizes teaching as a profession, supports teachers to do the right thing, and values collaboration and sharing best practices (Ahmadpour, Bahmaei, & Barekat, 2022; Niu et al., 2023). The current approach to school improvement in terms of testing and high accountability has also been criticized as part of neoliberal education, prioritizing competitive market mechanisms and choice (Wilson & Sy, 2021).

Research in this field has been conducted both domestically and internationally. For instance, Ahmadpour, Bahmaei, and Barekat (2022) demonstrated that educational needs are influenced by educational tools and environmental factors, obstacles in education, and the realization of student capability development in the learning environment of schools. Educational tools and desirable goals, as well as entrepreneurial education and the future of students, constitute the model of entrepreneurship in elementary schools (Ahmadpour, Bahmaei, & Barekat, 2022). According to Motavalli et al.'s (2021) research findings, among individual factors affecting organizational creativity, independence, the sense of effectiveness, the sense of meaningfulness, and constructive thinking strategies had the most significant impact and meaningful relationship with organizational creativity (Motavalli, Yazkasti, & Sadeqiarani, 2022). Furthermore, Niu (2023) showed that among Chinese companies listed during 2007-2019, digital transformation has a positive impact on company innovation and helps remove innovation barriers (Niu et al., 2023). Serdyukov (2017) also demonstrated that authenticity in the systemic approach to education and educational innovations is crucial in providing a comprehensive classification of innovations and in uncovering barriers to innovation, contributing to new discussions about the effectiveness of technological applications and in time efficiency in education (Serdyukov, 2017).

Therefore, considering the above and also considering the importance of innovation in educational organizations and

the necessity of managing it, especially in schools, which are symbols of educational organizations, this research intends to examine the barriers to innovation management in schools.

2 Methods and Materials

2.1 Study design and Participant

The present research method was qualitative and applied in purpose. In the qualitative phase of this research, the statistical population consisted of experts and connoisseurs who had practical and theoretical experience in the field of educational innovation in schools and universities and held master's or doctoral degrees in educational sciences or their area of study was related to the research topic. These individuals were selected using purposive and snowball sampling methods. For the sample size in this section, theoretical saturation logic was used. Therefore, the selected sample size was 14 individuals from the statistical population, chosen by purposive and snowball methods.

2.2 Measures

2.2.1 Semi-Structured Interview

The research tool included semi-structured interviews and its validity was established by face validity, and reliability was determined using the agreement coefficient between coders, which resulted in a score of 0.81.

2.3 Data Analysis

For data analysis, the coding method was used. MAXQDA18 software was also used for data analysis.

3 Findings and Results

3.1 Causal Conditions

Causal conditions refer to those conditions that are the primary cause of the phenomenon under study (the innovation management model). The results of the content analysis of respondents' answers to questions such as their perception and interpretation of mental models and effective components on this topic indicate the existence of three main categories regarding causal conditions for creating the phenomenon under study, with their open codes in Table 1:

Table 1

Causal Conditions

Category	Open Codes
Recognition of Innovation Characteristics	Recognition of Innovation Characteristics
Sense of Necessity for Innovation	Teachers' Disbelief in the Importance and Necessity of Innovation
Identifying Individual Characteristics and...	Expectation of Creativity from Employees by the Manager, Identifying Creative and Innovative Individuals, Paying More Attention to Individual Differences
Management of Information and Communication	Technological Capability, Use of Modern Educational Technologies in Service Delivery
Organizational Culture	Changing Organizational Culture from Hierarchical to Rational and Participatory, Organizational Culture Encouraging Innovation, Organizational Culture Supporting Creativity and Innovation, Organizational Culture Encouraging Innovation in Schools
Risk-Taking by School Employees	Encouraging Risk-Taking Spirit, Risk-Taking by School Employees, Managerial and Employee Risk-Taking
Organizational Structure	Innovative Organizational Structure, Lack of a Specific Organizational Structure for Facilitating Innovation, Lack of a Defined Structure for Receiving and Processing Ideas, Absence of Competitive Structure Among Schools in Innovation, Use of Flexible Organizational Structure, Change in Hierarchical Structure
Material Resources	Expansion of Tools and Technology, School Equipment and Facilities, Availability of Facilities and Equipment, Availability of Suitable Workspace
Transformational Leadership	Use of Modern Leadership Styles in Schools, Leadership as Initiator of Changes and Reforms, Leader as Observer and Evaluator of Innovation in Schools, Leader as Implementer of Innovation in Schools

3.2 The Central Phenomenon:

The main event or phenomenon that a series of actions/interactions exist to control or manage, related to it.

