A Pilot Study on Emotional Intelligence, Learning Motivation, and Student Engagement among Art Students in Dezhou City, Shandong Province

Shi Zhiming and Kai Yan Wong

Abstract- **Student engagement is a crucial determinant of academic success and learning outcomes and has become an important area of research in higher education. Emotional intelligence and learning motivation are widely regarded as key drivers of student engagement. Eexisting research has primarily examined the impact of specific factors on student engagement in isolation. Research on the combined effects of emotional intelligence and learning motivation on student engagement in the context of art courses in Shandong Province remains insufficient. This study employed a quantitative design, involved art major undergraduates from colleges and universities in Dezhou City. And collected data by distributing online questionnaires to students. Data analysis was carried out using SPSS 26 software.. Descriptive statistics, reliability analysis, correlation analysis, and hierarchical multiple regression analysis were employed to examine the relationships among emotional intelligence, learning motivation, and student engagement. Data analysis indicates that emotional intelligence ($\beta = 0.628$, $p < 0.01$) and learning motivation ($\beta = 0.648$, $p < 0.01$) are both significant predictors of student engagement, and exhibit a strong positive correlation. These findings indicate that emotional and motivational factors play a significant role in driving student engagement. This study offers theoretical insights and practical implications for strengthening the cultivation of students' emotional intelligence and guiding and motivating their learning in arts education, with enhancing student engagement and improving academic performance.**

Keywords- **Student engagement, Learning motivation, Emotional intelligence, Art education, Higher education**

I. INTRODUCTION

Student engagement is strongly correlated with academic performance and learning outcomes; it is a key factor in determining whether students achieve academic success in higher education. Students with high levels of engagement typically demonstrate greater perseverance in their studies and are able to achieve higher academic accomplishments. As a result, improving student engagement has become a major concern for educators and educational researchers worldwide (Lowe, 2023). In art education, student engagement plays an especially important role because artistic learning relies heavily on creativity, emotional expression, and continuous practice (Nixon, 2020). Unlike some theoretical disciplines, art learning requires Students are expected to actively engage in communication and creative processes, reflect on artistic experiences, and sustain their effort in project-based work. However, in many university classrooms, art students can sometimes participate less in learning activities, show lower motivation, and demonstrate waning enthusiasm for creative practice (Nichols, 2015). In recent years, the rapid advancement of artificial intelligence and digital technologies has been reshaping art education and learning. Some generative AI tools and digital design platforms are transforming the way students learn and create art. To some extent, the use of these technologies and platforms has opened up new possibilities for artistic innovation, but they are also subtly affecting the extent to which students can remain actively engaged in class.

Previous studies have verified that emotional intelligence was a psychological factor affecting students' attitudes toward studying. Students with high emotional intelligence are better able to cope with academic stress, maintain a positive attitude toward learning, and demonstrate greater engagement in classroom activities. Research on emotional intelligence and learning motivation provides practical insights for better understanding students' classroom behaviour . Lot of studies support a positive link between emotional intelligence and engagement (Bao & Zhang, 2012; Abubakar et al., 2017; Zhang, 2023; Falola et al., 2025), the picture is less complete when we consider motivation's role. According to motivation theory, students with strong learning motivation invest more effort in their studies, demonstrate greater perseverance when encountering difficulties, and actively seek opportunities to participate in classroom interactions. Much research has examined emotional intelligence and learning motivation and assessed their impact on student academic performance. There remains a lack of robust empirical evidence to explore how the interaction between emotional intelligence and learning motivation influences student engagement. This gap is pronounced within the specific setting of art education in China, where the dynamics of student participation may differ.

This study employs quantitative research methods to examine the impact of emotional intelligence and learning motivation on student engagement among art education at universities in Dezhou, Shandong Province. This study fills a gap in the research in this field. By administering a validated questionnaire, this study aims to assess the direct relationship between emotional intelligence and student engagement, while examining the potential mediating role of learning motivation.

