Pak. j. life soc. Sci. (2023), 21(2): 590-603 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences

www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2023-21.2.003

RESEARCH ARTICLE

Development of Innovative Activities of Future Design Specialists Based on Student-Centred Learning

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ARTICLE INFO

Received: Jul 9, 2023

Accepted: Sep 17, 2023

Keywords

Future design specialists
Student-centered learning
Student-centered teaching
Students' engagement
Students' performance

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ABSTRACT

The study explored the association between student-centred teachings and innovative skill development in art design students. Furthermore, the role of students' engagement and students' performance was assessed using a student-centred approach and students' innovative skills. Furthermore, the importance of the student-centred approach among art and design students in the sixth, seventh, and eighth semesters was assessed. In total, 365 students were included in the study: 115 from the sixth semester, 120 from the seventh semester, and 130 from the eighth semester from Abai Kazakh National Pedagogical University, Institute of Arts, Culture, and Sports. The data collection was performed at three different periods using a time-lag approach. Furthermore, it was found that students' creative skills are positively associated with student-centred teaching methodologies. Whereas students' level of engagement is directly linked with the student-centred approach, and students' engagement is directly associated with students' innovative skills. Similarly, students' performance is positively associated with the student-centred approach and innovative skills. The study highlighted the importance of student-centred teaching methodologies in developing students' performance and engagement. Lastly, students' innovative skills in art and design can be developed using a research model by focusing on the teaching methodologies, students' engagement, and the need for innovative skills for future design specialists.

INTRODUCTION

Over the past decade, there has been a growing focus on research about university teaching across Kazakhstan. Moreover, only a limited number of studies have been undertaken in this area. Studies in nations like Australia (Palmer et al., 2015) and the United States (Langen and Dekkers, 2005) show how this type of research is more prevalent globally. Nonetheless, the transition to university remains a significant subject of discussion within the art and design education research community. Despite extensive research and numerous efforts to address and alleviate these challenges, such as introducing bridging courses and support centres, persistent issues have been noted (Zhang et al., 2022). These highlighted difficulties are significant in diverse

classrooms, a crucial consideration in educational planning.

An integral trend within higher education involves adopting a student-centred approach, which is significant in nurturing the competencies and personal attributes vital for prospective success (Hoidn, 2016). The philosophy of student-centeredness, a contemporary paradigm of educational endeavours, necessitates a fresh interpretation and valuation of guiding principles that should dominate present-day higher education institutions (Hewawasam, 2020). This also requires transforming from the prevailing educational paradigm to a student-centric model that revolves around students, considering their distinct academic requisites, prior experiences, and envisioned career trajectories. Consequently, implementing the principles of student-centeredness is an imperative prerequisite for ensuring the quality of education that equips competitive professionals with the capacity for self-development and personal realization in their professional and personal lives (Wang, 2000).

The discourse on integrating the concept of student-centeredness into the educational milieu of higher education institutions has gained considerable traction within the academic community. Examining the philosophical facet of this issue through the lens of human-centeredness is elucidated in the scholarly contributions (e.g., Brenya, 2021; Greere, 2023; Hung et al., 2015). Contemporary scholarly inquiries delve into various aspects, from the nuances of implementing the student-centred approach within the framework of quality management for grooming future specialists to dissect the student-centred educational environment and its resources in higher education institutions (Casselman et al., 2019). Moreover, there is an exploration of how student-centrism contributes to enhancing the quality of educational services (Evans et al., 2019), organizational strategies for the educational process based on partnership and respect, fostering subject-subject dynamics between educators and learners (Daria, 2023), characterization of methods for student-centred teaching and learning (Wulf, 2019), and an analytical study of student-centeredness as a hallmark of contemporary university education, including the factors determining its practical implementation (Spivey, 2020). Concomitantly, it is imperative to devote further attention to integrating the student-centred approach into self-directed education, designing a student-centric educational environment as an essential prerequisite for ensuring the quality of professional preparation for higher education aspirants.

