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Predictive Role of Artificial, Moral and Spiritual Intelligence in Academic Achievement among PhD Scholars in Punjab, Pakistan

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ABSTRACT

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Keywords

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This study examined how Artificial Intelligence (AI), Moral Intelligence (MI) and Spiritual Intelligence (SI) predict the academic achievement of PhD scholars. A total of 923 participants were selected through stratified random sampling. This method ensured representation from different universities and academic disciplines. A quantitative research design was used. Data were collected through a structured questionnaire. Academic achievement was measured through the participants' current CGPA. The reliability of the questionnaire was tested using Cronbach's Alpha. Descriptive statistics, Pearson correlation and multiple regression were used for data analysis in SPSS. The results showed that the participants had high levels of AI ($M = 3.75$, $SD = 0.65$), MI ($M = 4.02$, $SD = 0.60$) and SI ($M = 4.11$, $SD = 0.38$). The mean academic achievement was 3.26 ($SD = 0.70$). Pearson correlation showed significant positive relationships among the study variables. Multiple regression results showed that the overall model was significant, $F(3,919) = 34.319$, $P < .001$. The model explained 10.1 % of the variance in academic achievement ($R^2 = .101$). AI, MI and SI were significant positive predictors of academic achievement. The study concludes that developing technological, moral and spiritual abilities together can support academic achievement among PhD scholars. Higher education should encourage the responsible use of AI along with moral and spiritual development.



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1. Introduction

Artificial intelligence also known as computational intelligence refers to the ability of computers and machines to perform tasks that typically require human intelligence such as learning, reasoning, problem solving and making decisions. The idea of intelligent machines has existed for a long time. In the 1950s, Alan Turing suggested that machines might be able to think like humans. Later, John McCarthy introduced the term Artificial Intelligence. Today, AI can learn from information and perform many tasks that were once done only by humans (Moosa et al., 2025).

Since the release of ChatGPT in November 2022, artificial intelligence has become a major topic of discussion in higher education. Its growing use has influenced many aspects of teaching, learning and assessment creating a need for clear and effective institutional policies to guide its responsible use. In addition to discussing these policy needs researchers have explained how generative AI works, tracing its development from early neural networks to recent technological advances and highlighting its applications in education (Chan et al., 2024).

The triology theory of moral intelligence consists of three main components. First, it includes the mental processes involved in making moral decisions. Second, it focuses on the knowledge, values and principles that guide moral behavior. Third, it considers personal traits and environmental factors that influence moral thinking and actions. Together, these components shape how individual make ethical decisions and behave in moral situations (Sternberg et al., 2025).

Morality and intelligence play an important role in shaping human behavior and helping young people function positively in society. Although technological progress provides many opportunities and fulfills different needs, it cannot by itself develop values such as honesty, justice, freedom and responsibility. Today, material success and personal interests are often emphasized more than moral values. Therefore, developing moral intelligence in young people is essential. Moral intelligence helps individuals build strong ethical principles and make decisions that reflect honesty, responsibility and respect for others (Dacka et al., 2024).

Language development and moral development are two important areas of human developmental psychology. Noam Chomsky's Transformational Generative theory explains how individuals acquire language, while Lawrence Kohlberg's Theory of Moral Development describes how moral reasoning development and are based on different assumptions both have made significant contributions to understanding how people develop their communications skills and moral understanding (Adinda et al., 2025).

Moral development is an important part of education because it helps shape their character and behavior. Lawrence Kohlberg's theory explains how children develop moral thinking through different stages. This theory can help parents and teachers understand how children's moral reasoning changes over time. It is useful in education for guiding teaching and support. A critical review of the theory also shows both its strengths and limitations in today's educational settings. Overall, applying moral principles in education helps children grow into responsible and ethical individuals (Hanafiah et al., 2024).

Humans do not only have intellectual and emotional intelligence but also spiritual intelligence, which helps complete human development. Spiritual intelligence is the ability to understand life problems and work towards meaningful goals. It allows a person to see life in a border sense of meaning and purpose. It also includes faith, compassion and a higher level of awareness. These qualities help individuals live in a more positive and helpful way towards others. In this way, spiritual intelligence improves the overall quality of human life (Dariyo et al., 2024).

