

The Relationship between Collaborative Learning and Communication Skills among High School Students: The Moderating Role of Student Engagement

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Abstract

This study examines the moderating role of student engagement in the relationship between collaborative learning and communication skill development among high school students in Anhui Province, China. Communication skills – a core component of soft skills – are crucial for success in the 21st-century workforce. In response to calls for education to foster these skills, collaborative learning has emerged as a student-centered approach that may enhance students' communication abilities. A cross-sectional survey of 172 high school students who have experienced collaborative learning activities was conducted. Data analysis using SPSS revealed that positive perceptions of collaborative learning are significantly associated with improved communication skills. Moreover, student engagement amplifies this positive effect, indicating a significant moderating influence. These findings highlight the importance of creating engaging, collaborative learning environments to maximize students' communication skill development. The study offers practical insights for educators and policymakers on integrating collaborative learning and strategies to boost student engagement in high school curricula, as well as recommendations for future research to build on these results.

Keywords: Collaborative Learning, Communication Skills, Student Engagement, High School, China

Introduction

In today's evolving educational landscape, there is growing recognition of the importance of soft skills for student success, particularly in preparing individuals for the complexities of the modern workforce. Soft skills, such as communication, teamwork, problem-solving, and critical thinking, are increasingly valued alongside traditional academic achievement (McGowan et al., 2023; Sergeieva et al., 2023). Research and industry reports emphasize that these skills are indispensable for productivity and employability in the 21st century (Malicay, 2023; Robles, 2012). For instance, effective communication and the ability to collaborate in teams have been identified as key drivers of professional success, often accounting for a

major portion of career accomplishments relative to technical skills (Robles, 2012). As a result, educators worldwide are called to integrate soft skills training into formal education to better prepare students for future challenges (Sergeieva et al., 2023; Malicay, 2023).

In China, the emphasis on developing these competencies has become especially crucial as the country seeks to equip its youth with the tools needed for personal and societal advancement (Chen, 2023). Traditionally, China's high school education has been dominated by teacher-centered approaches focused on rote memorization and exam preparation, which have shown limitations in fostering soft skills like communication and teamwork (Chen et al., 2022). Studies have noted that teacher-centered instruction often results in passive learning and insufficient development of students' interpersonal and communication abilities, prompting recent educational reforms toward more student-centered pedagogies (Ahmed Al-Rashed, 2020; McGowan et al., 2023).

Collaborative learning has emerged as a promising student-centered approach to address the shortcomings of traditional teaching methods. In collaborative learning settings, students work together in small groups to discuss concepts, solve problems, and complete tasks, which actively engages them in the learning process (Laal & Ghodsi, 2012). This approach contrasts sharply with didactic teaching, as it requires students to communicate, negotiate, and construct knowledge together rather than passively receive information (Laal & Ghodsi, 2012). By allowing students to articulate their thoughts and hear diverse perspectives, collaborative learning can deepen understanding and build critical communication skills such as active listening, clear expression, feedback giving, and conflict resolution (Gokhale, 1995). Prior studies have demonstrated that collaborative learning environments help develop essential skills including communication, problem-solving, and teamwork (Wagino et al., 2023). These benefits have attracted considerable attention within the Chinese education system, especially in high school contexts where enhancing students' adaptability, creativity, and interpersonal skills is a national priority (Zhang, 2023; Chen et al., 2023). Despite growing support for collaborative, student-centered methods, there remains a notable gap in understanding the factors that influence their effectiveness in developing soft skills among Chinese high school students (Zhang, 2023).