Addressing the impending global challenges and recognizing the imperative to nurture individuals capable of driving change, as highlighted during the World Conference on Higher Education 2009, universities have assumed the role of educating emerging professionals and have placed increasing emphasis on cultivating proficiencies that can tackle the looming issues of the future. Universities are expected to assist students in acquiring competencies that empower them to contribute responsibly to society. However, this evolving relationship between universities and society necessitates a paradigm shift in teaching methods. This shift entails moving away from the traditional, specialized, and disciplinary study of specific subject areas within degree programs to approaches that transcend disciplines and foster collaboration across fields. The effectiveness of these approaches lies in their willingness to incorporate perspectives from various disciplines and non-academic knowledge providers. A previous research pointed out that interdisciplinary research outcomes result from collaborative efforts involving individuals with diverse disciplinary expertise who integrate their insights. These authors also underscore the significance of transdisciplinarity, which incorporates insights from experts relevant to the research domain. The concept of student engagement is multifaceted and goes beyond a straightforward definition. Initially, student engagement primarily revolved around the actions students took to improve their learning experience, encompassing factors such as the time and effort invested in their studies, resource utilization, study goals, and their understanding of the learning process. However, broader and more intricate interpretations of student engagement have emerged more recently. These encompass elements like a sense of belonging, motivation, and the establishment of a supportive learning community. Additionally, institutions and educators play a pivotal role in shaping the learning environment, directly

influencing how students engage with their studies.

Student engagement has gained significant attention from governments and institutions of further and higher education. It is a key indicator of high-quality teaching as it promotes active student participation in various academic disciplines. Consequently, a recognized positive correlation exists between student engagement and academic outcomes, including student retention, progression, and graduation. Notably, some governments, such as Kazakhstan and Turkey, tie a portion of institutional funding to completion rates, making it imperative for educational institutions to explore methods to enhance student engagement. Furthermore, there has been a shift in the educational paradigm from a teacher-centered approach to a student-centered one, emphasizing the value of intra-institutional research into teaching and engagement. This article thus addresses the following question: What are the key factors that boost the innovative skills of the students in the art and design department? Does a student-centred approach to teaching develop innovative skills in the students? Does the students' success and performance are linked with the student's creative skills? Abai Kazakh National Pedagogical University has undertaken a series of projects, each designed to enrich the student experience, boost engagement, and improve academic performance. This article contextualizes these projects within the existing body of literature on student engagement and quality teaching for art and design students. It also summarizes key findings from these projects and discusses their relevance in the context of the broader academic literature. The article concludes by presenting implications that can be drawn from these findings for Abai Kazakh National Pedagogical University.

LITERATURE REVIEW

Hypothesis development

This shift in pedagogical approaches necessitates the adoption of novel teaching strategies. According to constructive alignment, specific desired learning outcomes require support from teaching and learning activities designed to achieve these outcomes (Biggs and Tang, 2011). While traditional teaching methods such as direct instruction facilitate students' acquisition of factual knowledge, cultivating higher-order learning outcomes like problem-solving skills is essential for preparing graduates to address real-world challenges. This entails exposing students to practical problems relevant to their professional future and engaging them in activities like questioning, explaining, reflecting, and creative development. Fostering learning outcomes that extend beyond mere rote learning and aim to transform students' cognitive, emotional, and motivational aspects requires a comprehensive approach to teaching. Such outcomes necessitate a shift in thinking, critical inquiry, and reconsideration for educators and students. To achieve these outcomes, instructional processes centred on authentic contexts, often drawn from scientific or applied professional realms, offer value. Ideally, students collaborate within small interdisciplinary teams, enabling them to attain the learning goals mentioned above goals. Furthermore, these approaches can foster personal and interpersonal skills relevant beyond the university setting. Notably, teaching strategies that prioritize student-centred learning, encouraging students to confront sustainable development challenges, prove particularly effective in this regard.

The significance of adopting a student-centred approach is delineated within the European Union's Higher Education Agenda (as stated in the Paris Communiqué of 2018) and the Standards and Guidelines for Quality Assurance in the European Higher Education Area (from 2015). These strategic documents underscore the imperative of integrating students into decision-making processes regarding the administration of contemporary higher education institutions. This involvement is particularly emphasized to enhance the educational processes, establish a progressive learning environment, and formulate protocols for appraising and overseeing the quality of higher education. Enacting the concept of student-centeredness amplifies the avenues available to higher education students for selecting educational programs, sculpting individualized learning paths, offering accessible and high-quality educational resources, and furnishing student support. Additionally, it sets the stage for cultivating competencies requisite for a fruitful life journey.