II. LITERATURE REVIEW

Student Engagement

Student engagement is affected by multiple factors. When students are facing the rigors of university life, academic pressures, and various external challenges,

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research on student engagement becomes even more important. (Fredricks et al., 2011; Green, 2017; Li & Xue, 2023). Scholars typically conceptualize it as comprising three interrelated dimensions: behaviour al engagement, affective engagement, and cognitive engagement (Bundick et al., 2014; Assuna et al., 2020; Latif et al., 2025). Behaviour al engagement reflects students' active participation in educational activities such as attending classes, completing assignments, and participating in classroom discussions. Emotional engagement refers to emotional experiences such as interest, enjoyment, and a sense of belonging in learning. Cognitive engagement refers to mental involvement in the learning process, including deep thinking and the strategic use of learning strategies. Numerous studies have shown that the higher students' engagement, the better their academic performance, the greater their persistence in learning, and the higher their satisfaction with education (Kahu & Nelson, 2018; Prananto, 2025).

In arts education, students maintaining a high level of student engagement is crucial to their academic development. Because of the creative nature of the arts, the learning process demands that students exhibit perseverance, a willingness to experiment, and the ability to express themselves emotionally (He et al., 2024). Research has empirically demonstrated that engagement is a key factor in the academic achievement and personal development of students in arts programs (Li, 2023). Among art students, who actively engage in the creative process tend to demonstrate greater artistic ability, sharper critical thinking, and more innovative perspectives. Students with lower levels of engagement often struggle to fully realize their creative potential; this finding warrants greater attention in art education practice.

Li and Xue (2023) conducted a comprehensive analysis of multiple studies to examine the factors that promote or hinder student engagement in various higher education settings. They argue that these factors can generally be categorized into two types namely facilitating factors and hindering facto.

Emotional Intelligence

Emotional intelligence has long been a focus of attention in the field of educational research. The concept of emotional intelligence (EI) was first proposed by Salovey and Mayer in 1990. Goleman popularized and quantified the concept, identifying five key components: self-awareness, self-regulation, motivation, empathy, and social skills (Goleman, 1995; Mrisho & Mseti, 2024). It refers to the ability to perceive, understand, regulate, and utilize emotions effectively in various contexts.

In educational settings, emotional intelligence plays an important role in shaping students' academic experiences (Chauhan et al., 2021; Mrisho & Mseti,2024). Numerous studies have shown that students with higher emotional intelligence are better at managing stress, maintaining a positive attitude toward learning, and handling interpersonal relationships with peers and teachers. Research indicates that emotional intelligence positively influences academic engagement, learning motivation, and academic achievement (Falola et al., 2025). Students who have already developed strong emotional regulation skills tend to cope more effectively with academic challenges and maintain sustained engagement in their studies.

In the field of arts education, as students engage in artistic creation, they require greater opportunities for emotional expression, personal reflection, and collaborative interaction; consequently, emotional intelligence becomes increasingly important (He et al., 2024). When active in arts courses, students with higher emotional intelligence may demonstrate greater engagement.

Ye Shengyao and other Chinese scholars (2024) employed a quantitative research methodology, collecting data through questionnaires and analyzing it using structural equation modeling. The results indicate that emotional intelligence is positively correlated with academic performance. The study also found that emotional intelligence mediates the relationship between mental health and academic performance (Shengyao et al., 2024).

Learning Motivation

Learning motivation is defined as the internal and external forces that drive individuals to engage in learning (Ryan & Deci, 2020). Motivation theory generally recognizes that students with stronger learning motivation tend to demonstrate greater effort, perseverance, and enthusiasm in their academic pursuits (Osly Usman et al., 2021). In the field of motivation research, there is a particularly influential theoretical framework: Self-Determination Theory (SDT), proposed by Deci and Ryan.

Self-Determination Theory (SDT) distinguishes between intrinsic and extrinsic motivation. For the purposes of this study, learning motivation is understood to encompass both forms: intrinsic motivation, which stems from personal interest and satisfaction derived from the activity itself; and extrinsic motivation, which stems from external factors such as family expectations or recognition from teachers and peers; and amotivation. Intrinsic motivation typically refers to actively engaging in a task out of genuine enjoyment of or curiosity about the task itself. Extrinsic motivation refers to behaviour driven by the desire to obtain a specific, separate outcome or reward. As the analysis shows, whether intrinsic or extrinsic, motivation serves as the key driving force behind students' pursuit of goals; It helps students clarify the starting point, progress, and objectives of their learning, thereby stimulating their overall engagement in learning activities (Miranti, Fatima & Reski, 2024).

Research suggests that intrinsic motivation is strongly associated with deeper learning, sustained engagement, and long-term academic success. In some cases, external factors can also strongly influence student motivation (Laliman & Palacio, 2022). Although extrinsic motivation can also stimulate learning behaviour, its effects are often less stable over time. Learning motivation may also function as a moderating factor influencing the relationship between psychological characteristics and learning behaviour s（ Singh et al., 2022）. Mai et al. (2023) argues that students with high motivation may translate emotional abilities into active engagement more effectively than students with low motivation.