Academic success refers to how well students achieve their educational goals usually measured through exams and regular assessments. To design effective educational policies and programs, it is important to carefully analyze relevant data. Improving academic performance also requires addressing factors that can negatively affect students, such as poor classroom environments, dysmenorrhea and excessive use of social media. At the same time, positive habits like good sleep, strong exam preparation and avoiding substance abuse should be encouraged (Kassaw et al., 2023).

1.1 Research Objective

1. To determine the predictive influence of Artificial Intelligence, Moral Intelligence and Spiritual Intelligence on academic achievement among PhD scholars in Punjab, Pakistan.

1.2 Research Question

1. To what extent do Artificial Intelligence, Moral Intelligence and Spiritual Intelligence predict academic achievement among PhD scholars in Punjab, Pakistan?

2. Literature Review

Artificial intelligence has become a key force that influences many products and makes daily life easier. Because of this, understanding how artificial intelligence and human intelligence work together is becoming very important. Artificial intelligence offers speed, efficiency and large scale problem solving. In contrast, human intelligence provides creativity, empathy, ethics, morality and curiosity. Both are needed to solve problems in complete and effective way (Srivastava et al., 2026).

Artificial intelligence has become an important part of life in the 21st century. This makes it necessary for students to understand and adapt to these changes (Yim et al., 2025). Artificial intelligence has changed education in many ways. It includes tools such as Generative AI, Chatbots, Intelligent Tutoring Systems and Large Language Module. These technologies support personalized learning through chatbots and tutoring systems. They also help with writing assessment and content generation. In addition, AI is used for prediction and for new teaching methods like project based and game-based learning (Choi et al., 2025).

The academic community is increasingly focusing on the use of Artificial Intelligence in education. Systematic reviews explore how AI is applied in teaching and learning, along with its effectiveness, challenges and broader implications. Tools like ChatGpt have shown strong results in delivering theoretical knowledge, especially in areas such as medical education. At the same time augmented reality and virtual reality are effective for developing practical skills. However, there are still important challenges including data privacy

issues, algorithmic bias and the need to properly train educators to use these technologies (Kokver et al., 2025).

Moral development is a complex issue and many theories have been proposed to explain it. It has important social implications because it influences human behavior, especially during crises such as pandemics, wars or other difficult situations. In forensic science, moral judgment is often assessed to determine whether a person understands their actions when committing a crime and therefore be held responsible for them (Nicoara et al., 2023).

Morality refers to the social rules that guide people's behavior and interaction with others. These social rules become meaningful when individuals accept them as their own moral values through a cognitive process. Moral development consists of three interconnected dimensions, first is moral cognition second is moral emotions and third is moral behavior. Moral cognition refers to an individual's ability to understand ethical principles, distinguish between right and wrong and apply moral values when making decisions. This cognitive aspect plays an important role in guiding ethical judgment and responsible behavior (Dan, 2025).

Piaget studied children's moral development using the paired story method. In this approach, children are given two stories and asked to compare them. Their responses help researchers understand how children think about right and wrong and make moral judgments (Meifang, 2025).

Morality and intelligence are essential in shaping human behavior and enabling young people to become responsible, ethical and productive members of society. Together, they influence how individuals make decisions, interact with others and respond to personal and social challenges. Although technological advancement provides many opportunities and meets various needs, it cannot replace essential and moral values such as honesty, justice, responsibility and respect for others. In today's world mental success and individual interests are often emphasized, while moral values receive less attention. Strengthening these values is important because they guide ethical choices and responsible decision making (Dacka, 2024).

In Islam, spiritual intelligence is closely connected with the purity and sincerity of the heart. A sincere heart encourages individuals to act in ways that benefit both their worldly life and the hereafter. According to the teaching of Prophet Muhammad (PBUH) when the heart is righteous, a person's actions also become righteous but when the heart is corrupt, it negatively affects the whole person. This highlights the central role of spiritual intelligence in guiding ethical behavior and personal development (Rahman & Shah, 2015).