Student engagement has been identified as one critical factor that can affect the success of educational approaches like collaborative learning (Gong & Cen, 2020). Student engagement generally refers to the degree of attention, curiosity, interest, and involvement that students exhibit in the learning process (Fredricks et al., 2004). It encompasses behavioral engagement (participation in activities, effort and persistence), emotional engagement (interest, enthusiasm, and attitude toward learning), and cognitive engagement (investment in learning and willingness to exert mental effort) (Reeve, 2023). High levels of engagement are associated with greater motivation, deeper learning, and improved skill development (Sarsale & Langub, 2023). In collaborative learning settings, engaged students are more likely to actively participate in group discussions, collaborate with peers, and take ownership of their learning, which can enhance the development of soft skills such as communication and teamwork (Gong & Cen, 2020). Conversely, students with low engagement may not fully benefit from collaborative activities, potentially diminishing the positive outcomes on communication skills.

Social Cognitive Theory (SCT) emphasizes learning through observation and social interaction. In collaborative learning environments, students learn from one another by modeling behaviors and strategies, which can strengthen communication skills and teamwork (Schunk, 2012; Kristensen et al., 2020). Through peer interaction, students observe effective communication practices and have opportunities to practice these skills in a supportive group context, reinforcing their learning.

This study aims to investigate the relationship between collaborative learning and the development of communication skills among high school students in Anhui Province, China. Specifically, it explores whether collaborative learning positively impacts students' communication abilities and further examines the moderating role of student engagement in enhancing this relationship. By focusing explicitly on collaborative learning practices within a Chinese high school context, this research addresses existing gaps in understanding how student-centered pedagogies foster soft skills that are critical for academic and professional success. The scope of the study is confined to high school students actively experiencing collaborative learning, thus ensuring relevance and practical applicability of findings for educators and policymakers interested in implementing similar educational strategies.

Literature Review

Underpinning Theory

This study is framed by Social Cognitive Theory (SCT), which explains learning as the product of triadic reciprocal determinism among personal factors, behavior, and environment (Bandura, 1986; 2001). In classrooms, this means that learners' beliefs and skills develop through continuous interaction with peers and tasks; learners both shape and are shaped by collaborative contexts. Through observational learning, students attend to, retain, and reproduce behaviors modeled by others, with motivation regulating whether those behaviors are enacted (Bandura, 2001). In collaborative groups, opportunities to observe peers' turn-taking, active listening, feedback, and conflict resolution provide rich models for communication practices.

SCT also highlights self-efficacy—beliefs about one's capability to perform a task—as a proximal determinant of engagement and performance. Observing competent peers and receiving constructive feedback are classic sources of efficacy information (mastery experiences, vicarious experiences, and verbal persuasion), which increase persistence and willingness to speak, clarify ideas, and negotiate meaning during group work (Bandura, 1997; Schunk, 2012). As communication tasks are rehearsed and refined in authentic interaction, higher self-efficacy further strengthens students' participation and skill growth.

These mechanisms align closely with collaborative (cooperative) learning, which intentionally structures positive interdependence and promotive interaction. A substantial literature shows that well-designed cooperative learning improves social interaction and discourse quality, thereby building communication and teamwork alongside achievement (Johnson & Johnson, 2009; Laal & Ghodsi, 2012; Gillies, 2016; Slavin, 2014). In SCT terms, collaborative tasks multiply high-quality models, scaffold guided practice, and normalize feedback cycles—conditions under which observational learning and efficacy gains translate into communicative competence.

Finally, the study's moderator—student engagement—is also grounded in SCT. Engagement reflects the allocation of attention, effort, and strategic cognition to learning activities (Fredricks, Blumenfeld, & Paris, 2004). Because attention and motivation are entry conditions for observational learning, highly engaged students are more likely to notice effective peer communication, practice strategies, and convert feedback into improved performance; low engagement dampens these pathways (Bandura, 2001). Empirical work in China similarly documents how engagement shapes the benefits students derive from interactive learning, reinforcing its moderating role in collaborative settings (Gong & Cen, 2020). Thus, SCT offers a coherent account of why collaborative learning should enhance communication skills—and why this effect strengthens as engagement increases.