Viet et al. (2024) used a quantitative research approach to examine the relationships between learning styles and

student motivation—including intrinsic motivation, extrinsic motivation, and amotivation—in blended learning settings within Chinese universities. Based on the findings, they suggested that educators adjust their instructional strategies to foster deeper student engagement and greater learning initiative.

III. METHODOLOGY

Research Design

This study adopted a quantitative research design to examine the relationships among emotional intelligence, learning motivation, and student engagement. Quantitative methods allow researchers to analyze statistical relationships among variables and test theoretical hypotheses. The quantitative approach was selected due to its ability to provide more robust statistical analysis of numerical data, allowing for hypothesis testing and the derivation of conclusions (Lim, 2024). This study focuses on full-time undergraduate students on art courses in Dezhou City, Shandong Province. Data was collected online, structured questionnaire, organized, and imported into SPSS 26 software for statistical analysis. Based on the results of the data analysis, conclusions were drawn, and practical recommendations were proposed in light of the research hypotheses.

Underlying Theory

Based on Self-Determination Theory (SDT) and using motivation as a mediating variable, this study examines the relationship between emotional intelligence and student engagement among art majors at a university in Dezhou, Shandong Province. Focus on the combined effect of emotional intelligence and learning motivation on overall student engagement.

The Self-Determination Theory was proposed by psychologists Edward L. Deci and Richard M. Ryan, providing a theoretical framework for understanding human motivation, psychological needs, and behaviour al development. The theory posits that fulfilling the three core psychological needs—autonomy, competence, and relatedness—is crucial for fostering intrinsic motivation and helps maintain high-quality engagement in activities.

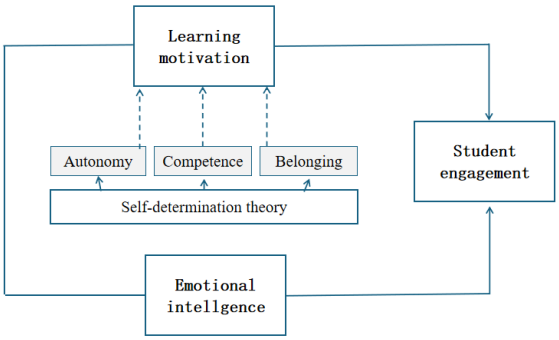


Figure1. Theoretical Framework

In this study, students' emotional intelligence and learning motivation were found to influence their sense of autonomy, competence, and belonging. Based on these findings, teaching strategies can be adjusted to enhance student engagement and academic progress.

Research Framework and Hypotheses

Based on the literature review, this study proposes a conceptual framework in which emotional intelligence influences student engagement, while learning motivation moderates this relationship.

The proposed hypotheses are as follows:

H1: Emotional intelligence positively predicts student engagement.
H2: Learning motivation positively predicts student engagement.
H3: Emotional intelligence and learning motivation jointly predict student engagement.

Participants

The participants of this study consisted of undergraduate students majoring in art universities located in Dezhou City, Shandong Province, China. And they are aged between 18 and 20. This study only collected quantitative data through structured questionnaires, and this research poses no more than minimal risk to participants. During the participation process, if participants feel any discomfort caused by the questionnaire, they can choose to withdraw at any time. All responses were collected anonymously and kept strictly confidential. Participation and answers will not affect students' grades or academic performance. In this study, 50 students were randomly selected; after data cleaning, 46 valid responses were obtained.

Instruments

Three validated measurement scales were used in this study, included Student Engagement Scale (5-point Likert), Emotional Intelligence Scale (7-point Likert), and Learning Motivation Scale (7-point Likert). All items were measured using Likert-type response scales. To ensure reliability and validity, we selected publicly available measurement tools that have been validated and translated them into Chinese for questionnaire distribution.

Student engagement was assessed with the University Student Engagement Inventory (USEI). Maroco et al. (2016) developed the USEI to measure student engagement in higher education settings across its behaviour al, emotional, and cognitive dimensions (Assunção et al., 2020). The USEI is a commonly used tool for measuring student engagement in higher education; researchers can assess student engagement by examining behaviour al, affective, and cognitive engagement (Assunà et al., 2020).