The central phenomenon under study in this research (the innovation management model) is presented in [Table 2](#):

Table 2

Central Phenomenon

Central Phenomenon	Open Codes
Welcoming innovative plans	Participation in innovative plans, resistance to change, the tendency to maintain the status quo
Organizational commitment	Loyalty to the organization, commitment to organizational goals, involvement in organizational activities
Change management	Adapting to new methods, flexibility in work, updating knowledge and skills
Self-control and self-assessment of employees	Independence in work, self-regulation, self-evaluation
Conflict management	Conflict resolution skills, dealing with disagreements, teamwork
Administrative concentration level	Decentralization, power delegation, responsibility sharing
Delegation of authority to subordinates	Empowerment, decision-making freedom, leadership skills
Teamwork	Collaboration, communication skills, group work ethic
Freedom of expression	Encouraging new ideas, open communication, safe environment for expression
External organizational communication	Relationship with other organizations, networking, external partnerships
Employment of participative management	Involvement in decision-making, democratic leadership, employee participation
Supportive environment	Positive work culture, support for creativity, encouragement for innovation

3.3 Contextual Conditions

Denote a set of special characteristics that refer to a phenomenon; in other words, the location of events or occurrences related to a phenomenon along a dimension

where interaction for controlling and responding to the phenomenon occurs. The contextual conditions in this research (the innovation management model) are presented in the [Table 3](#):

Table 3

Contextual Conditions

Contextual Conditions	Open Codes
Goals	Educational goals, organizational objectives, vision and mission alignment
Individual characteristics of employees	Skills, competencies, personality traits
Employees' experiences in innovation	Previous innovative activities, learning from past initiatives, adaptability
Individual characteristics of the manager	Leadership style, decision-making ability, motivational skills
Management style	Autocratic vs. democratic, flexible vs. rigid, innovative vs. conservative
Organizational environment	Work culture, physical working conditions, organizational resources
Organizational rules and regulations	Compliance requirements, operational guidelines, policy enforcement
Organizational climate	Morale, team dynamics, workplace relationships
Having an innovation model	Adopted innovation strategies, role models, best practices

3.4 Intervening Conditions

Broad and intervening conditions that affect the nature of action/interaction. In this research, based on the content

analysis of interviews, components are identified as intervening (mediating) environmental conditions, as described in [Table 4](#):

Table 4

Intervening Conditions

Intervening Conditions	Open Codes	Open Codes
Psychological Barriers	Inflexibility, Conformity, Lack of Self-confidence, Anxiousness, Shyness	
Intolerance to Ambiguity and Failure	Fear of Failure, Resistance to Risk, Fear of Criticism	
Regulations and Policies	Lack of Legal Guarantees, Unlawful Economic Actions in Education	
Non-Use of Knowledge Management	Lack of Access to Relevant Information, Insufficient Expertise, Overemphasis on Theoretical Knowledge	
Attitudinal Barriers	Negative Perceptions of Subordinates, Misconception of Innovation Costs, Reluctance to Change, Mistrust in Innovation, Lowering Teachers' Needs	
Educational Barriers	Lack of Specialized Training, Lack of Continuous Training	
Research Barriers	Absence of Research Culture, Lack of Research and Innovation Unit	
Performance Evaluation Barriers	No Special Consideration for Innovation, Improper Performance Appraisal, Lack of Evaluation Criteria	
Structural Barriers	Absence of Innovation Advocacy, Formal and Rigid School Environment, Concentrated Educational System, Bureaucratic Inefficiency, Hierarchical Structure, Lack of Feedback System	
Human Resource Barriers	Knowledge Deficiency, Reluctance to Use New Technologies, Lack of Motivation, Fear of Criticism	
Management Barriers	Ineffective Leadership, Instability in Management, Neglect of Creativity, Resistance to Innovation, Quantity over Quality Focus	
Cultural Barriers in Organization	Intolerance to Criticism, Fear of Failure, Improper Reward and Punishment, Neglect of Innovative Ideas, Lack of Support for Innovators	

3.5 Strategies and Consequences

The strategies referred to in grounded theory involve solutions for dealing with the phenomenon under study, aimed at managing the phenomenon, coping with it, and

responding to it, and consequences are the result of actions (deeds) and reactions (responses) to the conditions related to the phenomenon. In this study, two primary strategies are suggested to achieve the desired state in presenting the model of innovation management in schools, presented in [Table 5](#):

