

Explanation and Design of an Indigenous Model for a Skill-Based University at Urmia University Based on Grounded Theory with the Strauss and Corbin Approach

Tohid. Zahed¹, Hassan. Ghalavandi^{2*}, Ali. Ghorbani³

¹ Ph.D. student, Department of Educational Sciences, Urmia University, Urmia, Iran

² Professor, Department of Educational Sciences, Urmia University, Urmia, Iran

³ Assistant Professor, Department of Business Management, Payame Noor University, Bonab, Iran

* Corresponding author email address: h.ghalavandi@urmia.ac.ir

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ABSTRACT

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Purpose: This research was conducted with the aim of designing a conceptual model for a “skill-based university” tailored to the indigenous context of Iranian higher education.

Methods and Materials: The present study was an applied research project utilizing a qualitative approach based on Grounded Theory (Strauss & Corbin). Participants consisted of 20 faculty members from Urmia University, selected through purposive sampling with disciplinary diversity and managerial experience. Data were collected via semi-structured interviews and analyzed using MAXQDA software through three stages: open, axial, and selective coding. Data validity and trustworthiness were ensured through member checking, peer debriefing, and constant comparison.

Findings: Data analysis resulted in the extraction of 135 basic concepts, 20 axial categories, and 5 comprehensive categories. The “conceptual model of a skill-based university” emerged as the central phenomenon, explained through causal, contextual, intervening, strategic, and consequential relationships. Causal factors included curriculum revision, transformation of pedagogical methods, human resource empowerment, and the redefinition of the faculty’s role. Contextual conditions emphasized institutional policymaking and support, while intervening conditions focused on the redesign of digital infrastructure and the creation of an innovation ecosystem. Strategies were centered on the development of practical training and university-industry interaction, leading to consequences such as the promotion of skill-orientedness, increased employability, and the improvement of higher education quality.

Conclusion: The establishment of a skill-based university requires a comprehensive redesign across the dimensions of curriculum, human resources, policymaking, and infrastructure. The proposed model can serve as an indigenous and strategic framework for higher education policymakers and administrators in the transition from traditional universities to skill-based institutions and the realization of sustainable development.

Keywords: Skill-based University, Grounded Theory, Higher Education, Skill-orientedness, Sustainable Development

1. Introduction

The landscape of higher education has undergone profound and multifaceted transformations in the twenty-first century, primarily driven by the rapid global transition from industrial manufacturing to knowledge-based economies. Global higher education is currently navigating a period of significant transformation and systemic crisis, necessitating structural and pedagogical reforms to meet emerging socioeconomic demands and the shifting paradigms of international academic mobility (Dewit et al., 2025). Central to this contemporary transformation is the widespread realization that traditional academic models, which historically prioritized the massification of abstract, theoretical knowledge, are no longer sufficient on their own to secure national economic prosperity or guarantee individual career success for graduates. Human capital theory provides a foundational economic and psychological lens through which this historical massification of higher education can be critically understood; this theory posits that state and individual investments in education should directly yield enhanced human cognitive capabilities, which in turn drive increased productivity and tangible economic returns within the labor market (Matache, 2023). However, the fundamental assumption that simply increasing quantitative access to higher education automatically translates into a highly capable and adaptable workforce has been critically challenged by recent shifts in industrial requirements.

A persistent, complex, and growing challenge facing modern economies globally is the phenomenon of skill mismatch, which occurs when the specific cognitive, technical, and interpersonal skills acquired by university graduates do not align with the actual, dynamic requirements of the contemporary labor market. The accurate and multidimensional measurement of this skill mismatch is absolutely critical for labor market research, educational planning, and psychological assessments of occupational wellbeing, as it reveals the stark and often frustrating discrepancies between formal academic achievements and actual occupational realities (Bishof, 2024). This severe discrepancy is often rooted in a fundamental, systemic gap between rigid university curricula and the rapidly evolving, agile needs of various modern industries. This is particularly evident in fast-paced fields such as the software and technology sectors, where theoretical academic knowledge frequently lags significantly behind applied industry standards and technological advancements (Dobslaw et al.,

2023). Consequently, graduates frequently enter the highly competitive workforce possessing extensive theoretical frameworks but fundamentally lacking the practical, applied capabilities required to operationalize that knowledge effectively in dynamic and unpredictable organizational contexts.

Addressing this critical gap between academia and industry requires a comprehensive paradigm shift towards prioritizing and actively cultivating graduate employability, a psychological and educational concept that extends far beyond the mere acquisition of an academic degree. Strategic institutional approaches must be developed and rigorously implemented to navigate the complex meanings, subjective psychological interpretations, and objective measurements of employability, focusing intensely on what genuinely matters to employers, society, and the graduates' own professional identity (Bridgstock & Jackson, 2019). Modern employability encompasses a multifaceted array of cognitive and behavioral attributes, highlighting the necessity of transversal skills that empower graduates to adapt resiliently to diverse and evolving professional environments. For example, contemporary frameworks designed for diversifying employability, even at the doctoral level, emphasize the critical importance of transversal skills such as advanced communication, collaborative leadership, and complex, interdisciplinary problem-solving (Roy et al., 2025). Similarly, empirical investigations into the fundamental employability components of university graduates consistently underscore the urgent need for a comprehensive, holistic skill set that effectively bridges the historical divide between abstract academic learning and concrete professional practice (Sharifi et al., 2019).

