

An Integrated Framework for Aligning Saudi Higher Education Policies with Future Economy Requirements through Artificial Intelligence Transformation

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Abstract - The fast growth of artificial intelligence (AI) and digital transformations has resulted in some changes and increased expectations for alignment of higher education systems in terms of institutional policies, curriculum structures, assessments, and governance processes to future economic needs. In Saudi Arabia, despite Vision 2030 focusing on development of future-oriented competencies and knowledge capabilities, there are still some difficulties with coherent alignment of educational policies, AI, faculty readiness and sustainable implementation of them. The purpose of this research is to offer an integrated approach to the alignment of Saudi higher education policies to future economy requirements with the help of AI transformation. Explanatory mixed methods design was used that included analysis of policy documents, validated stakeholder survey, and semi-structured interviews. For data collection, 111 higher education stakeholders were involved. IBM SPSS Statistics 30 was used for quantitative data analysis including descriptive statistics, reliability analysis, correlation analysis, t-tests and ANOVA. The results showed that integration difficulties of AI had a very high perception with a mean of 4.63 and relative importance of 92.63%. The biggest challenge identified was difficulty of assessing the efficacy of the AI in delivering learning outcomes (mean = 4.88, 97.66%), followed by deficiency in technology competencies among the students (mean = 4.86, 97.30%). Barriers to integrating the philosophy of education with AI technologies scored an average of 4.85 (97.03%), with redesigning curriculum as the most prominent barrier (mean = 4.95, 98.92%). The proposed pedagogical approaches garnered high agreement with an average of 4.98 (99.62%). Testing for reliability indicated high internal consistency with Cronbach's alpha ranging from 0.894 to 0.952. No significant difference was found on gender, qualifications, academic status, or experience levels. It is concluded that effective use of AI for transforming education will require policy reforms that will combine innovative curriculum design, quality assessment, professional development, and good governance for economic preparedness in the future.

Keywords: Artificial Intelligence Integration, Higher Education Transformation, Educational Policy Alignment, Vision 2030, Curriculum Reform, Future Economy Readiness, Ethical Governance

I. INTRODUCTION

The fast pace of change driven by technology has made education systems important factors behind economic diversification, social mobility, and institutionalization (Bamasoud et al., 2025). The future economy needs flexible competences such as problem-solving, data handling, collaboration skills, and IT skills because of new occupations and changes in labor markets. It is therefore important for the educational policy to guarantee consistency in the areas of curriculum, pedagogy, evaluation, and governance in order to create learning trajectories for all people (Kaya et al., 2023).

Educational transformation has been advanced in Saudi Arabia through Vision 2030, which is focused on skill development, modernity, and employability. Nevertheless, the current challenges have been caused by the mismatch between the curriculum innovations, assessment process, governance, and implementation processes (Aldossari, 2020). There is no clear future vision in policy formulation, which makes it difficult to implement economic priorities in education in an equitable way. This paper tries to fill this gap by providing an integrated vision in the form of a framework that integrates competence development, curriculum outcomes, teacher preparation, assessment, and governance.

Educational systems play a vital role in preparing societies for technological revolution, economic changes, and sustainability challenges (Eli-Chukwu et al., 2023). However, variations in the future skill sets, policy classification, and implementation strategy make it hard to coordinate the reform of the education system according to the economic demands. In Saudi Arabia, the process of future capabilities building requires greater coherence in the designing of curricula, assessment, teachers' training, and governance systems. The purpose of this research is to bridge the gap between the future economic outlooks and present educational policies (Essa & Harvey, 2022).

The proposed study provides a comprehensive framework for policy alignment in Saudi higher education according to future economic demands, considering the AI revolution. It

facilitates the development of educational policy by identifying the challenges of AI, developing the curricula, improving governance, and preparing for future-oriented education.

Research Objectives

1. For assessing the compatibility of educational policies of Saudi Arabia with future economic competencies defined under Vision 2030 with respect to curriculum, evaluation, and skills.
2. For assessing stakeholders' views regarding the significance of educational reforms, pedagogical approaches, and institutional elements in terms of improving the preparedness of the labor market and future-oriented learning.
3. For developing an integrated policy framework for strategic transformation of education in light of good governance, inclusiveness, adaptability, and future economic needs.

This paper is organized into eight sections. Section 1 introduces the research background, problem, objectives, and significance. Section 2 reviews related literature on education reform, AI integration, and future competencies. Section 3 presents the methodology. Section 4 discusses results and statistical findings. Section 5 provides discussion, recommendations, limitations, and future directions, while Section 6 concludes the study.