Spiritual intelligence has become an important concept in psychology since the late 1990s. Several researchers have developed theoretical models to explain its dimensions and importance. Higher levels of spiritual intelligence are associated with better mental health, greater resilience, higher life satisfaction and improved professional performance. Individuals with strong spiritual intelligence are better able to cope with challenges maintain emotional wellbeing and make meaningful decisions in both their personal and professional lives (Xabibullaevna, 2026).

Spiritual intelligence has become essential area of research in psychology, education, and organizational behavior. Spiritual intelligence is closely linked to psychological well-being, resilience, emotional intelligence and ethical leadership. Earlier researcher mainly focused on mental health and personal growth, while recent studies have explored its role in leadership, organizational commitment and artificial intelligence (Judijanto, 2025).

Advances in artificial intelligence have transformed many aspects of education and society. However, an excessive focus on technology and cognitive skills may reduce attention to ethical and spiritual values. AI should be developed responsibly by integrating moral and spiritual principles to reduce risks such as job displacement, privacy concerns and the misuse of technology. Promoting ethical, humane and value based AI development is essential (Ilmi & Yulinda, 2025).

Academic performance is an important indicator of the quality of doctoral education. It is influenced by several factors, including student engagement, teacher and parental support, learning resources, stress levels, well-being and concerns about delays in completing doctoral

studies (Wijaya et al., 2023). Education plays a significant role in personal and social development and academic achievement reflects students' learning outcomes. Research suggests that social intelligence and moral intelligence are important factors that contribute to better academic achievement (Nuraini & Uyun, 2023).

3 Gapes in the Existing Literature

Existing literature shows clear gapes in this area. Studies show that Artificial Intelligence helps improving learning and research work (Ahmad et al., 2023). Spiritual Intelligence also supports motivation and academic success (Khan & Iqbal, 2024). However, most research studies these factors separately. Very little work looks at them together. Most studies are also done on undergraduate students, not PhD scholars. In Pakistan, especially Punjab, this area is still under reached. There is also a lack of studies using prediction models to see their combined effect on academic achievement.

4. Research Methodology

This study adopted a quantitative cross sectional research design to investigate the predictive relationship among artificial intelligence, moral intelligence, spiritual intelligence and academic achievement of doctoral scholars. A correlational design was employed because it is appropriate for examining the relationships among variables and determining the extent to which artificial intelligence, moral intelligence and spiritual intelligence predict academic achievement.

The target population of this study consisted of PhD scholars enrolled in public universities across Punjab. The data regarding population were obtained from the official websites including Bahauddin Zakariya University (<https://www.bzu.edu.pk>), Ghazi University (<https://gudgk.edu.pk>), Government College University Faisalabad (<https://gcuf.edu.pk>), University of the Punjab (<https://pu.edu.pk>), The Islamia University of Bahawalpur (<https://iub.edu.pk>), Rawalpindi University (<https://rwu.edu.pk>), University of Sargoda (<https://uos.edu.pk>), University of Gujrat (<https://uog.edu.pk>), University of Sahiwal (<https://uosahiwal.edu.pk>) and Rawalpindi Women University (<https://rwu.edu.pk>). This population was suitable for the study because

these individuals are directly engaged in higher education and research activities (Sekaran & Bougie, 2016).

The sample size was determined using the Raosoft sample size calculator. Because the target population was large, a representative sample was selected using a stratified random sampling technique to ensure adequate representation of doctoral scholars across different strata. Quantitative data were collected through a self-developed questionnaire comprising two sections. The first section gathered demographic information while the second included items designed to measure the study constructs.

Section A gathered demographic information of the respondents including gender, age, mode of study, research phase, experience with AI tools, current CGPA, research publications and use of AI for academic task. Section B focused on artificial, moral and spiritual intelligence as perceived by doctoral level in terms of research productivity, academic performance and scholarly engagement.

All constructs in the questionnaire were self-developed by the researcher with reference to relevant literature. Items were measured on a five-point scale ranging from 1=strongly disagree to 5=strongly agree.