Despite enduring criticism and attempts to phase it out in favour of more effective methods and procedures, traditional lecturing has maintained its position as the prevailing form of academic instruction. Numerous higher education institutions have tried to experiment with changing their teaching methodologies, and there has been a lot of research in this area.

H1: The student-centred approach is positively associated with the innovative design of students' skills.

Recently, a growing concern about student engagement in higher education has been growing. Trow (2006) highlights that as a more significant proportion of a given age group attends university, attendance becomes mandatory, and ensuring active student engagement becomes challenging. In its most immediate context, student engagement refers to the active involvement of students in their learning, including the time, dedication, and resources they invest (Krause and Coates, 2008). According to Trowler (2010), in a broader sense, the literature views student engagement as involving the interaction between the time, effort, and other pertinent resources that both students and their institutions invest in improving the student experience, improving learning outcomes, fostering student development, and enhance the institution's performance and reputation. Research has also commenced identifying specific educational practices that are particularly effective in engaging students. For instance, studies utilizing data from the National Survey of Student Engagement (NSSE) in the United States have successfully identified practices that significantly enhance student engagement (Kuh, 2008). While this approach aids in selecting effective educational practices, it leaves the underlying concept of 'student engagement' relatively undertheorized. Kuh (2008), for instance, pinpoint how the level of academic challenge, active and collaborative learning, student-faculty interaction, and a supportive campus environment contribute to student engagement. However, they must delve into the theoretical framework explaining how these elements collectively result in diverse positive outcomes.

These studies underscore the connection between student engagement and specific institutional or student characteristics. Nevertheless, Carini et al. (2006, p. 23) have emphasized that only a relatively small proportion of the variation in learning outcomes can be attributed to measures of student engagement based on survey instruments. According to Coates (2006), Kuh (2008) framework is the most sophisticated conceptualization of the phenomenon. Nonetheless, this framework somewhat downplays students' role in shaping their engagement. To what extent can students deliberately influence their approach to their studies? Therefore, it is no surprise that Fredricks et al. (2004) have called for a more comprehensive understanding of how "students behave, feel, and think" about engagement.

H2: The student-centred approach is positively associated with student engagement.

The role of innovation in art education holds a key spot, and developing critical thinking skills to help students generate innovation in the art and design fields is an essential aspect of professional success (Kalmuratov, 2023). The creative work of a designer inherently embodies an innovative process. This is because each project demands problem-solving, setting it apart from previous endeavors through its uniqueness and the harmonious amalgamation of theory and practical application. Consequently, this culminates in establishing conducive learning environments and utilizing cutting-edge technologies within the educational domain of design (Zhang et al., 2022). Given that the learning process in the realm of design entails creating artistic projects, applying innovative methods in this field necessitates a customized approach. Design stands out as a pivotal element in this approach. Well-structured project work profoundly impacts students by fostering their ability to acquire knowledge and skills autonomously, promoting independent thinking and creativity (Ridel et al., 2018). Consequently, the educational process is shifting towards problem-based research activities with distinct characteristics, which emphasize the comprehension of innovative ideas and experiences instead of traditional education.

Furthermore, it is noteworthy that students often predominantly rely on traditional learning strategies (Zaghal et al., 2022), and their problem-solving approach frequently hinges on drawing analogies with similar problems they've encountered before.

Consequently, the study of art education is frequently associated with memorization techniques. By embracing traditional methods, students tend to forego the "responsibility" of constructing a problem-solving process grounded in a conceptual understanding of the subject, often linking formalized procedures with the essence of art and the importance of innovation.

Numerous attempts have been made to implement and experiment with changes in teaching methodologies within various higher education institutions (Askarova, 2022). A substantial body of research has been dedicated to this field (Mashrapov et al., 2022). Education is widely recognized as a potent tool for driving social change and the betterment of all members of society. However, enhancing education quality can only be achieved by adopting innovative teaching practices, which can render course content engaging and motivate learners. Innovative teaching involves integrating technology into the teaching and learning processes to create a dynamic learning experience for students while providing a fulfilling teaching experience for educators (Khairnar, 2015). In an era of increasing globalization, educators must possess the ability to adapt to technological advancements and address new requirements in solving intricate problems.