This study used the Wong and Law Emotional Intelligence Scale (WLEIS) to measure the emotional intelligence of undergraduate students in arts programs. The scale was originally developed by Law, Wong, and Song in 2004 and consists of 16 items designed to assess four core dimensions: emotional perception, emotional understanding, emotional regulation, and emotional application. In later studies, the reliability of this scale has been repeatedly

validated (Acosta-Prado & Zárate-Torres, 2019; Chishti et al., 2024).

The assessment of learning motivation used the Academic Motivation Scale (AMS), it a measure based on Self-Determination Theory (SDT) proposed by Vallerand et al. (1992). This scale assesses three distinct dimensions of motivation. These are intrinsic motivation, extrinsic motivation and amotivation. And its validity has been established across various educational contexts, as demonstrated in studies by scholars (Stover et al., 2012; Yee & Lai, 2021; Viet et al., 2025). This scale uses a 7-point Likert scale, with scores ranging from 1 (strongly disagree) to 7 (strongly agree). Participants are asked to select a response based on their own circumstances.

Data Collection

The data collection process for this study, rigorous data collection methods and statistical procedures were strictly followed to ensure the accuracy and reliability of the results. Data was collected using online questionnaires digital survey platforms, and confidentiality of participants' information was ensured.

Data Analysis

This study used SPSS 26 to analyze the data. We reviewed the data, identifying and excluding questionnaires with incomplete, inconsistent, or invalid responses. This data cleaning process ensured the quality of the collected questionnaire data and enhanced the reliability of the findings in this study.

Descriptive statistics were used to summarize the general characteristics of the data. This statistical analysis was used to describe the distribution of students' emotional intelligence, learning motivation, and engagement in the study. This study calculated metrics such as the mean and standard deviation for each variable to summarize their central tendency and degree of dispersion. These statistical data were used to analyze emotional intelligence, learning motivation, and student engagement of art majors at universities in Dezhou City, Shandong Province. The analysis provides a preliminary overview of these students' emotional and motivational characteristics, and the extent of their participation in academic activities.

On a 5-point scale, the student engagement's average score was 4.25 (standard deviation = 0.55), reflecting a relatively high level of student engagement in academic work. The vast majority of responses in the questionnaire fell between 3.70 and 4.80, indicating a relatively concentrated distribution in this score range. This concentrated distribution suggests that, as a group of undergraduate students at an arts institution, the students reported a consistent and stable level of engagement. Participants demonstrated outstanding emotional intelligence, with an average score of 6.00 (standard deviation = 0.75) on a 7-point scale. The data distribution was relatively dispersed, primarily concentrated between 5.25 and 6.75, indicating a moderate degree of variation among individuals. Learning motivation was relatively strong, with an average score of 5.90 on a 7-point scale (standard deviation = 0.58). Score variability was low, with most scores concentrated between 5.32 and 6.48. These results indicate that the sample in this study is relatively homogeneous and stable across these key constructs.

TABLE 1: VARIABLE'S MEAN AND STD.DEVIATION

Variable	Mean	Std. Deviation
Student engagement	4.25	0.55
Emotional intelligence	6.00	0.75
Learning motivation	5.90	0.59

A reliability analysis was conducted on the data to assess the internal consistency of the scales used in the study. Cronbach's alpha coefficients were calculated for the scales measuring emotional intelligence, learning motivation, and student engagement. Reliability analysis ensures that the questionnaire items for the three variables in this study deliver stable and consistent results. It is crucial for the validity of subsequent statistical analyses. The results of the reliability analysis show that Cronbach's alpha coefficients for student engagement, emotional intelligence, and learning motivation were 0.892, 0.952, and 0.903, those are all exceeding the basic standard of 0.7. The result indicates that the items in the questionnaire exhibit good inter-item correlation and consistency, and that the questionnaire has high reliability.

TABLE 2: VARIABLE'S RELIABILITY ANALYSIS

Variable	α	N of Items
Student engagement	0.892	15
Emotional intelligence	0.952	16
Learning motivation	0.903	28

We conducted a correlation analysis to explore the potential relationships among student engagement, emotional intelligence, and learning motivation among art majors in this study. By calculating Pearson's correlation coefficients, the strength and direction of the relationships between emotional intelligence, learning motivation, and student engagement were assessed. As shown in table 3, emotional intelligence was found to have a significant positive correlation of moderate to high strength with learning motivation ($r = 0.672$), student engagement ($r = 0.628$), and learning motivation with student engagement ($r = 0.648$) (all $p < 0.001$). These results support the prerequisites for mediation analysis, and there are no serious issues of multicollinearity among the variables, consistent with the expectation of a positive association between emotional intelligence, learning motivation, and student engagement based on Self-Determination Theory.