Validation of the research instruments were ensured with the help of expert opinion and pilot testing. The research was utilized Cronbach's alpha to get the results. The overall reliability coefficient was found to be 0.87 indicating a high level of internal consistency among the items. Then, research was compared them to Cronbach's (1951) statement that reliability coefficients above 0.6 are acceptable. Data were collected from doctoral scholars through Google form. Participants were informed about the purpose of the study

5. Data Analysis Results

The collected data were analyzed using SPSS Statistics. Descriptive statistics including frequencies, percentages, means and standard deviations were used to summarize the participants' responses. Pearson's correlation analysis was conducted to examine the relationships among artificial intelligence, moral intelligence, spiritual intelligence and academic achievement. In addition, multiple regression analysis was performed to assess the extent to which artificial intelligence, moral intelligence and spiritual intelligence predict academic achievement among doctoral scholars. Table 1 to Table 6 displays results as well as interpretation.

Table 5.1 *Reliability Analysis of Study Constructs*

Construct	Items	Cronbach's α	Interpretation
Artificial Intelligence	15	.918	Excellent
Moral Intelligence	15	.944	Excellent
Spiritual intelligence	15	.835	Good

Table 5.1 presents the internal consistency of the research instrument was evaluated using Cronbach's alpha coefficient. All Cronbach's alpha coefficient exceeded the recommended

threshold of 0.70, the instrument was considered reliable for measuring the respective constructs and suitable for further statistical analysis.

Table 5.1 *Descriptive Statistics of the Study Variables*

Variables	N	Minimum	Maximum	Mean	SD
Artificial Intelligence	923	1.00	5.00	3.75	0.65
Moral Intelligence	923	1.00	5.00	4.02	.60
Spiritual intelligence	923	2.13	4.80	4.11	.38
Academic Achievement (CGPA)	923	2.00	4.00	3.26	.70

Table 5.2 presents the descriptive statistics of the study variables. The findings indicate that doctoral scholars reported a relatively high level of artificial intelligence ($M=3.75$, $SD=0.65$), a high level of moral intelligence ($M=4.02$, $SD=0.60$) and the highest mean score for spiritual

intelligence ($M=4.11$, $SD=0.38$). The mean academic achievement (CGPA) was 3.26 ($SD=0.70$) indicating generally satisfactory academic performance among the participant's responses were reasonably consistent across the study variables.

Table 5.2 Pearson Correlation Matrix

Variables	AI	MI	SI	AA
Total Artificial Intelligence (AI)	1			
Sig. (2-tailed)				
Total Moral Intelligence (MI)	.623**	1		
Sig. (2-tailed)	.000			
Total Spiritual intelligence (SP)	.541**	.736**	1	
Sig. (2-tailed)	.000	.000		
Academic Achievement (AA)	.262**	.294**	.270**	1
Sig. (2-tailed)	.000	.000	.000	

**Correlation is significant at the 0.01 level (2-tailed).

Table 5.3 presents the Pearson correlation analysis was conducted to examine the relationship among artificial intelligence, moral intelligence, spiritual intelligence and academic achievement. The results revealed that all variables were positively and significantly correlated at the 0.01 level ($p<.001$). Artificial intelligence showed a moderate positive correlation with moral intelligence ($r=.623$) and spiritual intelligence ($r=.541$) and a weak positive correlation with

academic achievement ($r=.262$). Moral intelligence demonstrated a strong positive correlation with spiritual intelligence ($r=.736$) and a weak positive correlation with academic achievement ($r=.294$). Similarly, spiritual intelligence was weakly and positively with academic achievement ($r=.270$). These findings show that higher level of artificial, moral and spiritual intelligence are associated with better academic achievement among doctoral scholars.

Table 5.3 Model Summary of Multiple Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.317 ^a	.101	.098	.6688

The table 4 presents the summary of the Multiple Regression Model. The results show a positive

relationship between the predictor variables and academic achievement ($R=.317$).

Table 5.4 ANOVA Results for Multiple Regression Analysis Predicting Academic Achievement

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	46.058	3	15.353	34.319	.000 ^b
Residual	411.110	919	.447		
Total	457.168	922			

Table 5.5 presents the ANOVA results of the Multiple Regression Model. The findings indicate

the overall regression model was statistically significant, $F(3,919) = 34.319$, $P<.001$. This

result demonstrates that artificial intelligence, moral intelligence and spiritual intelligence collectively have a significant effect on academic

achievement (CGPA). Therefore, the regression model is appropriate for predicting academic achievement among doctoral scholars.