The transition toward a skill-based, highly applied higher education model is deeply anchored in the well-established psychological principles of experiential learning and social constructivism. Experiential learning theory postulates that genuine learning is inherently a continuous process whereby new knowledge is actively created through the cognitive transformation of direct, lived experience (Kolb, 1984). This framework emphasizes that hands-on engagement, coupled with structured critical reflection, is indispensable for deep cognitive processing and enduring skill acquisition. Complementing this perspective is the socio-cultural theory of cognitive development, which highlights that higher psychological processes and professional learning occur fundamentally through dynamic social interaction and active, mediated engagement within specific, structured cultural contexts (Vygotsky, 1978). Building upon these

theories, contemporary educational models advocate for the systematic, intentional integration of authentic practice-based experiences into higher education curricula, arguing that authentic professional practice is the most effective psychological vehicle for developing true expertise (Billett, 2020).

Furthermore, the successful implementation of skill-based curricula relies heavily on understanding the psychological factors that drive student engagement and deep motivation. Self-determination theory posits that human motivation and psychological wellbeing are optimally fostered when the basic psychological needs for autonomy, competence, and relatedness are satisfied within the learning environment (Ryan & Deci, 2017). In modern higher education, these dynamics are frequently examined within complex, technologically mediated environments. For instance, the active cultivation of a community of inquiry in blended learning settings has been shown to significantly impact student motivation by fulfilling these intrinsic psychological needs (Adam et al., 2025). Furthermore, designing blended learning environments for competency-based education programs requires scientifically grounded consideration of how to initiate and sustain student motivation while they independently navigate complex, self-directed practical tasks (Marcellis et al., 2024).

To practically operationalize these principles, educational institutions must adopt specific, targeted, and competence-oriented strategies. A sustainable transition toward true competence-oriented higher education demands a rigorous definition of successful exit profiles that explicitly detail the exact cognitive skills and practical competencies graduates must possess (Brauer, 2021). The objective, reliable assessment of these targeted competencies is equally critical; standardizing course assessment methodologies ensures that academic evaluations accurately reflect a student's genuine practical capabilities rather than merely assessing transient ability to recall information (Vargas et al., 2025). Innovative strategies such as the incorporation of intensive experiential learning formats, like competitive hackathons, have proven exceptionally effective for rapidly developing crucial soft skills and collaborative problem-solving abilities (Araujo et al., 2025). Additionally, implementing effective internship and apprenticeship models directly within the formal university curriculum provides students with structured, immersive exposure to real-world professional cultures (Alinejad et al., 2022).

Observing diverse international contexts provides empirically grounded insights into the systemic implementation of skill-based models. In Germany, specialized universities of applied sciences are structurally designed to foster close ties with regional industry and promote skill-based curricula; research indicates that graduates from these institutions often experience highly favorable employment outcomes (Schultz et al., 2020). Furthermore, observing educational systems that successfully navigate the complex paradoxes of modern continuous learning—balancing traditional academic standards with skill-oriented innovations—offers evidence-based blueprints for global institutional reform (Ng, 2020). These examples demonstrate that a systemic institutional commitment to applied learning methodologies yields tangible benefits for both individuals and society.

Within the specific context of the Iranian higher education system, the necessity of transitioning from deeply entrenched traditional theoretical paradigms to a dynamic, responsive skill-oriented approach has become increasingly urgent. Recent academic studies have rigorously attempted to systematically identify the core components of functional skill-oriented universities within Iran, highlighting the immediate need for structural and pedagogical transformations (Taghavi et al., 2023). Identifying the granular components of a genuinely skill-based curriculum and proposing a customized, theoretically sound model is recognized as a vital step in bridging the historical gap between Iranian academic outputs and the urgent needs of the national labor market (Malekpour Lapari et al., 2021). Despite these recognitions, there remains a problematic lack of comprehensive, locally adapted, and scientifically validated conceptual frameworks that guide the day-to-day operationalization of complex skills training models within specific public universities (Mohammadi et al., 2024). To ensure that Iranian university graduates are psychologically and technically equipped to navigate a highly dynamic economic landscape, it is imperative to move beyond importing foreign models and instead conceptualize an indigenous, culturally responsive framework that accounts for the unique institutional realities of the local environment.

This research was conducted with the aim of designing a conceptual model for a skill-based university tailored to the indigenous context of Iranian higher education.