Table 5

Strategies and Consequences

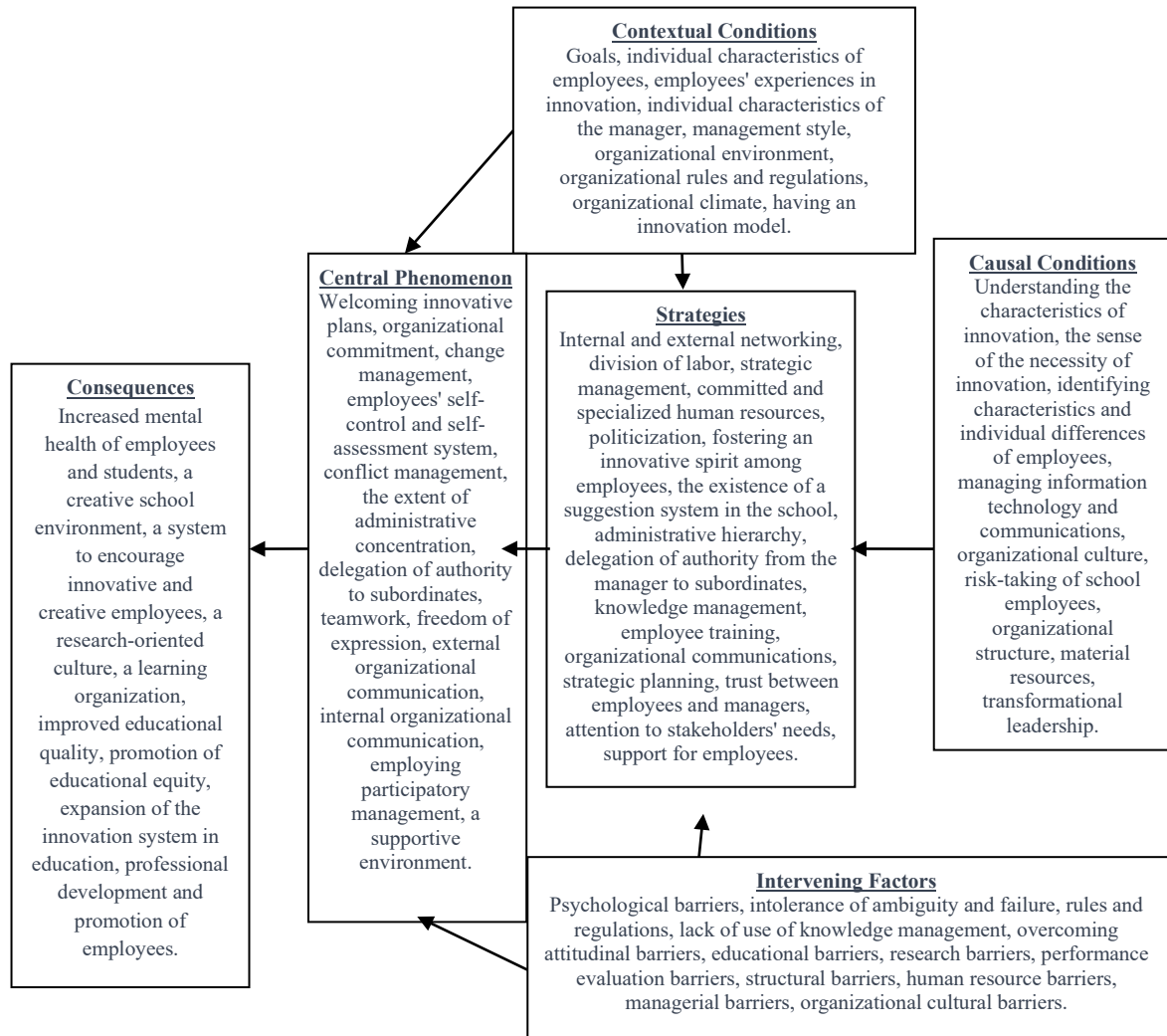
Category	Open Codes
Strategic Conditions	<ul style="list-style-type: none"> - Internal and External Networking - Work Division - Strategic Management - Committed and Expert Human Resources - Politicization - Innovative Spirit Among Employees - Existence of a Proposal Acceptance System in School - Administrative Hierarchy - Delegation of Authority by Manager to Subordinates - Knowledge Management - Employee Training - Organizational Communications - Strategic Planning - Trust Between Employees and Manager - Attention to Stakeholders' Needs - Support for Employees
Consequences	<ul style="list-style-type: none"> - Improved Mental Health of Employees and Students - Creative School Environment - System of Encouraging Innovative and Creative Employees - Research-Oriented Culture - Learning Organization - Improved Educational Quality - Promotion of Educational Equity - Expansion of the Innovation System in Education - Career Development and Advancement of Employees

Various methods exist for validity verification in grounded theory, and in this research, participant review and expert review methods were used. After receiving corrective

opinions and necessary consultations with guide professors and advisors, necessary edits were made, and the final model is presented in [Figure 1](#).