Table 5. 5 Regression Coefficients for Predicting Academic Achievements

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t. value	Sig.
(Constant)	1.325	.247		5.373	.000
AITotal	.127	.044	.116	2.866	.004
MITOTAL	.175	.059	.150	2.981	.003
SIT	.182	.088	.097	2.077	.038

Table 5.6 presents the regression coefficients for the predictor variables. The results indicate that artificial intelligence ($\beta = .116$, $p = .004$), moral intelligence ($\beta = .150$, $p = .003$) and spiritual intelligence ($\beta = .097$, $p = .038$) were all significant positive predictors of current CGPA. Among the three predictors, moral intelligence showed the strongest predictive effect followed by artificial intelligence and spiritual intelligence.

6. Discussion

The finding of this study revealed that artificial intelligence, moral intelligence and spiritual intelligence were significant positive predictors of academic achievement among doctoral scholars. Moral intelligence emerged as the strongest predictor, suggesting that moral values and responsible behavior play an important role in enhancing students' academic success.

Artificial intelligence also contributed positively indicating that the effective and responsible use of AI technologies can support learning, research productivity and academic performance. These findings are consistent with recent evidence highlighting that AI literacy and ethical AI practices promote self-regulated learning and problem solving in higher education (Bećirović et al., 2026).

Furthermore, the positive association between spiritual intelligence and academic achievement supports previous research demonstrating that students with higher levels of spiritual intelligence

tend to achieve better academic outcomes because of greater resilience, self-awareness and purpose in learning (Zhou et al., 2024; Bahrami et al., 2026). The findings also reinforce the growing view that technological competence should be complemented by moral responsibility and ethical decision making to ensure sustainable educational development and responsible use of artificial intelligence in higher education (Mensah et al., 2026).

7. Conclusion and Recommendations

This study concludes that artificial intelligence, moral intelligence and spiritual intelligence significantly contribute to the academic achievement of doctoral scholars in Pakistan. Among the three predictors, moral intelligence demonstrated the strongest influence. The findings highlight the importance of integrating technological competence with moral and spiritual development to promote holistic learning and sustainable academic success in higher education.

Higher education institutions should promote the responsible use of artificial intelligence while strengthening moral and spiritual intelligence through ethics education and value based learning. Universities should develop policies that encourage the ethical integration of AI in teaching and research. Future studies should examine additional factors influencing academic comprehensive understanding of students' academic success.

Conflict of Interest

The authors showed no conflict of interest.