2. Methods and Materials

The current research is qualitative in nature and applied-developmental in terms of its purpose, conducted with the aim of designing a conceptual model for a skill-based university at Urmia University. Given the exploratory nature of the subject, the complexity of the skill-based university phenomenon, and the lack of a coherent indigenous theoretical framework in the context of Iranian higher education, grounded theory methodology was employed as the primary methodological framework. This approach was deemed appropriate for achieving a model based on the lived experiences of academic actors due to its direct reliance on field data and the possibility of explaining processes and conceptual relationships. In this research, grounded theory was applied based on the systematic approach of Strauss and Corbin (1998).

Research data were collected through in-depth semi-structured interviews with 20 faculty members of Urmia University. Participants were selected using purposive and theoretical sampling; such that individuals with teaching experience in skill-based courses, a history of managerial or educational policymaking responsibilities, participation in university-industry collaboration projects, and a conceptual familiarity with the skill-oriented approach in higher education were included in the study. The sampling process continued concurrently with data analysis until theoretical saturation was reached; meaning that in the final interviews, no new data or concepts were extracted, and the categories reached a level of repetition and stabilization. The demographic characteristics of the participants are presented in Table 1.

Table 1

Demographic Characteristics of the Interviewees

Row	Gender	Academic Rank	Field of Study
1	Male	Professor	Agriculture
2	Male	Professor	Mechanical Engineering
3	Male	Professor	Electrical Engineering
4	Male	Professor	Public Health
5	Female	Professor	Psychology
6	Male	Professor	Food Technology
7	Male	Professor	Chemistry
8	Male	Professor	Mathematics
9	Male	Professor	Mechanical Engineering
10	Male	Professor	Mechanical Engineering
11	Male	Professor	Physical Education
12	Male	Associate Professor	Economics
13	Male	Associate Professor	Finance
14	Male	Associate Professor	Electrical Engineering
15	Male	Associate Professor	Mechanical Engineering
16	Female	Associate Professor	Geology
17	Female	Assistant Professor	Architecture
18	Female	Assistant Professor	Polymer Engineering
19	Male	Assistant Professor	Electrical Engineering
20	Female	Assistant Professor	Art

The interview guide was designed based on the paradigmatic model of Strauss and Corbin, encompassing the dimensions of the central phenomenon, causal conditions, contextual and intervening conditions, strategies, and consequences related to the formation and realization of a skill-based university. The semi-structured interviews

allowed for guiding the conversation within the framework of the research objectives while simultaneously permitting emergent concepts to be extracted from the data. The list of main interview questions is provided in Table 2. During the interviews, probing and follow-up questions were used to deepen responses and clarify implicit meanings.

Table 2

Research Interview Questions Based on the Strauss and Corbin Paradigmatic Model

Row	Interview Question	Paradigmatic Dimension
1	From your perspective, what is the concept of a “skill-based university,” and how does it differ from traditional universities?	Central Phenomenon
2	In your opinion, what characteristics and components can be enumerated to define a skill-based university?	Central Phenomenon
3	What factors have caused the higher education system to move towards creating or strengthening skill-based universities?	Causal Conditions
4	What needs, problems, or challenges in the academic environment or society have created the necessity to move towards a skill-based university?	Causal Conditions
5	What barriers, limitations, or conditions in the academic environment (such as laws, human resources, organizational culture, or managerial structure) affect the realization of a skill-based university?	Contextual and Intervening Conditions
6	What is the role of faculty members, university administrators, and educational policymakers in forming or strengthening a skill-based university?	Contextual and Intervening Conditions
7	To realize a skill-based university, what actions and policies should be implemented at the level of educational planning, curriculum, and university interaction with industry and society?	Strategies
8	What solutions can help balance theoretical and skill-based education in universities?	Strategies
9	What impact will the realization of a skill-based university have on the quality of education, students’ employability, and the university’s relationship with society?	Consequences
10	What macroeconomic and long-term consequences does the establishment of a skill-based university model entail for the country’s higher education system?	Consequences

Qualitative data analysis was conducted concurrently with data collection, in accordance with the systematic steps of grounded theory. In the open coding stage, the interview transcripts were examined line-by-line, and initial concepts and meaning units were extracted and labeled. In the axial coding stage, the relationships among the codes were analyzed, and categories were organized into causal, contextual, strategic, and consequential dimensions. Ultimately, in the selective coding stage, the main categories were integrated into a unified conceptual structure, and the conceptual model of the skill-based university was extracted. Throughout all stages of analysis, MAXQDA software was utilized for data management, coding, concept retrieval, and examining relationships among categories.

In order to enhance the rigor and trustworthiness of the findings, the current research systematically utilized the four criteria of credibility, dependability, confirmability, and transferability. Continuous engagement with the data, constant comparison of concepts, documentation of analytical decisions, and providing a thick description of the research context and participant characteristics were employed as the primary validation strategies. Furthermore, the use of qualitative analysis software and the transparency of the coding process enabled the precise tracking of the analytical path from raw data to the final conceptual model.

Ethical considerations were observed at all stages of the research. The purpose of the study and how the data would be used were explained to the participants prior to conducting the interviews, participation in the study was entirely voluntary, and the principles of confidentiality of information and data anonymization were fully adhered to.