Communication Skills in Education

The importance of soft skills in education has been widely acknowledged, particularly as these skills are deemed essential for success in the 21st-century workforce (McGowan et al., 2023; Sergeieva et al., 2023). Soft skills refer to a broad set of non-academic skills and personal attributes – including communication, teamwork, problem-solving, leadership, and adaptability – that enable individuals to effectively navigate their environment, work well with others, and achieve their goals. Among these, communication skills are often highlighted as fundamental; they encompass abilities such as clear oral and written expression, active listening, presentation skills, and interpersonal dialogue. Effective communication is not only critical in professional settings but also contributes to students' academic performance and social development. Employers increasingly prioritize communication and other soft skills when hiring, as they are linked to better teamwork and customer relations, higher productivity, and adaptability to new roles (Leitão et al., 2020; Horváthová et al., 2022). For example, a recent survey of industry requirements found that the ability to communicate ideas clearly and collaborate with diverse teams is as important as technical knowledge for new graduates (Gangoda et al., 2023).

Research indicates that traditional teacher-centered educational approaches – which emphasize lecture, memorization, and individual work – have not been effective in cultivating soft skills like communication in students (Chen et al., 2022; Mukhametkairov et al., 2023). In conventional classrooms focused on high-stakes examinations, students have few opportunities to engage in dialogue, ask questions, or work in teams, leading to underdevelopment of communication and social skills. This has led to growing calls for educational reforms that integrate active learning and soft skills development into the curriculum (Munishi, 2022). Programs in social-emotional learning (SEL) and other soft skills interventions have demonstrated positive outcomes; for instance, implementing soft-skill-focused activities in schools has been shown to significantly improve students' social behaviors, communication abilities, and attitudes toward learning (Müller et al., 2023; Colagrossi et al., 2023). These findings underscore the necessity of explicitly incorporating soft skills – especially communication – into educational experiences, rather than assuming they will develop implicitly alongside academic content.

Collaborative Learning

Collaborative learning is a pedagogical approach whereby students work together in small groups toward a common academic goal, engaging in discussions, peer teaching, and cooperative problem-solving. This method is grounded in the idea that learning is a social

endeavor and that interaction among learners can lead to deeper understanding (Laal & Ghodsi, 2012; Prince, 2004). Collaborative learning strategies can take many forms, including group projects, peer review exercises, study teams, and problem-based learning activities. A core principle of collaborative learning is positive interdependence, where each group member's contribution is essential for the group's success, thus encouraging students to communicate and support one another (Laal & Ghodsi, 2012).

Through such cooperation, students practice important social skills like leadership, negotiation, conflict resolution, and giving and receiving feedback (Hadi et al., 2015; Johnson & Johnson, 2009). These are precisely the kinds of communication-related skills that traditional lectures seldom cultivate. A significant body of research highlights the benefits of collaborative learning for both cognitive and social outcomes. Academically, students in collaborative settings often demonstrate improved understanding of course material and higher-order thinking skills, as explaining concepts to peers and hearing multiple viewpoints can reinforce knowledge acquisition (Laal & Ghodsi, 2012; Slavin, 2014).

Equally important, collaborative learning provides an authentic context for developing soft skills. Essential skills like critical thinking, communication, problem-solving, and teamwork can be developed through collaborative learning (Wagino et al., 2023; Baines et al., 2015). As students work together, they learn to articulate their ideas clearly, listen to others' perspectives, ask probing questions, and collectively refine their thoughts. Such interactions inherently improve students' communication skills, including both verbal and non-verbal communication, and their ability to work effectively in a team. A recent systematic review by Wagino et al. (2023) found that well-implemented collaborative learning not only enhanced academic performance but also significantly boosted students' communication abilities and motivation across various educational settings.