II. LITERATURE REVIEW

The process of higher education reform has become increasingly related to the strategies for national development, labor force requirements, and technological innovations. In Saudi Arabia, for instance, vision 2030 has focused on the significance of enhancing the quality of education, vocational training, and employability competencies in order to achieve diversification of economy. The change in education policies implies the necessity to improve alignment between institutional processes and future requirements of the labor market (Aldossari, 2020). Coherence of the education system presupposes the necessity of integration of educational standards, evaluation procedures, and pedagogical approaches in order to provide effective learning outcomes and implementation of policies (Atuhurra & Kaffenberger, 2022). The integration of twenty-first-century skills into the educational curriculum has additionally underlined the importance of problem solving, digital competence, collaboration, and adaptability in future-oriented education systems (Herlinawati et al., 2024). Entrepreneurship and innovation-focused education have additionally been viewed as key aspects for the development of graduates who can contribute to the development of knowledge economy (Banha et al., 2022). Recent research also proves that reforms of higher education could improve the entrepreneurship skills of institutions (Eesley et al., 2025).

The impact of artificial intelligence (AI) has become one of the key determinants in shaping the transformation process in higher education, affecting teaching methods, assessment approaches, and academic decision-making. AI-driven formative assessment practices create opportunities for personalized learning and evaluation improvement; yet, there are issues in implementation and reliability of the approaches (Alenezi & Alenezi, 2025). The use of generative AI technologies at Saudi universities has raised the questions of faculty readiness to adopt AI, actual difficulties in using the technology, and the need for support systems at institutions (Almassaad, 2025). Students' acceptance of AI tools depends on their technological literacy, usefulness of the tools, and institutional readiness, suggesting the importance of the proper strategy for adoption (Alshammari et al., 2025). AI implementation in Saudi higher education offers chances to improve learning practices with the help of AI-powered ChatGPT, while raising the issues of ethics and governance (Faisal, 2024). Moreover, international experience in digital transformation of learning highlights that technological adoption calls for readiness, motivation, and organizational support (Aristovnik et al., 2023). Readiness research in online learning emphasizes that such factors as preparedness of teaching staff, self-efficacy, and institutional capacities play important role in success of digital transformation (El-Gazar et al., 2024). Research in the same vein shows that higher educational establishments need systematic actions to enhance their technological readiness and sustainability in the context of education (Eli-Chukwu et al., 2023). E-learning readiness from the point of view of teaching staff confirms the same idea (Fadellelmoula, 2025).

The interconnection between education reform and future economic preparedness also hinges on inclusion, policy, governance, and sustainability of learning. The education reforms carried out in Saudi Arabia have increasingly been centered on inclusion, accessibility, and institutional transformation in order to cater for the needs of diverse learners (Alrudayni, 2025). In terms of policy analysis concerning sustainable education, the importance of aligning the development of education with national priorities is emphasized (Essa & Harvey, 2022). Post-pandemic digital transformation projects have shown the significance of learning that can adapt and sustain during changes (Dos Santos, 2022). The link between online learning, skill development, and job preparedness illustrates the importance of higher education for the adaptation to changing work environment (Kaya et al., 2023). Innovation-led entrepreneurship by university students also relies on an ecosystem of institutions and competency-based approach (Chamroonkul et al., 2025). Business and entrepreneurship education plays a role in shaping the future economic engagement of people through psychological, contextual, and educational means (Ferdousi et al., 2025).

From the literature review, it is found that for the success of any educational transformation process, there needs to be integration among policy, curriculum, AI usage, faculty readiness, assessments, and governance. There are not many

studies on these aspects taken together in Saudi higher education context.