3. Findings and Results

This research aimed to identify the components, relationships, and mechanisms for the realization of a skill-based university. The analysis of data obtained from the interviews led to the extraction of 135 initial concepts, which were organized into 20 sub-categories through constant comparison and analysis of conceptual relationships. At a higher level of abstraction, these sub-categories were integrated into five main categories that form the key dimensions of the conceptual model of a skill-based university. These categories include curriculum rearrangement, human resource empowerment, strengthening external interactions, redesigning infrastructure and educational technology, and institutional policymaking and support. The identified themes and codes are presented in Table 3.

Table 3

Identified Themes and Codes in the Qualitative Section

Basic Themes	Organizing Themes	Global Themes
Revising syllabi with industry participation, integrating theoretical and practical knowledge, project-based learning, incorporating soft skills into courses, interdisciplinary content design, aligning programs with labor market needs, continuously updating educational content	Revision of Course Content	Curriculum and Education Rearrangement
Problem-based learning, simulation, active teaching, teamwork, gamification, using flipped classroom, blended learning, challenge-based education, experiential learning, changing teaching methods	Changing Teaching Methods	
Portfolio assessment, use of learning logs, peer assessment, performance evaluation, competency-based assessment, electronic portfolio, continuous and process feedback, real scenario-based assessment	Transformation in Assessment Methods	
Allocating at least 40% of training time to workshops and projects, structured internships in industry, situated learning, interactive internship courses, conducting practical interdisciplinary projects, simulating business processes, using case studies	Increasing the Share of Practical Education	
Designing courses based on occupational competencies, integrating theoretical and practical education within real projects, increasing internships and training in real work environments, performance and skill-based evaluation, industry participation in syllabus development	Institutionalization of Skill-Based Education in Universities	
Facilitation, project-based learning, interaction with industry, knowledge updating, mentoring, guiding role in self-directed learning, creating learning networks with industry, designing learning environments, coaching	New Role of the Professor	Human Resource Empowerment
Participatory, active, talented students with digital skills, entrepreneurial and creative, capable of solving real societal problems, possessing critical thinking, possessing communication and collaboration skills, flexible and adaptable to changes	Student Characteristics	
Presence of professors in industrial environments, empowerment courses, educational innovation workshops, international academic exchange programs, continuous evaluation of professors' teaching skills, action research, retraining and re-engineering of skills	Professional Development of Professors	
Teaching soft skills (communication, teamwork, problem-solving), entrepreneurship and occupational literacy development, career guidance and career path counseling, creating targeted internship opportunities, university collaboration with employers to hire graduates	Strengthening Students' Employability and Entrepreneurship	
Designing joint projects, internship courses in real industries, trust-building, concluding research and development (R&D) contracts, creating an industrial alumni network, presence of industry representatives in educational committees, participation in regional innovation hubs	Relationship with Industry	Strengthening External Interactions
Responding to regional needs, participating in solving social problems, interacting with non-governmental organizations (NGOs), student service-oriented projects, teaching social and citizenship skills, local sustainable development, community-based education programs	Relationship with Society	
Concluding joint R&D contracts, presence of industry representatives in educational committees, implementing social service-oriented projects, interacting with NGOs and local institutions, forming an alumni network to link industry and university	Developing University Interactions with Industry and Society	
Equipped workshops, advanced laboratories, flexible workspaces, joint skill workshops with industry, simulation and virtual reality centers, Fab Lab, design and project studios	Physical Infrastructure	Redesigning Infrastructure and Technology
Blended learning platforms, advanced educational technology, learning management system (LMS), AI-based learning, augmented reality/virtual reality (AR/VR) educational infrastructure, interactive online classes	Digital Infrastructure	
Incubators, science and technology parks, accelerators, co-working spaces, university venture capital, student startup programs, linkage with the national innovation ecosystem	Innovation Ecosystem	
Strengthening incubators, science and technology parks, and accelerators, developing smart learning and virtual reality platforms, supporting innovative projects of students and professors, promoting a culture of technological entrepreneurship in the university, joint investment in new educational technologies	Innovation and Technology Development	
Revising university ranking indicators with an emphasis on skills, incentive policies for collaboration with industry, legal support for skill-based education, creating a skill assessment system at the national level, standardizing skill certificates, professional qualification frameworks	Macro Policies	Institutional Policymaking and Support
Reforming faculty promotion criteria based on skill activities, rewarding based on educational innovation, special budget for skill-based plans, creating supportive regulations for industrial professors, granting industrial sabbatical leaves, performance-based reward system	University Policies	
Allocating a specific budget for equipping and developing practical education, joint financing with industry, skill-based scholarships for students, investing in modern educational technologies, endowment funds for innovation, attracting private sector investment in education	Financial Support	
Reforming the evaluation and promotion system of faculty members, developing quality indicators for skill-based education, creating a quality assurance system in the skill education system, monitoring the implementation of practical and applied education, encouraging innovation in teaching methods	Improving the Quality of Skill-Based Education	

