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The Conceptual Framework of Research-Based Education in Iran's Higher Education System

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A B S T R A C T

The purpose of the present study was to propose a conceptual framework for research-based education in the context of Iran's higher education system. This study was conducted within the interpretivist paradigm using a qualitative approach and grounded theory methodology. Semi-structured interviews were employed to collect data from 28 higher education experts selected purposefully through strategies such as maximum variation, snowball, and theoretical sampling. Data analysis was performed in three stages: open coding, axial coding, and selective coding. The findings revealed that research-based education is characterized as problem-based, problem-identifying, and problem-generating. From a systemic perspective, the inputs (students, faculty, curriculum) and outputs (learning) are identified as active agents, facilitating educators, communicative curricula, and learning in practical contexts. The formation process of this concept is fostered through the provision of structured opportunities within a framework of discourse, human interactions, and freedom of expression. This type of education is influenced by three categories of factors: educational-research, administrative-support, and moral-cultural elements, shaped by both internal and external organizational contexts. It also emerges under the influence of factors such as academic culture, adherence to educational principles, and psychological characteristics. Key strategies for its implementation include the formulation and clarification of university goals and missions, human resource organization, research-based training, and the attraction, support, and active participation of stakeholders. These strategies yield psychological, social, educational, cultural, and economic outcomes. In conclusion, higher education within Iran's ecosystem requires policies that balance, integrate, and mutually reinforce education and research in a systemic approach. Creative, capable, and socially efficient individuals are developed within an academic culture where education and research function as synchronized wings, propelling the university forward. Achieving this coordination and alignment between education and research necessitates coherence and integration among universities, society, and governance systems.

Keywords: *Research-based education, grounded theory, qualitative research, higher education in Iran*

Introduction

Evidence suggests that higher education in Iran is facing significant challenges in terms of its depth, effectiveness, and relevance. Graduates often lack the necessary knowledge, skills, and attitudes expected by society, a situation influenced by various factors such as credentialism, rapid quantitative growth without attention to quality, the commercialization of education, and the predominance of entrepreneurial motives in university management (Keshavarz Ruodaki et al., 2023; Farasatkhah, 2022; Eghbale et al., 2021). These issues have hindered the development of critical thinking, intellectual growth, and the fostering of inquiry among students, leading to diminished professional, productive, and cultural self-awareness (Andresen, Boud & Cohen, 2020).In this context, a shift toward research-based education (RBE) is proposed. RBE aims to integrate research into the curriculum, enhancing students' understanding of research and improving learning outcomes by promoting critical thinking and problem-solving. This approach bridges the gap between theoretical knowledge and practical application, equipping graduates with both academic expertise and the ability to apply it in real-world scenarios (Syaharuddin et al., 2022; Huet, 2018). Studies from the UK, Northern Europe, Australia, and the US (Blessinger & Carfora, 2014; Wood, 2010; Spronken-Smith & Walker, 2010) have demonstrated RBE's positive impact on student learning. Recent studies by Carl Wieman (Arthurs & Templeton, 2009; Smit et al., 2011) have focused on applying research to problem-solving across various disciplines, emphasizing the importance of "thoughtful action" as a core process for expertise development. In Iran, however, education and research remain separate domains, hindering the synergy that could energize universities (Yamani, 2019; Hasani et al., 2018). A model that integrates research and study, such as the Humboldtian approach, could address this divide. Constructivism and self-regulation provide a theoretical foundation for RBE, encouraging active learning, problem-solving, and self-directed knowledge construction (Almulla, 2023; Biabanagard, 2021). While international studies have explored these concepts, there is a significant gap in research on RBE in Iranian universities, highlighting the need for further investigation. One of the key challenges in Iranian higher education is the misalignment between university outputs and job market needs, resulting in a gap between supply and demand for skilled labor (Rashidi, 2017). The government has recognized this issue, emphasizing the need for universities to become more responsive to societal demands. The adoption of a research-based education model could bridge this gap by improving students' skill development and better aligning their training with the needs of the labor market. This study aims to define "research-based education" within the context of Iranian higher education and propose policy changes that can enhance university responsiveness to market needs.

Methodology

This study was conducted within the interpretivist paradigm using a qualitative approach and grounded theory methodology (following the systematic approach of Strauss and Corbin). In this approach, data collection, analysis, and the development of the final theory are interrelated and occur in a continuous and cohesive process. The researcher does not begin with pre-existing theories, but allows the theory to emerge from the data collected during the study (Strauss & Corbin, 2013).