III. METHODOLOGY

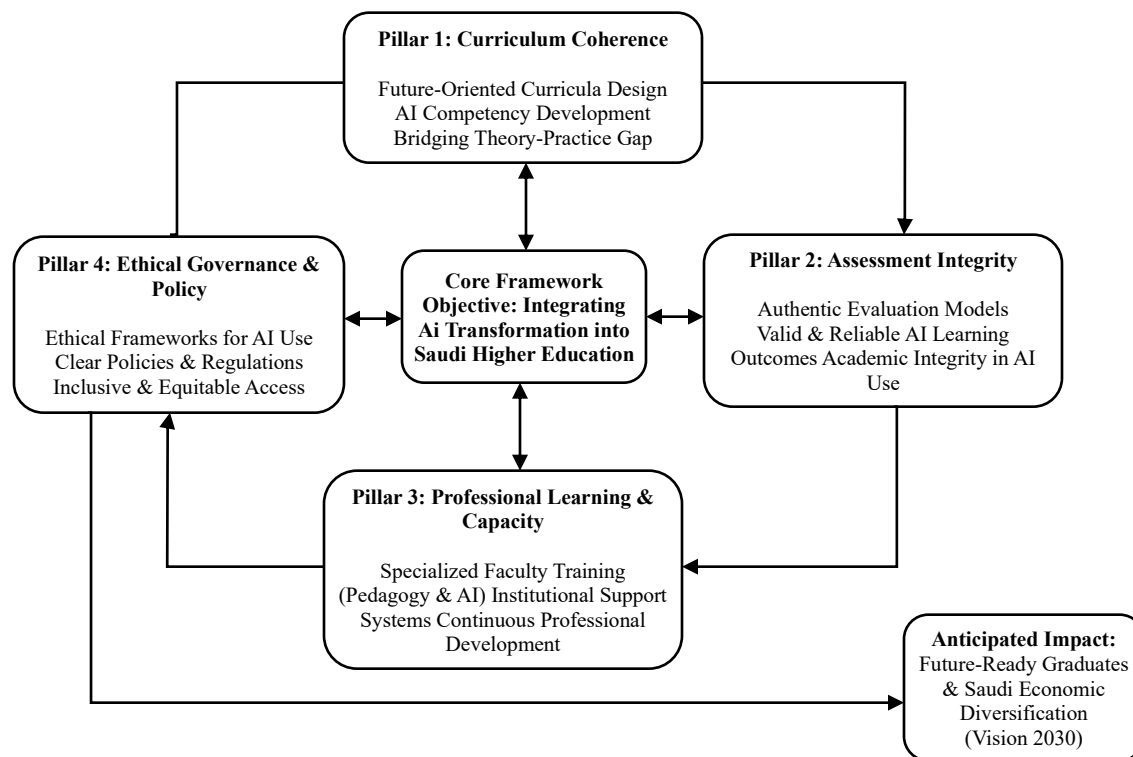


Fig. 1 Conceptual Framework for AI-Driven Transformation of Saudi Higher Education

Fig. 1 below depicts a comprehensive structure for the transformation of Saudi Arabia's higher education system using the use of AI technology. Four main pillars form this structure: curriculum alignment, assessment validity, professional learning, and ethical governance. The four aspects work together within a strategic environment to improve readiness and prepare future skills.

3.1 Research Design and Sampling Strategy

A mixed methods research methodology was used to explore the consistency between education policies in Saudi Arabia and the needs of the future economy through combining the quantitative examination of stakeholders' opinions with qualitative analysis of implementation. A sequential explanatory research design was applied starting from the analysis of policy documents in light of a deductively developed coding frame that was evaluated by experts. The next step included the use of a validated survey to measure the views of 111 education stakeholders who were randomly selected via stratified sampling. Semi-structured interviews were further administered to selected respondents for more profound information collection. Data from the experiment were analyzed using IBM SPSS Statistics 30 software for quantitative analysis involving descriptive statistics, reliability test, correlation analysis, t-test, and ANOVA. The qualitative data from interviews were analyzed using

thematic coding method with the help of manual coding procedure's

3.2 Data Collection

It was conducted using three triangulable resources: (1) a validated set of current official policy files; (2) a Likert-type lesson plan, teaching, assessment, governance, and system-support questionnaire reviewed by 11 experts (90–100% consensus) and piloted on a cohort of 30 participants; and (3) semi-structured interviews on the reasons behind curriculum, assessment, professional learning, governance, and system-support misalignments, restrictions, and priorities of reform, with procedures recorded to facilitate transparency.

3.3 Data Analysis

Descriptive statistics were done using SPSS (v30). Item-domain correlation, Cronbach's alpha, and KMO were used to test validity and reliability, and Kolmogorov-Smirnov to test normality. The associations were investigated through Pearson correlations and regression (simple/multiple). T-tests (gender, qualification) and ANOVA (position, experience) with post-hoc tests as necessary were used to test the differences between groups. Coding of qualitative data was performed thematically, including inter-coder agreement and audit trail, which was followed by combining with

quantitative data. Lacking data were filtered and managed by preset rules.

3.4 Ethics and Intervention

Informed consent was attained, and IRB permission was granted. Involvement was optional and not confidential with limited access to information. There was no experimental intervention, and hence, there were no treatment or control groups.

IV. RESULTS

The results are organized systematically in a quantitative manner starting with instrument validation via expert rating, internal consistency test, and scale validity. Reliability tests involve the use of Cronbach's alpha coefficients for the dimensions and the whole scale. Description of the demographic details of the participants is made considering the educational background and other personal details of the

participants. Findings will be categorized into three main dimensions, which include AI challenges, barriers to the integration of educational philosophy and AI, and suggested pedagogical solutions.

4.1 Calculating the Validity and Reliability of the Used Instruments

Validity and reliability of the research instrument were established by means of expert judgment and a pilot study. Ten experts who specialize in artificial intelligence within the university conducted expert analysis of the items for their relevance, clarity, and language precision, reaching an agreement level from 90 to 100%. Recommendations made by the experts have been taken into account for the improvement of the instrument. In addition, a pilot study was carried out using 30 respondents to check item validity and reliability. The Pearson correlation analysis has been used to test item dimension relations. Table I shows the result.