The analyses presented in Table 3 indicate that the identified components and themes are not merely a set of isolated actions, but rather form an interconnected and synergistic structure that makes the realization of a skill-based university conditional upon simultaneous transformation across several key dimensions. The findings suggest that this transformation has an institutional nature and is achievable only through the alignment of educational, human, institutional, and technological dimensions. The first dimension is the rearrangement of the curriculum and educational content, which has been highlighted in the data as the starting point for skill-based transformation. The extracted themes demonstrate that the continuation of theoretical, static curricula disconnected from real labor market issues is considered one of the main obstacles to effective skill training. In contrast, moving towards dynamic, problem-oriented curricula designed with industry participation, along with replacing memory-based evaluations with authentic, performance-based, and competency-based assessments, has been proposed as a structural necessity. A faculty member emphasized in this regard: "Our syllabi are highly theoretical and outdated, and they must be revised with the active participation of the industry so that the student is prepared for real issues." This perspective highlights the necessity of redefining the logic of the curriculum from knowledge transmission to the cultivation of professional competencies.

The second dimension is the systematic empowerment of human resources, encompassing both professors and students. Data analysis shows that realizing skill-based education is impossible without redefining the professor's role from a content transmitter to a facilitator, coach, and learning guide. The presence of professors in industrial environments, participation in real projects, and continuous retraining of professional skills are introduced as prerequisites for this transformation. In this regard, one participant described this process as "fresh blood in the university's veins"; a metaphor that clearly illustrates the

vital role of capable human capital in the dynamism of skill orientation. The third dimension is the transformation in educational and technological infrastructure, which is represented in the data not as an optional possibility, but as an institutional requirement. Themes related to flexible learning spaces, advanced laboratories, joint skill workshops with the industry, and the utilization of modern educational technologies indicate that experiential and skill-based learning necessitates an appropriate physical and digital foundation. Within this framework, infrastructure is considered not merely a support for education, but a part of the learning logic.

The fourth dimension is policymaking and institutional frameworks, which play a regulating and directing role for the other dimensions. Data analysis indicates that as long as the evaluation and promotion systems for faculty members remain based on quantitative indicators such as the number of articles, efforts to develop skill-based education will face structural resistance. A professor warns in this regard: "As long as the promotion indicators for professors emphasize the number of articles and not problem-solving for the industry, no change will occur." This statement highlights the necessity of redefining institutional indicators based on social impact, problem-solving, and interaction with industry. Finally, the analyses show that the institutionalization of a skill-oriented culture, as the central core of this transformation, can only be realized through the systematic interaction of all the aforementioned dimensions and within the framework of causal, contextual, and intervening conditions. This culture is formed when educational strategies, institutional policies, infrastructures, and human actors operate within a common and aligned logic. Under such conditions, the university can transform from a merely education-oriented institution into a dynamic, problem-oriented entity responsive to the needs of society and industry. The paradigmatic model derived from these analyses is presented in Table 4.

Table 4

Paradigmatic Model of the Skill-Based University Based on Grounded Theory (Strauss and Corbin Approach)

Causal Conditions	Contextual Conditions	Intervening Conditions	Strategies	Consequences
1- Curriculum and education rearrangement	1- Institutional policymaking and support	1- Redesigning infrastructure and technology	1- Increasing the share of practical education	1- Improving the quality of skill-based education
2- Revision of course content	2- Macro policies	2- Digital infrastructure	2- Strengthening external interactions	2- Innovation and technology development
3- Changing teaching methods	3- University policies	3- Physical infrastructure	3- Relationship with industry	3- Developing university interactions with industry and society
4- Transformation in assessment methods	4- Financial support	4- Innovation ecosystem	4- Relationship with society	4- Strengthening students' employability and entrepreneurship
5- Human resource empowerment				5- Institutionalization of skill-based education in universities
6- New role of the professor				
7- Professional development of professors				
8- Student characteristics				

As observed in Table 4, the proposed paradigmatic model, with a systematic approach, provides an analytical framework for explaining the interrelationships among the fundamental components of a skill-based university. By distinguishing causal, contextual, and intervening conditions, as well as strategies and consequences, this model demonstrates that the realization of skill-based education is the result of the dynamic and simultaneous interaction of these levels, rather than the outcome of an isolated or partial intervention. Within this framework, causal conditions include curriculum rearrangement, revision of educational content, transformation in teaching and assessment methods, and human resource empowerment, which collectively challenge the dominant logic of theoretical and memory-based education and pave the way for a transition to experiential, project-based, and competency-based learning. The analyses indicate that these components do not operate in isolation; rather, in interaction with one another, they form the initial foundation for the skill-based transformation.