The foundational issue at hand revolves around ensuring the quality of higher education, a pivotal prerequisite for nurturing society's intellectual potential and driving socio-economic and innovative advancements within a nation. This concern brings to the forefront the need to align Kazakhstan's higher education system with global benchmarks, enhance educational and instructional standards in higher learning institutions, and refine the preparation of competitive professionals for the job market. Presently, the progress of higher education in Kazakhstan is steered by integration into the higher education area, a framework aiming to synchronize domestic and international regulations governing higher education systems and modernize educational practices at contemporary universities (Massyrova et al., 2015; Yergebekov and Temirbekova, 2012).

H3: Students' engagement is positively associated with the students' innovative skills.

Studies have established strong connections between student engagement and factors such as student retention (Kuh, 2008) and academic performance. Higher education institutions have much to gain from their ability to cultivate an actively engaged student body. The project's quality hinges on a thoughtfully designed teaching methodology to create an environment where students can independently develop and apply their creative abilities. Nevertheless, certain shortcomings persist within the training of designers, alongside the merits of specialized education systems. For instance, while the project work may fulfil the technical requirements, the project's execution might not align with the procedural expectations regarding the creative approach and graphical standards. In such instances, the creative process itself remains underappreciated. The primary goal of the educational project process should be cultivating students' capacity to autonomously carry out assigned tasks, enhance their attributes and self-awareness, and support their ongoing development as professionals (Asvio et al., 2022).

A study by Ganyaupfu (2013) found that teacher-student interactive methods proved to be more effective than the teacher-centered approach. These investigations indicate that direct teaching effectively transfers knowledge but may need to improve in promoting deeper understanding, problem-solving, and creativity. Innovative teaching methods are centred on the belief that every student possesses the potential to learn and achieve success in life. The traditional textbook lecture method does not effectively convey course content to the desired level for most students. Therefore, the necessity to enhance current teaching and learning approaches and employ fresh, innovative methods has emerged as a pressing requirement. Identifying the deficiencies in the teaching-learning process and introducing innovative teaching techniques has become imperative. Educators worldwide are advocating for the transformation and enhancement of existing learning methodologies and the exploration of new teaching approaches. The adoption of innovative teaching methods by instructors contributes to the improvement of student performance across diverse backgrounds (Kucharovich and Akmalovich, 2022). The rapidly changing landscape in various facets of

life, including work, technology, culture, lifestyle, and the environment, demands that students acquire new skills and knowledge. Furthermore, in the art and design domain, the need for developing critical thinking skills to generate innovation in designs and methods is critical.

H4: The student-centred approach is positively associated with the student's performance.

H5: Students' performance is positively associated with the students' innovative skills.

The approach focusing on students' needs and preferences in learning is gaining popularity quickly. This approach is seen as a fundamental and effective method for delivering high-quality education in today's fast-paced and challenging global environment. Its significance comes from combining various theories and principles, ranging from the constructivist learning theory (which is based on the idea that students actively shape their learning experiences) to the experiential model (which sees teaching as a way to transform existing knowledge) and the active learning model (which proposes that learning happens through interactions and experiences). This shift is about allowing students to personalize and internalize their learning by actively participating and engaging rather than just passively receiving information from teachers or experts. To conclude, the role of a student-centred approach in developing innovative skills for students to succeed in art and design careers is essential, and further understanding of these concepts is essential in developing an effective course program. The current study will address the gaps in the literature regarding students' engagement, performance, innovative skills, critical thinking skills, and student-centred approach importance.

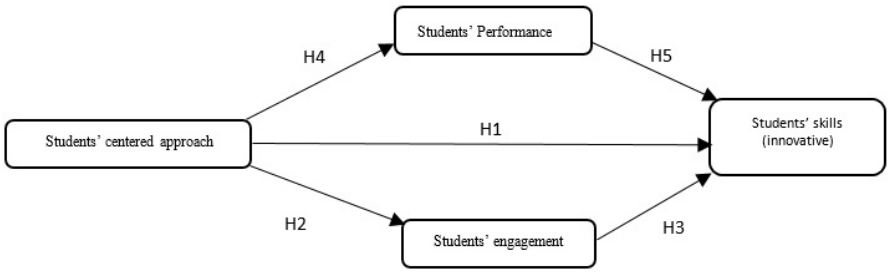

Figure 1: Conceptual model

METHODS

Sample and Procedure

Students were purposefully chosen from the sixth, seventh, and eighth semesters of their undergraduate program at Abai Kazakh National Pedagogical University, the initial stage of higher education. These students were specifically from the faculty of arts, culture, and sports, with a focus on those specializing in art and design. A total of 365 students were part of the study, distributed as follows: 115 from the sixth semester, 120 from the seventh semester, and 130 from the eighth semester. All students who participated provided their consent, and their privacy and confidentiality were ensured. Additionally, 18 Institute of Arts, Culture, and Sports teachers were involved. The students were categorized based on the semester they were currently enrolled in, forming three distinct groups. It's important to note that group members were prohibited from switching between groups. Each group was given a unique identification code by combining the students' registration numbers. The groups were made to assess students' performance.