Given the qualitative nature of this study, sampling and the selection of the study population do not follow the rigid rules of generalizability or fixed laws as seen in quantitative research. The study population consisted of higher education experts with significant experience, relevant publications, or teaching experience in the area of research-driven education. The sampling process was non-probabilistic, utilizing three strategies: maximum variation sampling, snowball sampling, and theoretical sampling (Draucker et al., 2017). In total, 28 higher education experts participated in the study, which continued until theoretical saturation was reached. Theoretical saturation refers to the point at which new data no longer contributes to the development or modification of the existing theory. This concept is recognized as the gold standard in qualitative research (Habibi & Jalalnia, 2022). The data collection tools included semi-structured and unstructured interviews, which were transcribed and analyzed through coding (open, axial, and selective coding).To ensure the trustworthiness of the findings, several techniques were

employed, including the use of memoing, returning results to participants for validation, and consulting with external experts to verify the emergent concept. Multiple data sources, such as interviews, observations, and written materials, were triangulated to enhance the accuracy of the study's conclusions.The primary challenges in this study included the selection of participants and time constraints.

Findings

Through conducting interviews and data coding, 115 open codes and 34 axial codes were identified. These codes were categorized into three main categories: causal conditions, strategies, and outcomes. In the final stage of coding, the core category of the research was determined and presented in the form of a paradigmatic model.

1. The Concept of Research-Based Education in the Ecosystem of Higher Education in Iran:

Research-based education is introduced as a problem-oriented process, emphasizing knowledge production, structured opportunities, human interactions, freedom of expression, and experiential learning. This approach underscores the importance of elevated education and collaboration for global common good.

2. Causal Conditions Affecting the Formation of Research-Based Education:

Causal conditions are grouped into three main sections:

- **Educational-Research Elements**: Changes in curricula, experiential learning, the role of the instructor as a facilitator, students as active agents, and quality management in scholarly knowledge.
- **Administrative-Support Elements**: Horizontal and flat organizational structure, support for faculty and students, meritocracy, and transformational leadership.
- **Ethical-Cultural Elements**: Ethical code of research education, attention to scientific and moral norms, and the enhancement of a culture of free thinking and academic communication.

3. Contextual Conditions Influencing the Process:

- **External Organizational Factors**: The mission of higher education, consensus in decision-making, and the demand-driven nature of education.
- **Internal Organizational Factors**: Characteristics of the curriculum and the professional qualifications of faculty members, both of which significantly impact the learning process.

4. Intervening Conditions:

Environmental factors, such as the prevailing academic culture and the research climate, significantly affect the research-based education process, particularly issues like elitism, academic dishonesty, and monopolization.

5. Strategies for Establishing Research-Based Education:

These strategies include strategic leadership in universities, infrastructure development, support for innovation, budget allocation, performance evaluation, and fostering community and university engagement.

6. Outcomes of Research-Based Education:

Among the most significant psychological and social outcomes of research-based education are identity formation, self-efficacy, systematic thinking, improved quality of life, and the ability to solve complex problems. Additionally, this approach contributes to the professional development of educators and serves the global common good.

Conclusion

In the present study, the conceptual framework of research-based education from the perspective of experts within the higher education ecosystem of Iran has been explored. The results indicated a significant alignment between the experiences of the experts and the existing literature. The experts categorized the causal factors influencing the formation of this concept into three groups: educational-research, administrative-support, and ethical-cultural. Among these, educational-research factors were identified as the most critical elements, confirmed by both domestic and international research.

The contextual factors influencing this phenomenon are divided into two categories: external and internal factors. External factors include the mission and objectives of higher education, consensus for decision-making, demand-driven education, and

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decentralization. Internal factors involve the professional qualifications of faculty members and the characteristics of the curriculum. Studies have shown that research-based education can have a positive impact on student learning and performance.

The study also highlighted structural conditions and intervening factors, such as inquiry, pedagogical principles, and the psychological and cultural characteristics of the university environment. These factors emphasized the continuous interaction between the instructor and the learner as a key element in the development of understanding and knowledge.

Ultimately, the research concluded that to transform the university into a dynamic entity aligned with the goals of education and research, appropriate policies must be formulated to simultaneously strengthen both education and research. Furthermore, given the current state of the higher education ecosystem in Iran, developmental strategies should be designed with consideration for local, national, and global issues to effectively achieve the goals of this type of education.

Proposed Policy Priorities:

1. Development and Implementation of Research-Based Education Programs: The Ministry of Science can collaborate with the regional flagship universities to establish a Council for the Evaluation and Quality Assurance of research-based education programs. Additionally, developing the charter and quality assessment system for these programs could facilitate the improvement of research-based education quality.
2. Encouragement and Support for Faculty Members: The Ministry of Science and Technology should design incentive mechanisms to encourage faculty members to adopt research-based teaching methods. Moreover, offering special incentives in the promotion guidelines for those faculty members who choose research-based teaching approaches could motivate faculty to engage in this educational model.
3. Development of Supportive and Physical Infrastructure: To enhance research-based education, it is essential to create and improve physical infrastructure, such as expanding databases, updating libraries, and developing university laboratories. Additionally, strengthening supportive infrastructures, such as establishing centers for educational development and research hubs, will help achieve these objectives effectively.

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