TABLE I CORRELATION COEFFICIENTS BETWEEN EACH ITEM AND THE TOTAL SCORE OF ITS CORRESPONDING DIMENSION

Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient
1	0.696**	1	0.609**	1	0.661**
2	0.749**	2	0.658**	2	0.660**
3	0.767**	3	0.847**	3	0.752**
4	0.784**	4	0.627**	4	0.462**
5	0.770**	5	0.874**	5	0.862**
6	0.772**	6	0.606**	6	0.786**
7	0.688**	7	0.776**	7	0.747**
8	0.621**	8	0.629**	8	0.460**
9	0.500**	9	0.838**	9	0.874**
10	0.766**	10	0.857**	10	0.675**
11	0.703**	11	0.867**	11	0.844**
12	0.557**	12	0.812**	12	0.965**
13	0.622**	13	0.792**		

Overall Scale Validity and Reliability Estimation

It has been checked by reviewing the statistical reliability of the correlation between each dimension score and the overall scale score, as provided in table II.

TABLE II CORRELATION COEFFICIENTS BETWEEN EACH AXIS AND THE TOTAL SCORE

Item	Axes	Correlation Coefficient
1	Challenges of Artificial Intelligence in the Educational System at Prince Sattam bin Abdulaziz University	0.938**
2	Obstacles Limiting the Integration of Educational Philosophy with Artificial Intelligence Applications in the Academic Environment	0.908**
3	Appropriate Pedagogical Mechanisms to Address Artificial Intelligence Challenges in Light of Educational Philosophical Foundations	0.650**

TABLE III RELIABILITY COEFFICIENTS (CRONBACH'S ALPHA) AND ALPHA COEFFICIENTS WITH ITEM DELETION FOR SCALE AXES

Item	Alpha Coefficient with Item Deletion	Item	Alpha Coefficient with Item Deletion	Item	Alpha Coefficient with Item Deletion
1	.884	1	.905	1	.951
2	.881	2	.908	2	.952
3	.880	3	.896	3	.948
4	.879	4	.916	4	.948
5	.884	5	.895	5	.949
6	.883	6	.906	6	.948
7	.884	7	.898	7	.949
8	.888	8	.916	8	.949
9	.901	9	.895	9	.950
10	.882	10	.895	10	.948
11	.887	11	.895	11	.947
12	.891	12	.897	12	.948
13	.888	13	.898	13	.949
Total Score	0.894	Total Score	0.908	Total Score	0.952

Table III shows the reliability for all dimensions of the research. The Cronbach's alpha coefficients for the first, second, and third dimensions were 0.929, 0.903, and 0.952 respectively. The results show that the reliability is very high

because even by removing any one item, there was no increase in reliability, thus making all dimensions reliable for analysis.

TABLE IV RELIABILITY COEFFICIENTS (CRONBACH'S ALPHA) AND ALPHA COEFFICIENTS

Item	Axes	Cronbach's Alpha Coefficient
1	Challenges of Artificial Intelligence in the Educational System at Prince Sattam bin Abdulaziz University	.894
2	Obstacles Limiting the Integration of Educational Philosophy with Artificial Intelligence Applications in the Academic Environment	.908
3	Appropriate Pedagogical Mechanisms to Address Artificial Intelligence Challenges in Light of Educational Philosophical Foundations	.952
Overall Reliability		0.801

Table IV shows that the overall reliability coefficient of the functional maturity scale was found to be 0.866, and all the Cronbach's alpha coefficients obtained after the removal of items fall within values between 0.785 and 0.851, which is less than the overall alpha coefficient of the questionnaire and thus confirms the presence of strong internal consistency. According to the findings of the analysis of the validity and reliability, all the axes in the questionnaire were found to have validity and reliability scores that were acceptable, and no questionnaire items were dropped.

4.2 Personal Data

Table V provides an overview of the demographic profile of the participants under study. It is clear from the results that there were 111 participants in total, with a higher percentage of male respondents compared to female respondents. In terms of qualification level, most of them had PhD degrees and were employed as professors. When it comes to the experience of participants, most of them had more than 11 years of experience. Most participants were specialists in humanities and social sciences, followed by natural sciences. A large number of participants had undergone AI training.

TABLE V PARTICIPANTS' DISTRIBUTION BASED ON PERSONAL DATA CHARACTERISTICS

Personal Data Variable	Category	Number	%
Gender	Male	61	55
	Female	50	45
	Total	111	100
Scientific Qualification	Master's	6	5.4
	PhD	105	94.6
	Total	111	100
Academic Position	Faculty Member	94	84.7
	Department Head	9	8.1
	Vice Dean	5	4.5
	Dean	3	2.7
	Total	111	100
Years of Academic Experience	Less than 5 years	2	1.8
	5–10 years	9	8.1
	11–15 years	47	42.3
	More than 15 years	53	47.7
	Total	111	100
Academic Specialization	Humanities and Social Sciences	60	54.1
	Natural Sciences	29	26.1
	Engineering and Technology Sciences	11	9.9
	Medical and Health Sciences	11	9.9
	Total	111	100
Participation in AI-Related Training Courses	Yes	91	82
	No	20	18
	Total	111	100
Affiliated College	College of Education	57	51.4
	College of Sciences and Humanities	31	27.9
	College of Business Administration	1	0.9
	College of Engineering	10	9
	College of Applied Medical Sciences	11	9.9
	College of Computer Science and Information Technology	1	0.9
	Total	111	100
Frequency of Using AI Applications in Educational Process and Scientific Research	Daily	72	64.9
	Weekly	35	31.5
	Monthly	2	1.8
	Rarely	2	1.8
	Total	111	100

Source: Collected and calculated from the questionnaire form for the field study sample.