The data collection process followed a time-lag approach. The initial set of data was gathered at the beginning of the semester (3rd week), the second set was collected midway through the semester (7th week), and the final stage of data collection took place at the end of the semester (14th week). The data collected at these three different time points were analyzed using statistical software tools: SPSS v21 and Process v4.2 by Andrew F. Hayes (Model 4).

Measure

All constructs and items were measured on a Likert five-point scale, anchored from 1 (strongly disagree) to 5 (strongly agree).

Student-Centered Approach (SCA): A self-developed scale of 20 items was used to measure SCA. The scale was developed using procedures and guidelines by Aithal & Aithal (2020). A sample item example: "The teaching methodologies perfectly align with my learning needs." The Cronbach's alpha value (α=0.93) is a well-accepted range per social science standards.

Students' Innovative Skills (SIK): The SIK scale was self-developed. The scale consists of 22 items to measure students' difficulty levels in solving problems, facing challenges, and dealing with unexpected tasks. An example item is "I can always manage to solve difficult problems if I try hard enough." The Cronbach's alpha value for this scale (α=0.92)

Students' Engagement (SE): The scale for SE self-developed. The scale consists of 21 items. The sample item is "I feel motivated and engaged with learning activities in the classroom." The Cronbach's alpha value for this scale is α=0.94.

Students' Performance (SP): The SP scale was self-developed, consisting of 19 items. The sample item is "I believe that the time and effort I have invested in learning innovative skills has been worthwhile." The Cronbach's alpha value for this scale (α=0.93).

ANALYTICAL PROCEDURES AND RESULTS

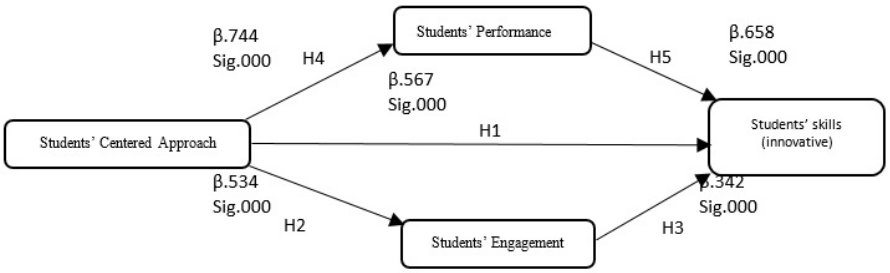

Figure 2: Analytical results

Sobel test

Table 1: Results showing all direct effects and indirect effects

Paths	Estimate	Sobel test *t*-value	Std. Error	*p*-value
Indirect Effect SCP→SP →SS	a×b 0.489	4.27531797	0.13736371	0
Indirect Effect SCP→SE →SS	c×d 0.182	3.29712719	0.21356453	0
Paths	Unstandardized Coefficients	Std. Error	Sig *P*-value	
Direct Effect SCP→SS	*β*=.567	0.231	0	
Model Summary	R = .934	Std. Error = 2.2536		

Significance levels: ***p< .001; *p< .05; SCP = Students' Centered Approach; SS = Students' Skills; Student Engagement SE; SP = Student Performance. All individual standardized regression weights are reported.

The indirect and direct effects were measured using Process v4.2 by Andrew F. Hayes (Model 4) in SPSS v21, along with the Sobel test. Table 1 shows the outcome of the process. Mediating analysis was performed to explore SCP association with SS.

Direct effect of Student-Centered Approach (SCP) to Students Skills-Innovative (SS)

The association between SCP and SS was statistically significant (β = .567; p=0.000). Therefore, we accept Hypothesis H1. According to Pardo & if the association is positive, we can progress with the model; however, even with a non-significant association, we can progress with the model. In this study, we have followed Baron and Kenny's recommendation. Furthermore, similar results were found in a study by Tebabal and Kahssay (2011). Developing creative skills in art and design, students can be enhanced through a student-centered approach. In a student-

centred approach, the development of course content needs to be aligned with the needs and expectations of the students, along with current and future challenges and requirements from the professional business environment. The current study highlighted the role of student-interest-based learning methodology, as developing a teaching approach that focuses on students helps significantly develop students' interest and thus allows students to reach their potential.