Figure 1

Paradigm Model



4 Discussion and Conclusion

The purpose of this research was to design a paradigmatic model of innovation management barriers in elementary schools in Ahvaz city. The findings revealed that in causal conditions, 9 categories were identified, including understanding the characteristics of innovation, feeling the necessity of innovation, recognizing the characteristics and individual differences of employees, managing information and communication technology, organizational culture, risk-taking of school employees, organizational structure, material resources, and transformational leadership. In the central phenomenon, 13 categories were identified, encompassing welcoming innovative plans, organizational commitment, change management, self-control and self-

assessment system of employees, conflict management, administrative focus, delegation of authority to subordinates, teamwork, freedom of speech, external and internal organizational communication, employing participatory management, and a supportive environment. In contextual conditions, 13 categories were identified, including goals, individual characteristics of employees, employees' experiences in innovation, individual characteristics of the manager, management style, organizational environment, organizational rules and regulations, organizational climate, and having an innovation model.

Additionally, in intervening or mediating conditions, 12 categories were identified, including psychological barriers, intolerance of ambiguity and failure, rules and regulations, lack of knowledge management utilization, overcoming attitudinal barriers, educational barriers, research barriers,

performance evaluation barriers, structural barriers, human resource barriers, managerial barriers, and organizational cultural barriers. In strategic conditions, themes included internal and external networking, division of labor, strategic management, committed and specialized human resources, politicization, fostering an innovative spirit among employees, the existence of a suggestion system in school, administrative hierarchy, delegation of authority from the manager to subordinates, knowledge management, employee training, attention to stakeholders' needs, and support for employees. The consequences included increased mental health of employees and students, a creative school environment, a system to encourage innovative and creative employees, a research-oriented culture, a learning organization, improved educational quality, promoting educational equity, expanding the innovation system in education and professional development and promotion of employees. This research corroborated several studies (Ahmadpour, Bahmaei, & Barekat, 2022; Endres, Huesig, & Pesch, 2022; Kerzner, 2022; Lourmpas & Dakopoulou, 2014; Mirkamali, Ezati, & Naseri, 2016; Motavalli, Yazkasti, & Sadeqiarani, 2022; Satelli, 2017; Serdyukov, 2017; Soleimanzadeh, Shojaei, & Hosseini Dronkola, 2021; Wilson & Sy, 2021; Wu & Liu, 2021) in terms of categories like information and communication technology management, organizational culture, and organizational structure.

Furthermore, it's important to note that education, as a social institution, is essential for the survival and flourishing of society. It must be comprehensive, sustainable, and excellent, and continually evolve to meet the challenges of a rapidly changing and unpredictable globalized world. This evolution should be systematic, adaptive, and scalable. Teachers, college professors, administrators, researchers, and policymakers are expected to innovate in both theory and practice of teaching and learning, as well as other aspects of this complex organization, to ensure all students are prepared for life and work. Innovation is essential for the

survival and advancement of an individual, a nation, and humankind. Innovations in education are particularly important as education plays a key role in creating a sustainable future. "Innovation is like evolution, a biological process that keeps species evolving to compete for survival." Thus, innovation should be viewed as a tool for necessary and positive changes. Every human activity (e.g., industrial, commercial, or educational) needs continuous innovation to remain viable (Serdyukov, 2017).

5 Limitations and Suggestions

The limitations of this research relate to the method, as it solely employed a qualitative approach, requiring cautious generalization of results. Additionally, the findings are specific to one region, necessitating further research in other areas. It is suggested that monthly meetings on new administrative and teaching methods and their use, led by experienced, exemplary, and hardworking teachers, be held for all teachers to enhance information transmission to students. Introducing an annual exemplary school program at the district, city, provincial, or national level (Iran or other countries) to familiarize other administrators and teachers with the programs, activities, and growth trajectories of such schools is also recommended.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics principles

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

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