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References

- Adinda, A. S., Latipah, E., Solikhatun, D., & Rohman, B. Z. (2025). A Theoretical Review of Language and Moral Development According to Chomsky and Kohlberg. *Linguanusa: Social Humanities, Education and Linguistic*, 3(1), 69-80.
- Ahmad, S., Ali, M., & Hussain, R. (2023). Artificial intelligence and its impact on academic performance in higher education. *Journal of Educational Technology*, 15(2), 45–58.
- Bahauddin Zakariya University. (2024). *Official website*. <https://bzu.edu.pk>
- Bećirović, S., Augustín, M., Mattoš, B., & Dančo, J. (2026). Uncovering structural relationships between AI literacy, AI ethics, AI problem-solving, and self-regulated learning. *Discover Computing*, 29(1), 152.
- Chan, C. K. Y., & Colloton, T. (2024). *Generative AI in higher education: The ChatGPT effect*. Routledge.
- Choi, W. C., Choi, I. C., & Chang, C. I. (2025). The impact of artificial intelligence on education: the applications, advantages, challenges and researchers' perspective.
- Dacka, M. (2024). Moral intelligence–theory and application in education. *Seminare. Poszukiwania Naukowe*, 45(2), 37-51.
- Dan, L. (2025). Moral development. In *The ECPH Encyclopedia of Psychology* (pp. 946-947). Singapore: Springer Nature Singapore.
- Dariyo, A. (2024). Psychological foundations of spiritual intelligence. *International Journal of Application on Social Science and Humanities*, 2(3), 134-140.
- Ghazi University. (2024). *Official website*. <https://gudgk.edu.pk>
- Hanafiah, M. (2024). Perkembangan Moral Anak Dalam Perspektif Pendidikan:(Kajian Teori Lawrence Kohlberg). *Ameena Journal*, 2(1), 75-91.
- Ilmi, Z. U., & Yulinda, S. (2025). Integration of Artificial Intelligence (Ai) in Learning of Creed and Morals for The Development of Chatbots Based on Aswaja Values to Improve Students'spiritual Competence. *Mereunoe: Education Journal*, 1(1), 48-57.
- Judijanto, L. (2025). Bibliometric Review of Spiritual Intelligence: Trends and Applications in Education and Personal Growth. *The Eastasouth Journal of Learning and Educations*, 3(01), 9-20.
- Kassaw, C., & Demareva, V. (2023). Determinants of academic achievement among higher education student found in low resource setting, A systematic review. *Plos one*, 18(11), e0294585.
- Kökver, Y., Pektaş, H. M., & Çelik, H. (2025). Artificial intelligence applications in education: Natural language processing in detecting misconceptions. *Education and Information Technologies*, 30(3), 3035-3066.
- Khan, A., & Iqbal, N. (2024). Spiritual intelligence and academic success among university students. *International Journal of Education and Development*, 18(1), 22–35.
- Meifang, W. (2025). Kohlberg's Moral Development Theory. In *The ECPH Encyclopedia of Psychology* (pp. 791-792). Singapore: Springer Nature Singapore.
- Moosa, I. A. (2025). Artificial intelligence: definition, origin and evolution. In *The Economics of Artificial Intelligence* (pp. 1-17). Edward Elgar Publishing.
- Nicoara, N. D., Mohan, G. A., Gyorgy, M. D., Varga, D. M., Andreescu, G., Popa, N. A., & Izza, Y. P., Rohmawati, U., Azmi, A. R., & Fauzi, M. S. M. (2024). Development of Children's Moral Intelligence According to al-Ghozali. *Al-Hayat: Journal of Islamic Education*, 8(2), 572-584.

- Nuraini, D. A., & Uyun, M. (2023). Investigating between social intelligence and moral intelligence to academic achievement in psychology students. *Psychosophia: Journal of Psychology, Religion, and Humanity*, 5(1), 24-33.
- Rahman, Z. A., & Shah, I. M. (2015). Measuring Islamic spiritual intelligence. *Procedia Economics and Finance*, 31, 134-139.
- Rawalpindi Women University. (2024). *Official website*. <https://rwu.edu.pk>
- Srivastava, A., Garg, A., & Mishra, A. (2026). Foundations of AI: Understanding Key Concepts and Terminology. In *AI Meets Strategy: A Product Manager's Guide to Leading Innovation* (pp. 37-68). Berkeley, CA: Apress.
- Sternberg, R. J. (2025). A trilogy theory of moral intelligence. *Review of General Psychology*, 29(4), 407-425.
- The Islamia University of Bahawalpur. (2024). *Official website*. <https://iub.edu.pk>
- University of Gujrat. (2024). *Official website*. <https://uog.edu.pk>
- University of Sahiwal. (2024). *Official website*. <http://uosahiwal.edu.pk>
- University of Sargodha. (2024). *Official website*. <https://uos.edu.pk>
- University of the Punjab. (2024). *Official website*. <https://pu.edu.pk>
- University of the Punjab, Gujranwala Campus. (2024). *Official website*. <https://pugc.edu.pk>
- Wijaya, T. T., Yu, B., Xu, F., Yuan, Z., & Mailizar, M. (2023). Analysis of factors affecting academic performance of mathematics education doctoral students: A structural equation modeling approach. *International Journal of Environmental Research and Public Health*, 20(5), 4518.
- Xabibullaevna, M. C. (2026). Modern Socio-Psychological Approaches to the Study of Spiritual Intelligence: Systematic-Structural and Axiological Analysis. *Stanford Database Library of American Journal of Social Sciences and Humanity Research*, 6(2), 10-15.
- Yim, I. H. Y., & Su, J. (2025). Artificial intelligence literacy education in primary schools: a review. *International Journal of Technology and Design Education*, 35(5), 2175-2204.