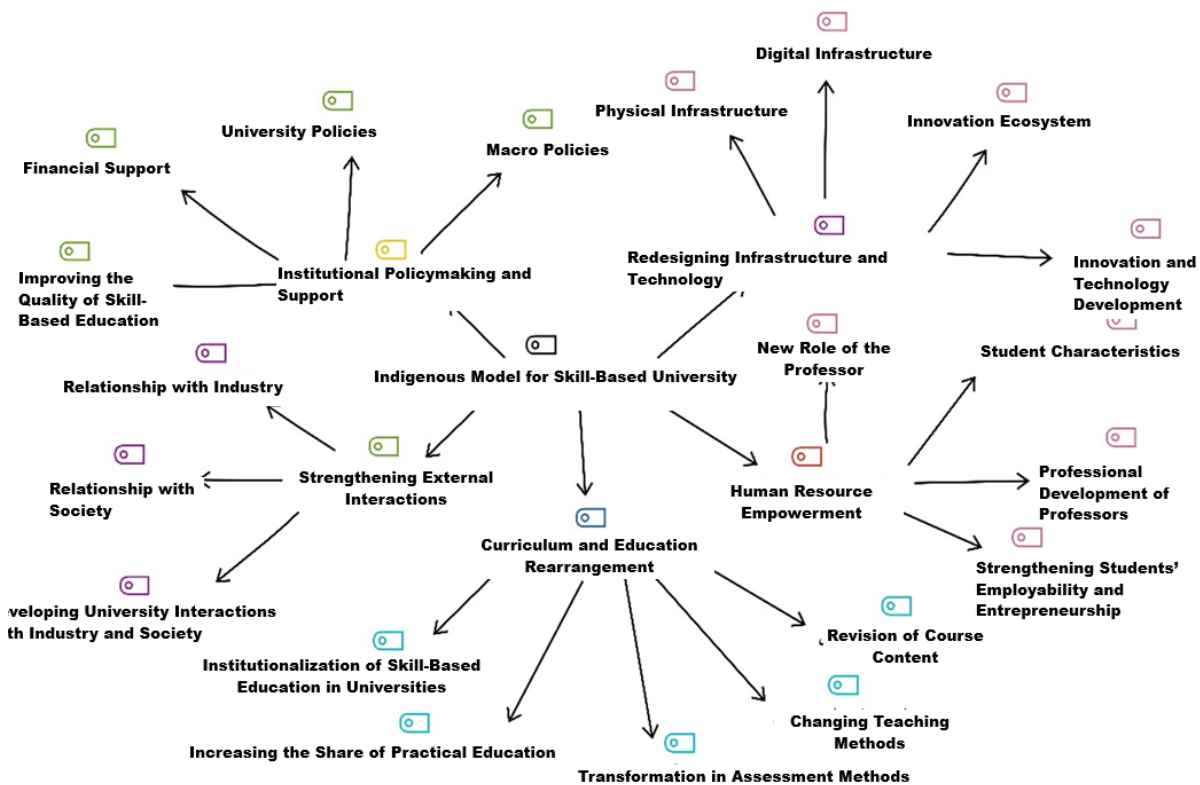
The core phenomenon of the model is the “institutionalization of skill-based education,” around which, as the central core, all components of the model are organized. Contextual conditions, including macro policies, university policies, and financial support mechanisms, play a regulating and directing role in this transformation, while intervening conditions, such as the state of physical and digital infrastructure and the university’s position within the innovation ecosystem, can act as facilitating or inhibiting factors, influencing the intensity and speed of the model’s realization. The key strategies extracted from the data emphasize increasing the share of practical education,

strengthening university interactions with industry and society, and developing experience-based learning. These strategies serve as intermediaries between structural conditions and final consequences, enabling the translation of institutional requirements into executive actions. The consequences of this process can be explained at three levels: at the individual level, the enhancement of students’ professional competencies and skills; at the institutional level, the improvement of the quality and cohesion of skill-based education; and at the macro level, the strengthening of university interactions with industry and society and the increase in employability and entrepreneurship. The interactive and synergistic relationships of these dimensions are depicted in Figure 1 as a multidimensional and integrated structure.

As Figure 1 illustrates, the conceptual model of the skill-based university is the result of the dynamic and simultaneous interaction among a set of structural, human, institutional, and technological components that are linked together in a systematic logic. This figure not only displays the arrangement of the model’s main components but also explains how they synergize in the path toward realizing skill-based education. Within this framework, policymaking and institutional support, as one of the regulatory nodes, impacts the rearrangement of curricula, human resource empowerment, and the strengthening of external interactions, while the redesign of infrastructure and educational technologies plays a facilitating role in realizing operational strategies. At the level of actors, redefining the professor’s role and student characteristics as key human elements establishes the link between institutional requirements and teaching-learning processes.