4.3 Challenges of Artificial Intelligence in the Educational System at Prince Sattam bin Abdulaziz University

Table VI provides the prioritization of artificial intelligence problems in the university educational system according to arithmetic means and relative importance. The results show that all the problems mentioned received a very high priority level, with the effectiveness of AI implementation in

obtaining the intended learning outcomes being ranked as the highest priority issue. The other important issues include technology differences among students, reduction of human interaction due to AI reliance, lack of administrative support, cultural influence, ethical issues, and poor infrastructure. The total average shows very high priority level of AI problems.

TABLE VI CHALLENGES OF ARTIFICIAL INTELLIGENCE IN THE EDUCATIONAL SYSTEM AT PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY

Item	Paragraphs	Arithmetic Mean	Relative Importance	Rank	Level	"t" Value	Statistical Significance Level
1	Difficulty employing artificial intelligence in developing interactive teaching methods within the university.	4.77	95.50	6	Very High	29.115	0.000
2	Current curricula lack content helping students handle artificial intelligence applications.	4.66	93.15	9	Very High	20.353	0.000
3	Lack of technological infrastructure in the university supporting artificial intelligence applications in the educational process.	4.71	94.23	7	Very High	26.544	0.000
4	Belief that artificial intelligence threatens the traditional role of faculty members in knowledge transmission to students.	4.67	93.33	8	Very High	26.959	0.000
5	Inadequacy of artificial intelligence applications in enhancing students' critical thinking skills.	4.50	89.91	11	Very High	13.428	0.000
6	Overreliance on artificial intelligence technologies weakens human relationships in the university environment.	4.85	96.94	3	Very High	43.122	0.000
7	Faculty members' weak possession of skills necessary to integrate artificial intelligence applications in the educational process.	4.54	90.81	10	Very High	24.179	0.000
8	Artificial intelligence uses raise ethical concerns related to academic integrity and student evaluation credibility.	4.77	95.50	6	Very High	37.486	0.000
9	Weak university administration encouragement for using artificial intelligence technologies in scientific research and educational activities.	4.82	96.40	4	Very High	9.041	0.000
10	Artificial intelligence negatively affects local cultural identity and educational values.	4.78	95.68	5	Very High	36.722	0.000
11	Artificial intelligence applications' unsuitability for diverse student needs in the university learning environment.	4.39	87.75	12	Very High	16.070	0.000
12	Difficulty evaluating the effectiveness of artificial intelligence applications in achieving learning outcomes.	4.88	97.66	1	Very High	49.767	0.000
13	Using artificial intelligence increases the gap between students with varying technological capabilities.	4.86	97.30	2	Very High	39.677	0.000
Overall Mean		4.63	92.63		Very High	28.889	.006

Source: Collected and calculated from the questionnaire form for the field study sample.

4.4 Barriers Affecting AI Integration in Higher Education

Table VII showed that the barriers impacting the implementation of educational philosophy and AI applications were perceived to be at an extremely high level. The most important barrier among those is the need for

curriculum reform in light of the demands of digitalization and AI, economic constraints, the gap between theory and practice, lack of training, resistance from the faculty, and lack of an integrated strategy of institutions. Some other important barriers are legal issues, ethical issues, and philosophical issues, as well as a lack of cooperation between educators and technical experts.