Indirect effect of Student-Centered Approach (SCP) to Student Performance (SP) to Students Skills-Innovative (SS)

The mediating analysis suggested that SCP has a positive and statistically significant association with SP (β = .744; p=0.000). Moreover, SP statistically correlates with SS (β = .658; p=0.000). The combined effect obtained using Process v4.2 was measured through a × b = .489 and the corresponding Sober t-value = 2.340 with p = 0.000. Therefore, we concluded a positive association between SCP and SS via SP exists. Thus, we accept Hypothesis H4 and Hypothesis H5. These results align with the previous studies (e.g., Aytaç and Kula, 2020; Hansen and Imse, 2016; Alamodi et al., 2014). These results provide the basis for developing teaching methodologies in alignment with the student's needs.

Furthermore, effective teaching methodologies not only increase students' performance but also develop creative skills in the students. In previous studies, such as the study conducted by Kaput (2018) and Colbert and Arboleda (2016), the study focused on students' achievement in a particular course. Therefore, they need to identify the skills required to succeed in the program as well as in their professional career. The current study narrows this gap to creative skills, thus highlighting the need for the development of creativity in students to gain success and utilize the skills effectively.

Indirect effect of Student-Centered Approach (SCP) to Student Engagement (SE) to Students Skills (SS)

Similarly, the mediating analysis suggested that CL has a positive and statistically significant association with VB (β = .534; p=0.000). Moreover, VB has a statistically significant association with SEPSA (β = .342; p=0.000). The combined effect was measured through c × d = .1826 and the corresponding Sober t-value = 2.549 with p = 0.050. Therefore, we concluded a positive association between SCP and SS via SE exists. Thus, we accept Hypothesis H2 and Hypothesis H3. These results are also supported by previous studies conducted in similar domains, such as the study conducted by Ali (2019), where he explored the role of problem-based learning in students' engagement and skills development. Furthermore, problem-based learning also works similarly to the student-centred approach. Additionally, a study explored the role of student agency in developing students' engagement and found a positive association. The student agency works based on a student-centered approach. Moreover, studies such as Talbert et al. (2019), McDavid et al. (2018 found similar results that further strengthened the study findings.

Correlation

Table 2: Pearson correlation

	SCP	SE	SS	SP
SCP	1			
SE	.921**	1		
SS	.762**	.765**	1	
SP	.857**	.632**	.765**	1

**Correlation is significant at the 0.01 level (2-tailed). N = 310

CL = collaborative learning; SE = self-efficacy; SEPSA = student engagement in practical skills; VB = value-benefits.

Table 2 shows the bivariate correlation analysis. SE has a very strong positive and statistically significant ($p \leq 0.05$) association with SCP (r = .921). SS strongly correlates positively with SCP (r = .762) and SE (r = .765). SP has a strong positive statistically significant correlation with SCP (r = .857) and a positive correlation with SE (r = .632). Lastly, SP has a strong positive and statistically significant correlation with

SS (r = .765). The person-correlation results show the strength of the linear association between the research variables. The Pearson correlation supports all the research hypotheses, as SCP strongly correlates positively with students' creative skills development. Furthermore, similar results were reported by Saragih and Napitupulu (2015). Similarly, H2 is also supported by the correlation results, as there exists a strong positive association between SCP and SE, and these findings are also backed by various studies such as Lee and Hannafin (2016). The H3 is also well supported by the correlation results, as SE has a strong positive association with students' innovative skills, and this is also backed by various studies such as Parsons and Taylor (2011). Furthermore, the correlation results are well aligned with H4, as SCP and SP have a strong positive association. The positive correlation results are also supported by different studies, such as Mingorance Estrada et al. (2019). Lastly, the correlation results between SP and students' innovative skills support the H5 and are supported by previous studies such as Ramos et al. (2013).