Figure 1

Interactive and Synergistic Relationships in the Skill-Based University



4. Discussion and Conclusion

The primary objective of this research was to design an indigenous, highly contextualized conceptual model for a skill-based university within the Iranian higher education system, utilizing a Grounded Theory methodology based on the Strauss and Corbin approach. Through rigorous, in-depth interviews with twenty academic faculty members and subsequent multi-stage qualitative data analysis, the study successfully identified 135 fundamental concepts, which were subsequently categorized into 20 sub-categories and 5 main overarching categories. The central, core phenomenon that emerged from this extensive data synthesis was the “institutionalization of skill-based education.” The resulting paradigmatic model delineated the complex interplay between causal conditions, contextual conditions, intervening conditions, specific operational strategies, and ultimate consequences. Crucially, the findings revealed that the successful transformation toward a skill-based paradigm is not a singular event but requires simultaneous, synergistic changes across multiple dimensions: comprehensive curriculum rearrangement, systematic human resource

empowerment, the establishment of robust digital and physical infrastructure, and profound shifts in institutional policy.

The causal conditions identified in our model heavily emphasized the growing disconnect between traditional academic outputs and the urgent realities of the labor market, a finding that strongly aligns with contemporary global analyses of educational crises. As universities worldwide grapple with the rapid transition to knowledge-based economies, traditional massification models rooted in basic human capital theory are increasingly insufficient for ensuring socioeconomic resilience (Matache, 2023). Our participants repeatedly highlighted that the theoretical overload in current curricula directly contributes to a severe skill mismatch upon graduation. This mirrors extensive international research demonstrating that theoretical knowledge, particularly in fast-paced applied sectors, frequently lags behind actual industry needs, resulting in a systemic gap between university preparation and professional execution (Dobslaw et al., 2023). Furthermore, the necessity for a structural paradigm shift identified in our Urmia University context reflects broader, global observations that higher education is currently navigating a



systemic crisis necessitating profound pedagogical reforms to remain relevant (Dewit et al., 2025). The precise measurement and acknowledgment of this skill mismatch, as identified by our faculty participants, is fundamentally critical for initiating these essential educational planning reforms (Bishof, 2024).

To address these causal conditions, the central strategies proposed in our indigenous model heavily revolve around profound “curriculum rearrangement” and “changing teaching methods.” Our findings strongly advocate for moving away from passive transmission toward dynamic, applied learning frameworks. This result is robustly supported by foundational psychological theories, particularly experiential learning theory, which asserts that enduring cognitive development and professional skill acquisition are achieved through the active transformation of direct, lived experience rather than passive reception (Kolb, 1984). By emphasizing practical engagement and collaborative problem-solving, our proposed model inherently adopts a socio-cultural perspective, recognizing that complex professional reasoning is cultivated through active, mediated social interactions within structured environments (Vygotsky, 1978). The contemporary literature confirms that systematically integrating these authentic, practice-based experiences into higher education curricula is the most effective psychological and pedagogical vehicle for developing genuine occupational expertise (Billett, 2020).

Furthermore, our participants emphasized the necessity of defining specific, applied outcomes for graduation, which resonates deeply with the literature on competence-oriented higher education. The successful transition to a skill-based model demands the rigorous establishment of clear, successful exit profiles that detail the exact cognitive and practical competencies required for the modern workforce (Brauer, 2021). In practical terms, our model’s strategic component highlights the integration of immersive, real-world formats. Studies show that embedding intensive experiential learning strategies, such as competitive hackathons, rapidly accelerates the development of critical soft skills and resilience among students (Araujo et al., 2025). Similarly, explicitly designing and mandating effective internship and apprenticeship models directly within the core university curriculum provides the necessary structured exposure to professional cultures that our respondents deemed critically lacking (Alinejad et al., 2022).

Another pivotal dimension of our paradigmatic model is “human resource empowerment” and the conceptualization

of a “new role of the professor.” The findings indicate that in a skill-based university, the faculty member must transition from a traditional lecturer to a facilitator and mentor of applied competencies. This shift requires a deep understanding of the psychological drivers of student engagement. According to self-determination theory, true intrinsic motivation and deep learning occur optimally when the psychological needs for autonomy, competence, and relatedness are fulfilled (Ryan & Deci, 2017). The new role of the professor in our model involves actively cultivating these motivational dynamics, particularly within modern, technologically mediated educational settings. For instance, fostering a strong community of inquiry in blended learning environments has been proven to significantly enhance student motivation by satisfying these intrinsic needs, thereby encouraging deeper commitment to complex skill mastery (Adam et al., 2025). Effectively motivating students in these new, competency-based education programs requires highly intentional instructional design that supports self-directed practical tasks (Marcellis et al., 2024).

The contextual and intervening conditions in our model emphasized the critical need for appropriate “digital infrastructure” and systemic policy alignment. A major challenge identified during the interviews was the inadequacy of traditional evaluation methods to assess applied skills. Our model’s call for infrastructural and policy reform is supported by research emphasizing the absolute necessity of standardizing course assessment methodologies in competency-based higher education, ensuring that evaluations validly and reliably reflect genuine practical capabilities (Vargas et al., 2025). Furthermore, navigating the transition to a skill-based model requires managing inherent institutional complexities and competing priorities. Educational systems that successfully balance rigorous traditional academic standards with flexible, skill-oriented innovations—such as the highly adaptive frameworks observed in Singapore—offer compelling blueprints for managing these institutional paradoxes (Ng, 2020). Systemic institutional commitment to these applied learning methodologies has been shown to yield tangible, measurable benefits, as evidenced by the robust employment outcomes historically observed in specialized universities of applied sciences in Germany (Schultz et al., 2020).