TABLE VII OBSTACLES LIMITING THE INTEGRATION OF EDUCATIONAL PHILOSOPHY WITH ARTIFICIAL INTELLIGENCE

	Paragraphs	Arithmetic Mean	Relative Importance	Rank	Level	"t" Value	Statistical Significance Level
1	Lack of faculty members' necessary philosophical qualification to address artificial intelligence challenges.	4.89	97.84	5	Very High	54.520	.000
2	University's lack of clear strategies to integrate educational philosophy into artificial intelligence applications.	4.68	93.51	4	Very High	26.101	.000
3	Financial constraints stand as an obstacle to employing artificial intelligence technologies according to educational philosophical foundations.	4.93	98.56	2	Very High	58.146	.000
4	Conflict exists between traditional educational values and requirements for employing artificial intelligence in education.	4.70	94.05	6	Very High	23.303	.000
5	The gap between theory and practice contributes to difficulty in integrating educational philosophy with artificial intelligence applications.	4.92	98.38	3	Very High	56.130	.000
6	Curricula need redesign to align with digital age and artificial intelligence requirements.	4.95	98.92	1	Very High	90.257	.000
7	Absence of regulations and organizing policies causes confusion in employing artificial intelligence according to educational philosophical frameworks.	4.90	98.02	4	Very High	49.633	.000
8	University's excessive focus on technical aspects of artificial intelligence at the expense of philosophical and educational dimensions.	4.58	91.53	7	Very High	21.267	.000
9	Weak communication between educational philosophy specialists and artificial intelligence experts leads to divergence of the two fields.	4.89	97.84	5	Very High	45.945	.000
10	Rarity of specialized training programs combining educational philosophy and artificial intelligence applications.	4.92	98.38	3	Very High	52.567	.000
11	Ethical and legal concerns constitute the greatest obstacles to integrating artificial intelligence with educational philosophy.	4.90	98.02	4	Very High	52.660	.000
12	Absence of a clear philosophical vision contributes to scattering efforts to employ artificial intelligence in the educational system.	4.90	98.02	4	Very High	52.660	.000
13	Resistance to change among some faculty members negatively affects integration of educational philosophy with artificial intelligence.	4.92	98.38	3	Very High	56.130	.000
Overall Mean		4.85	97.03		Very High	56.522	.000

Source: Collected and calculated from the questionnaire form for the field study sample.

4.5 Pedagogical Mechanisms for Addressing AI Challenges

Table VIII shows the instructional strategies suggested to address the problems associated with AI in relation to the philosophical foundations of education. The findings show a very high degree of agreement from the participants in the significance of creating curriculums with AI elements,

philosophical discourse on the impacts of AI, and human interaction in the process of education. The other important strategies are ethics committees, critical thinking, cooperation with experts, contemporary evaluation processes, and comprehensive training. The average score is a reflection of the very high significance of these instructional tools.

TABLE VIII PEDAGOGICAL SOLUTIONS FOR AI INTEGRATION IN EDUCATION

Paragraph	Arithmetic Mean	Relative Importance (%)	Rank	Level	t-value	Sig. Level
1. Developing curricula integrating educational philosophical concepts and AI handling skills.	4.99	99.82	1	Very High	221.000	0.000
2. Opening open philosophical discussions for better understanding of AI impacts on the educational system.	4.99	99.82	1	Very High	221.000	0.000
3. Not relying on AI as a substitute for human interaction in education.	4.99	99.82	1	Very High	221.000	0.000
4. Forming specialized committees of educators and technologists to set ethical frameworks for AI use.	4.99	99.82	1	Very High	221.000	0.000
5. Introducing training programs combining educational philosophy and AI applications.	4.96	99.28	4	Very High	89.680	0.000
6. Adopting modern evaluation models to measure AI outputs' alignment with educational goals.	4.97	99.46	3	Very High	127.605	0.000
7. Addressing AI challenges requires rethinking and updating traditional educational philosophy.	4.96	99.28	4	Very High	110.517	0.000
8. Enhancing students' critical thinking skills for conscious handling of AI applications.	4.98	99.64	2	Very High	156.275	0.000
9. Collaborating with global educational institutions to develop suitable pedagogical mechanisms for AI.	4.98	99.64	2	Very High	156.275	0.000
10. Creating dialogue platforms uniting educational philosophy and technology specialists to face AI challenges.	4.98	99.64	2	Very High	156.275	0.000
11. Developing evaluation systems balancing authenticity and modernity to optimize AI use.	4.98	99.64	2	Very High	156.275	0.000
12. Curricula linking theoretical knowledge and practical AI applications enhance students' ability to face its challenges.	4.98	99.64	2	Very High	156.275	0.000
Overall Mean	4.98	99.62	-	Very High	138.262	0.000

Source: Collected and calculated from the questionnaire forms of the study community sample.

4.6 Testing the Significance of Gender Differences in Artificial Intelligence Challenges

The independent samples t-test was used to determine whether there were significant variations in artificial intelligence problems in the Prince Sattam bin Abdulaziz University educational system based on gender. The

investigation revealed no statistically significant differences between the two gender groups (male and female). The average score for men was 60.95 ($s = 4.92$), while the average for women was 59.30 ($s = 7.36$). These data indicate that the difficulties surrounding artificial intelligence in the educational system are identical for both genders (Table IX).

TABLE IX SIGNIFICANCE OF DIFFERENCES IN AI CHALLENGES BY GENDER

Males		Females		t-value	Statistical Significance
Arithmetic Mean	Std. Deviation	Arithmetic Mean	Std. Deviation		
60.95	4.92	59.30	7.36	1.409	0.162

4.7 Testing the Significance of Differences in Artificial Intelligence Challenges in the Educational System

In order to identify whether there is a difference between the problems with artificial intelligence in the education system at Prince Sattam bin Abdulaziz University based on their academic credentials, the independent sample t-test was applied. There were no significant differences between the participants with the master's degrees and PhDs, according to the results. Participants with master's degrees had an average score of 62.67 ($s = 2.06$), while participants with PhDs had an average score of 60.66 ($s = 6.29$).