Regression Analysis

Table 3: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.742a	.551	.511	.76518

a. Predictors: (Constant), Students' Centered Approach, Students' performance, Students' Engagement, Students' skills(innovation)
b. Dependent Variable: Students' Centered Approach

Table 3 shows the model summary run under the regression analysis. The R-value represents the simple correlation and is 0.742, which indicates a high degree of correlation. The R-value is in a well-accepted range as per social science standards. Additionally, the strength of the models also predicts the internal association between the variable and the base of the research model. The model highlights the importance and effectiveness of the research model. The 74.2% strength of the model explains its goodness and effectiveness in predicting research variables.

Table 4: ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.409	3	8.136	13.896	.000b
	Residual	19.907	34	0.585		
	Total	44.316	37			

a. Dependent Variable: Students' Centered Approach
b. Predictors: (Constant), Students' Centered Approach, Students' performance, Students' Engagement, Students' skills(innovation)

Table 4 indicates that the regression model predicts the dependent variable significantly well, as the f-value of 13.896 is statistically significant ($p < 0.000$, which is less than 0.05).

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.545	0.659		3.863	0
	Students' Performance SP	0.213	0.067	0.372	3.192	0
	Students' Engagement SE	0.54	0.162	0.413	3.341	0.001
	Students' Skills(innovative) SS	0.214	0.076	0.347	2.825	0

a. Dependent Variable: Students' Centered Approach (SCA)

Table 5 shows the regression between students' performance, engagement, and skills (innovative) and the students-centred approach (SCA). To test the hypotheses, the dependent variable SCA was

regressed on the predicting variables SP, SE, and SS. Furthermore, it was found that students' performance has a statistically significant association ($p < 0.000$) with a beta coefficient β value of .213. Furthermore, students' engagement (SE) has a statistically significant ($p < 0.000$) association with the student-centred approach (SCA) with a beta coefficient β value of .540. Similarly, students' innovative skills (SS) have a statistically significant association ($p < 0.000$) with a beta coefficient β value of .214. In summary, a 1 unit increase in students' centred approach brings a .213 unit increase in students' performance, a .540 unit increase in students' engagement, and a .214 unit increase in students' innovative skills. Furthermore, from these results, we can understand that a centred approach to learning positively impacts the performance and skills of young art and design students. Table 6 shows the summary of the study's findings. The regression results are also supported by previous studies such as Hagenauer et al. (2015), Yılmaz and Yılmaz (2023), Wang et al. (2010). The results provide the basis for developing teaching programs targeting innovative skill development in art and design students. Innovative skills are the main factor in the success of artists and designers. The study highlighted the importance of creativity and its role in future success.

Table 6: Hypotheses summary

Hypotheses	Results
Hypothesis 1: Students' centered approach is positively associated with the innovative design students' skills.	Supported
Hypothesis 2: Students' centered approach is positively associated with the student's engagement.	Supported
Hypothesis 3: Students' engagement is positively associated with the students' innovative skills.	Supported
Hypothesis 4: Students' centered approach is positively associated with the students' Performance.	Supported
Hypothesis 5: Students' Performance is positively associated with the students' innovative skills.	Supported

DISCUSSION AND CONCLUSION

The study findings show the importance of students' student-centred approaches in educational institutes. The results showed that students' performance is dependent upon the teaching methodologies, and a student-centred approach's positive impact exists on students' creative skills from the perspective of the art and design professions. The results are well supported by previous studies such as Hagenauer et al. (2015), Yılmaz and Yılmaz (2023), Wang et al. (2010), Mingorance Estrada et al. (2019); Ramos et al. (2013). The study results show the importance of the students' innovative skills in succeeding in their art and design careers. Student-centred teaching methodology is critical to developing students' interest, thus leading to student engagement. Student engagement is directly linked with students' performance. The research model developed in the study will be highly useful for the institutes in developing their students' performance and enhancing the quality of education.

The model was tested using five hypotheses to assess the importance and impact of each variable. Moreover, from the study results, we can conclude that innovative skills are important for art and design students, as in their professional careers, artists and designers both require innovation in their works. Furthermore, developing innovative skills in students requires a student-based curriculum that focuses on their professional requirements. The research model will provide a strong base for the institutes to design a program to boost students' performance. The role of creative skills in art and design students is critical to achieving success. The strong association between the models shows the strength of the model and its applicability in academic and professional careers.