Ultimately, the intended consequence of our indigenous model is the radical enhancement of “graduate employability” and the successful socio-economic integration of students. The results confirm that employability can no longer be viewed merely as job



attainment but must be understood as a multifaceted array of cognitive and behavioral attributes. Strategic institutional approaches must navigate the complex meanings of modern employability, focusing on transversal skills that empower graduates to adapt resiliently (Bridgstock & Jackson, 2019). Our findings underscore the critical importance of these transversal skills—such as complex problem-solving and collaborative leadership—which are essential even at the highest tiers of academic training, including doctoral education (Roy et al., 2025). This aligns perfectly with prior extensive empirical investigations into the fundamental employability components required for university graduates, highlighting the urgent need for a comprehensive skill set that bridges the academic-professional divide (Sharifi et al., 2019).

Crucially, the significance of this study lies in its strict contextualization within the Iranian higher education landscape. While global theories are foundational, our findings corroborate recent local studies that emphasize the immediate need for profound structural and pedagogical transformations tailored to the unique economic realities of Iran (Taghavi et al., 2023). Identifying the precise, granular components of a skill-based curriculum is a vital step toward reconciling academic outputs with the national labor market (Malekpour Lapari et al., 2021). Our conceptual model directly addresses the distinct lack of comprehensive, locally adapted frameworks previously noted in the literature, providing a scientifically grounded pathway for the actual operationalization of skills training within specific Iranian public universities (Mohammadi et al., 2024). By culturally contextualizing these global educational imperatives, the proposed model offers a viable, synergistic blueprint for institutionalizing skill-based education at Urmia University and similar institutions nationwide.

Despite the rigorous methodology employed in this research, several limitations must be acknowledged when interpreting the findings. First, the qualitative nature of the Grounded Theory approach, while providing deep, rich, and highly contextualized insights, inherently relies on the subjective interpretations and personal experiences of the selected participants. The data is heavily dependent on the specific viewpoints of the academic faculty members interviewed, which may be influenced by their individual disciplinary backgrounds and historical teaching paradigms. Second, the sample size, though adequate for reaching theoretical saturation within qualitative parameters, consisted solely of faculty members from Urmia University. Consequently, the specific contextual nuances, institutional

culture, and regional economic factors unique to this single institution may restrict the generalizability of the proposed conceptual model to other universities with vastly different administrative structures or geographical challenges. Finally, the cross-sectional nature of the data collection means that the study captures a specific snapshot in time regarding faculty perceptions; it does not account for the longitudinal, dynamic evolution of institutional policies or the rapidly shifting external economic pressures that continually reshape the definition of necessary labor market skills.

To build upon the foundational conceptual model developed in this study, several avenues for future research are highly recommended. A logical next step is the quantitative validation of the proposed qualitative model. Researchers should develop standardized survey instruments based on the 135 identified concepts and 5 main categories to test the relationships between causal conditions, strategies, and consequences across a much larger, nationally representative sample of Iranian universities. Furthermore, conducting comprehensive, longitudinal tracking studies is essential to evaluate the actual, real-world efficacy of skill-based curriculum interventions. Future research should systematically track cohorts of students transitioning through these newly modeled applied programs to measure their long-term employment rates, career trajectory satisfaction, and overall resilience in the labor market compared to peers in traditional theoretical programs. Additionally, comparative case studies exploring the differential implementation challenges of this skill-based framework across diverse academic disciplines—such as comparing the integration of experiential learning in engineering faculties versus humanities faculties—would provide invaluable insights into how the model must be flexibly adapted to suit distinct epistemological traditions.

The successful institutionalization of a skill-based university requires immediate, coordinated action from higher education administrators, policymakers, and academic departments. It is strongly recommended that university leadership establish dedicated, interdisciplinary curriculum revision committees tasked with systematically auditing existing syllabi and aggressively integrating mandatory, credit-bearing experiential learning modules, such as industry internships and collaborative project-based assessments. Furthermore, universities must invest heavily in comprehensive, ongoing faculty development programs. Because the transition demands a paradigm shift in the role of the professor from a traditional lecturer to a facilitator of

applied competencies, faculty must be provided with targeted training in modern socio-constructivist pedagogies, active learning facilitation, and the effective use of blended learning technologies. Finally, to ensure the curriculum remains agile and strictly aligned with external realities, academic institutions must proactively forge formal, sustained partnerships with regional industry leaders and private sector organizations. These strategic alliances should directly inform the definition of successful graduate exit profiles, provide authentic environments for student apprenticeships, and facilitate a continuous, reciprocal exchange of knowledge between academia and the contemporary workforce.

Authors' Contributions

Authors equally contributed to this article.

Declaration

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

Transparency Statement

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Declaration of Interest

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Ethical Considerations

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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