4.8 Significance of Differences in AI Challenges by Academic Position

A one-way analysis of variance (ANOVA) was used to compare the obstacles associated with artificial intelligence across academic roles at Prince Sattam bin Abdulaziz University. Individual results showed that department heads had the highest mean challenges ($M = 61.22$, $SD = 4.32$), followed by faculty members ($M = 60.37$, $SD = 6.13$), college vice-deans ($M = 57.60$, $SD = 7.70$), and deans ($M = 56.33$, $SD = 10.26$). Nevertheless, the differences were also not great, implying that there was no significant difference in the degree of AI issues that were experienced in academic jobs fig. 2.

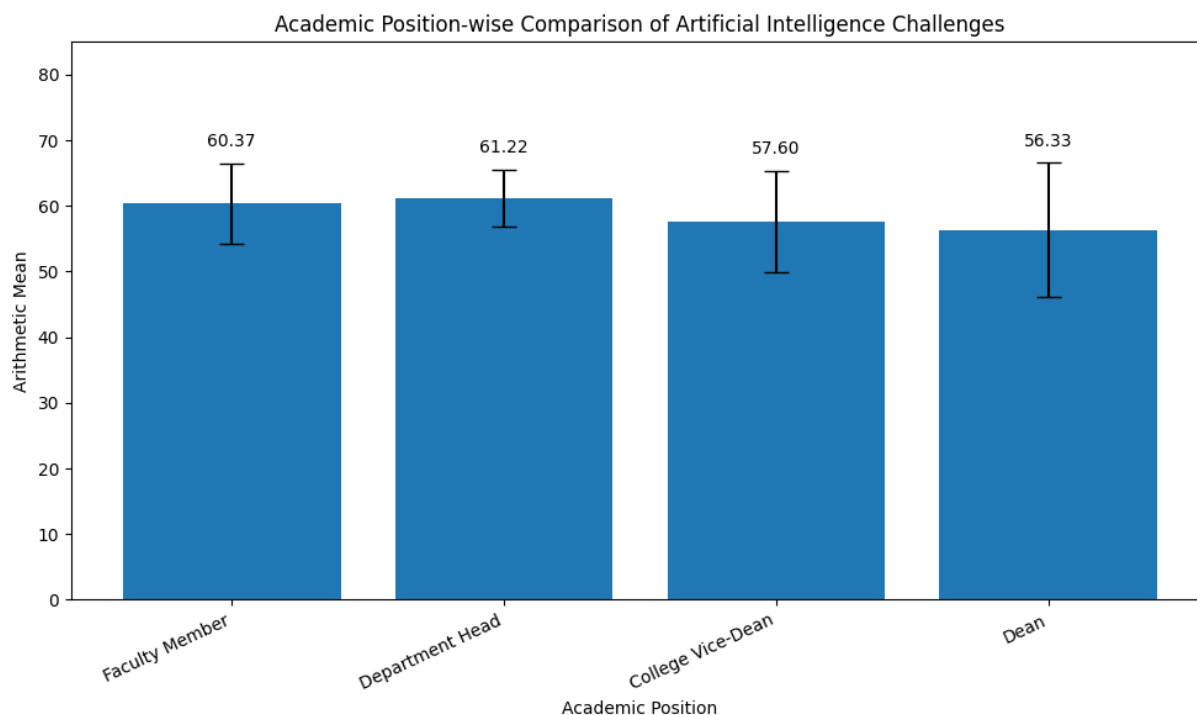


Fig. 2 Academic Position-wise Comparison of Artificial Intelligence Challenges

4.9 Significance of AI Challenges by Academic Experience

The one-way ANOVA was used to determine whether years of academic experience differed in terms of artificial intelligence issues in the Prince Sattam bin Abdulaziz University educational system. These data revealed that the sample with less than 5 years of experience had the highest mean challenges ($M = 65.00$, $SD = 0.01$) as compared to the other individuals with 5-10 years ($M = 61.22$, $SD = 3.19$),

more than 15 years, and 11-15 years ($M = 60.81$ and $SD = 6.58$, respectively). The F-value was 1.137, with a threshold of significance of 0.338, indicating that there were no statistically significant differences between the groups. The data in fig. 3 may indicate that academic experience has no major bearing on the level of artificial intelligence dilemma encountered in universities.