TABLE 3: PEARSON CORRELATION

Correlations	SE	EI	LM
Student engagement (SE)	1	0.628	0.648
Emotional intelligence (EI)	0.628	1	0.672
Learning motivation (LM)	0.648	0.672	1

Using emotional intelligence and learning motivation as independent variables and student engagement as the

dependent variable, this study employed regression analysis to examine the predictive role of emotional intelligence and learning motivation on student engagement and to verify their impact on the engagement of students in art courses. Regression analysis indicates that the model exhibits a significant overall fit, with the following parameters: R = 0.698, R^2= 0.487, adjusted R^2 = 0.463, and $p < 0.001$. This suggests that the combination of emotional intelligence (EI) and learning motivation (LM) explains 48.7% of the variance in student engagement and demonstrates significant predictive power.

TABLE 4: OVERALLPRE DICTIVE EFFICACY

Model	R	R2	Adj. R2	SEE	Sig. F Change
1	0.698[a]	0.487	0.463	0.40340	0.000

a. Predictors: (Constant), Emotional intelligence, Learning motivation.
b. Dependent Variable: Student engagement.

IV. RESULTS

The results indicate that art curricula at universities in Dezhou, Shandong Province, exhibit positive emotional states, strong learning motivation, and high levels of student engagement. Correlation and regression analyses reveal significant positive correlations among emotional intelligence, motivation, and engagement. These findings align with Self-Determination Theory (SDT), developing a high level of emotional intelligence helps meet core psychological needs such as autonomy, competence, and a sense of belonging, as these needs are met, students' learning motivation is internalized and translated into active student engagement. In this study, both emotional intelligence and learning motivation were confirmed to taste significant independent predictors of student engagement.

Descriptive statistics indicate that the standard deviations for all three measured variables are generally low, suggesting that response patterns within the sample are fairly consistent. The characteristics self-reported by participants appear relatively uniform and stable. The results of the regression analysis provide empirical support for all three research hypotheses. The results indicate that emotional intelligence has a positive predictive effect on student engagement, confirming Hypothesis1. Learning motivation has a significant direct positive effect on student engagement, supporting Hypothesis2. Hierarchical regression analysis further reveals that when emotional intelligence and learning motivation are included in the model simultaneously, both of these factors have significant explanatory power on their own and also produce a synergistic effect, supporting Hypothesis 3.

The findings indicate that emotional intelligence and learning motivation not only influence learning engagement independently but also work together in a mutually reinforcing manner. Higher emotional intelligence fosters intrinsic motivation, while strong learning motivation, in turn, enhances the use of effective emotional regulation strategies. This mutually reinforcing relationship produces a synergistic amplifying effect on student engagement.

This finding holds particular significance for arts education. Arts learning is inherently characterized by highly unstructured exploration, creative risk-taking, and sustained personal engagement. Students frequently engage in independent conceptualization, iterative revisions of their work, public critique, and continuous self-motivation. External directives or short-term rewards are often insufficient to sustain long-term engagement. In learning process, emotional intelligence provides psychological resources to cope with uncertainty and negative feedback, and learning motivation provides direction and drive. The synergy between the two helps students transform emotional fluctuations into creative inspiration and redefine setbacks as opportunities for growth. Based on these findings, when designing arts curricula, strategies should be consciously adjusted to promote students' emotional and motivational development.

V. CONCLUSION

Based on the findings described above, this study recommends that arts curricula consciously incorporate instructional content designed to foster emotional intelligence and learning motivation. Group discussions and peer feedback activities can enhance students' emotional awareness and empathy, improving their emotional intelligence. Allowing students to independently choose their creative themes for course assignments can strengthen their sense of autonomy.

Assigning tasks that present an appropriate level of skill challenge helps improve students' perception of their own abilities. Creating a supportive classroom environment can also meet students' need for a sense of belonging. These practices help internalize learning motivation and systematically increase student engagement.

Future research could adopt longitudinal study design or conduct cross-institutional comparisons. Other contextual or individual-level factors, such as teacher support, curriculum structure, or cultural background, could be examined as potential moderating variables.

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