The findings of this study further strengthen the previous studies' models and provide a strong base for further studies to further develop understanding and knowledge in the current field of study. Previous studies include Aytaç and Kula, 2020; Hansen and Imse, 2016. Previous studies such as Aytaç and Kula,

2020. Alamodi et al. (2014) specifically focused on the student-centred approach without highlighting the critical factors required for developing teaching methodologies. The current study highlighted the importance of the student-centred approach and showed the model through which the student-centred approach can be developed. Furthermore, student engagement models and findings developed in previous studies such as Klemenčič (2017), Talbert et al. (2019). However, the current study highlighted the importance of students' engagement and developed a model through which students' engagement can be linked with variables. This study provides a deeper understanding of students' engagement while linking its base with students' interests and needs and external professional career requirements regarding current needs and future challenges.

The direct positive association between students' student-centered teaching and creative skills development shows the importance of the teacher's role and the value of students' learning needs. The traditional teaching model, driven by institutional and teacher preferences, is no longer effective in generating creative skills among future design specialists. The global competition across different fields has significantly impacted innovation and creativity. The current study also explored the association between students' student-centred approach and the level of students' engagement. The positive association shows the true value of interest-based learning, as nowadays, students are keener on particular skills that they can utilize to gain success in their professional careers. The study highlighted the importance of an effective educational approach to developing professional design specialists in their relevant fields. The results stress the importance of students' learning needs and values in developing educational programs. In particular, in art and design departments, the value of innovative skills is essential to gaining success.

Moreover, the semester-wise students' groups' performance was also measured, and it was found that students studying in the eighth semester had the highest level of performance, and their level of innovative skills was higher than students from semesters 6 and 7. This increase in performance can be linked to age factors or cognitive development as well as experience and knowledge gained in each semester. The study's findings can be generalized to other fields and departments where innovative skills are critical and important. The current study will also serve as a benchmark for future studies in the domain of students' engagement and students' performance.

To conclude, the study has highlighted the importance of innovative skills development in art and design studies through a student-centred approach to teaching. The student-centred approach to teaching develops the students' engagement, and when students bond positively with the course or program, they become motivated. This motivation allows the students to utilize their true potential and, as a result, their performance boost-up. The role of innovative skills not only increases students' performance but also increases their success rate in their professional careers. In art and design professional fields, the requirements of innovative skills are critical, as in this field, competition from other artists and designers is very high. Therefore, innovative skills play an important role in gaining a competitive edge.

Recommendations for educational institutes

Educational institutes need to develop student-centred methodologies in teaching and assign research work to the students. Course content should be developed based on students' mutual interests and recommendations. Moreover, educational programs must be developed based on the professional environment's current and future needs. To develop innovative skills among future design specialists, educational institutes need to allow students to develop projects that allow them to show their innovative side. Traditional teaching methodologies need to be replaced with innovative student-centred teaching methodologies. Lastly, students must be free to select coursework rather than follow standard-designed syllabi and courses. The study's findings provide the framework through which educational institutes can develop their teaching programs with a practical approach toward the development of the student's set of innovative skills, specifically in the art and design management field. The research findings also highlighted the importance of academic courses to meet the current and future requirements of each particular field and program. The study

highlighted the importance of student-centred teaching methodologies, practical skills acquisition (PSA), and the association between practical skills and future career prospects.

Limitations of the study

The study was conducted on art and design students in the first higher education stage at the Abai Kazakh National Pedagogical University. Due to the specific stage of higher education and the fact that only one faculty member was included in the study, this limited the generalization of the study. Moreover, only 365 students were included in the study, which also limits the scope of the study. This study was also limited to Kazak culture, as no foreign student was included. Additionally, the study was conducted over six months, limiting its generalizability. Despite the study's limitations, the results are useful for institutes across the globe, as the current research model has broader implications and usage.

Future recommendations for researchers

We recommend a large and diverse sample size with a longer time-lag study to better understand the importance of a student-centred approach and students' creative skills in terms of future design specialists. Future studies on diverse groups across multicultural environments will also help better understand students' creative skills. A comparative study among universities and departments will also help understand the importance of creative skills and their impact on students' learning experience and engagement. Moreover, the current study research model can be further developed based on the latest technology and developments in the field of software engineering. This will further enhance the quality and implications of the study. In the future, developing a framework that incorporates the essence of traditional teachings with virtual assistance can further enhance the learning experience.

Acknowledgement

This research has been, was, or is funded by Abai University (Contract № 09-02-55/256 dated March 24, 2023).

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