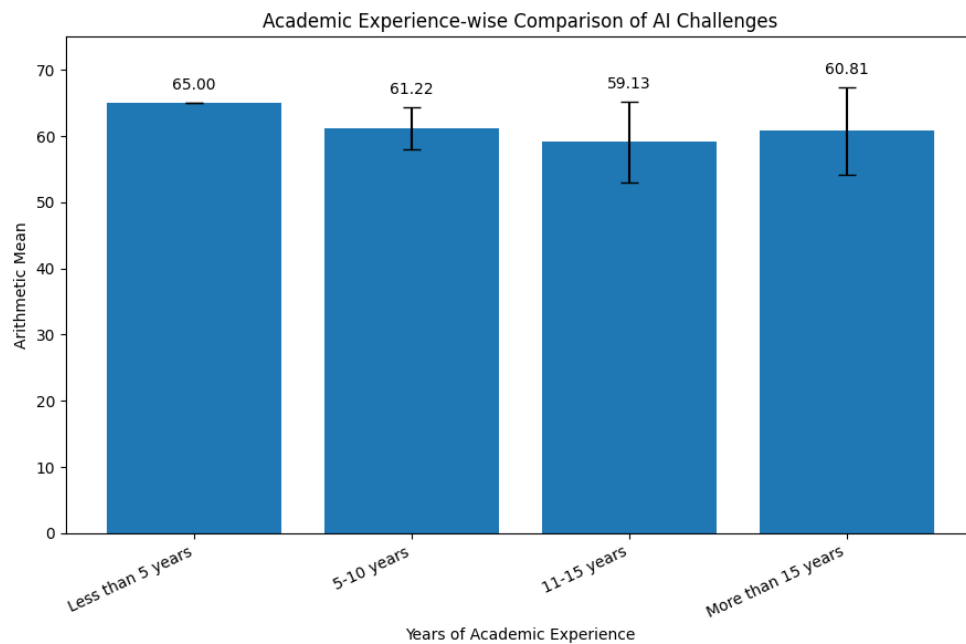


Fig. 3 Academic Experience-wise Comparison of Artificial Intelligence Challenges

V. DISCUSSION

However, it is clear that there are numerous obstacles facing the use of artificial intelligence in higher education in Prince Sattam bin Abdulaziz University. These problems include assessment issues, technological disparities, practice-theory discrepancies, and the preparedness of the staff for change. Nevertheless, the high level of agreement concerning the proposed strategies proves that the institution is ready to introduce measures to overcome these difficulties. The lack of significance when comparing demographic characteristics means that the staff members of the institution encounter similar challenges related to the use of AI in education.

This result is consistent with previous research, which showed the importance of infrastructure development, faculty competency, academic integrity, and ethical aspects in the implementation of artificial intelligence in the learning process. The higher education environment in the Kingdom of Saudi Arabia, especially in terms of Vision 2030 digital transformation of the country, makes the issue even more relevant for further consideration.

Recommendations, Limitations, and Further Directions

This paper proposes developing an integrated policy strategy that will link such areas as curriculum planning, assessments, academic integrity, professional development, and governance in order to foster economic readiness in the future. Nevertheless, due to the cross-sectional methodology, narrow sampling, and focus on perceptions, the study results are not very generalizable, and long-term reform outcomes cannot be assessed. For further research to be conducted, longitudinal and comparative methods need to be utilized in order to evaluate policy effectiveness, organizational change, equitable outcomes, teacher preparedness, and sustainable governance strategies.

VI. CONCLUSION

An integrated framework for aligning the policies in Saudi higher education institutions with future economic needs through transformation in artificial intelligence was introduced in this study. Through policy document analysis, perceptions of stakeholders, and qualitative findings, it was found that effective transformation of education institutions involves not only improvement of curricula, assessment strategies, and professional development, but also governance issues.

Empirical findings show that the stakeholders identified AI-related problems at the highest possible levels, with a mean of 4.63 and a relative importance of 92.63%. The most significant problem was related to the evaluation of the effectiveness of using AI in reaching desired learning outcomes (mean = 4.88, relative importance of 97.66%), whereas technological gaps among the students were second (mean = 4.86, 97.30%). Likewise, barriers associated with integrating educational philosophy with artificial intelligence were given extremely high ranks, scoring a mean of 4.85 and a relative importance of 97.03%. Curriculum redevelopment for addressing digital and artificial intelligence needs was stated as being the highest-ranked barrier (mean = 4.95, 98.92%). This implies that the redevelopment of curriculum and the development of future-oriented competencies are necessary.

The recommended teaching methods were also highly rated by the respondents with a mean of 4.98 and relative importance of 99.62%. This further underscores the need for integrating AI in curricula, ethical governance, faculty development, critical thinking, and interpersonal relations in learning. Reliability of the research instrument indicated internal consistency of 0.894, 0.908, and 0.952 for each of the three research dimensions, respectively. In addition, it was

found that there are no statistically significant differences in AI challenges among genders ($t = 1.409$, $p = 0.162$), academic qualifications, academic positions, or experience levels ($F = 1.137$, $p = 0.338$).

From the above study results, Saudi Arabian higher education institutions are advised to implement an integrated approach towards educational transformation by considering factors such as AI skills acquisition, curricular improvements, innovative methods of assessment, faculty development, and governance policies. For future studies, the use of longitudinal research designs would help determine the impact of AI-powered educational transformations in the long run and also involve sampling from more than one Saudi Arabian university and consider impacts on graduate employment and economic performance.

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