Collaborative learning has gained traction in many education systems as a means to better prepare students for real-world challenges. In the context of Chinese high schools, collaborative learning aligns with ongoing curriculum reforms that stress competence development over rote learning (Zhang, 2023; Ministry of Education of the People's Republic of China, 2020). Schools in China have begun incorporating group discussions, project-based learning, and peer-led activities, especially in subjects like English language and science, where communication practice can be naturally integrated. Early evidence suggests that these student-centered, collaborative initiatives improve students' engagement and soft skills (Zhang, 2023; Zhao et al., 2023). However, implementing collaborative learning in classrooms that are traditionally exam-oriented is not without challenges. Teachers and students accustomed to teacher-centric norms may require time and training to adapt to collaborative methods. Cultural factors, such as students' reluctance to speak up or challenge peers out of respect and face-saving, might also influence the dynamics of collaboration (Hofstede, 2011). Thus, the effectiveness of collaborative learning in enhancing communication skills may vary depending on how it is facilitated and how actively students participate.

Student Engagement

Student engagement is a key determinant of the success of collaborative learning and other student-centered approaches in skill development. It refers to students' active involvement

and commitment to learning tasks, typically expressed in three dimensions: behavioral engagement (effort, participation, persistence), emotional engagement (interest, enjoyment, sense of belonging), and cognitive engagement (investment in learning and self-regulation) (Reeve, 2023). Highly engaged students display on-task behavior, enthusiasm for learning, and a willingness to exert mental effort to master new concepts.

In collaborative activities, engaged students tend to contribute ideas, ask questions, and sustain interactive discussions, enriching the group learning experience. Prior studies show that high engagement is associated with greater motivation, deeper learning, and improved skill development (Sarsale & Langub, 2023). In such settings, engaged students take on roles, persist through challenges, and actively process peers' contributions, thereby refining their communication skills. By contrast, low-engagement students may remain passive, allow others to lead, or disengage when tasks become difficult, limiting both their own gains and the group's overall performance (Gong & Cen, 2020).

Research has increasingly explored engagement as a moderating factor—one that influences the strength of the link between teaching methods and learning outcomes. Collaborative learning is expected to improve communication skills, but this effect can be amplified when students are highly engaged. Engaged students more frequently practice communication, seek feedback, and reflect on their learning, enhancing skill acquisition (Gong & Cen, 2020; Kit et al., 2022). This dynamic means that two students in the same collaborative activity may experience very different outcomes, depending on their engagement levels.

However, empirical studies on this moderating role remain limited. Gong and Cen (2020) found that engagement levels influenced how much university students benefited from interactive tasks. Similarly, Kit et al. (2022) reported that positive teacher–student relationships and educational hope boosted engagement, which in turn improved academic and social outcomes.

In the Chinese high school context, understanding this moderation is particularly relevant. Large classes, varied prior experiences, and cultural attitudes toward group work can cause wide disparities in engagement. While some Chinese students thrive in collaborative settings when motivated, others may hesitate to speak up due to unfamiliarity with the pedagogy or fear of losing face, reducing the method's effectiveness (Zhao et al., 2023).

Theoretical perspectives reinforce the importance of engagement. Self-Determination Theory suggests that meeting students' needs for autonomy, competence, and relatedness increases intrinsic motivation and engagement. Collaborative learning supports these needs by offering choice in group roles, building competence through peer feedback, and fostering connection through teamwork (Boisadan et al., 2022). Social Cognitive Theory emphasizes learning through observation and interaction; engaged students are more likely to notice and adopt effective communication strategies from peers (Schunk, 2012).

Despite these insights, little research has specifically examined the moderating effect of student engagement on the relationship between collaborative learning and communication skills in Chinese high schools. Addressing this gap can guide strategies to maximize the benefits of collaborative learning.

Hypotheses:

H1: Collaborative learning is positively associated with the development of communication skills among high school students in Anhui Province, China.

H2: Student engagement positively moderates the relationship between collaborative learning and communication skills, such that the relationship is stronger when student engagement is higher.

Methodology

This study employs a quantitative research design to investigate the moderating role of student engagement in the relationship between collaborative learning and the development of communication skills among high school students. A cross-sectional survey method will be used to collect data from students in Anhui Province, China. This approach is suitable for examining the relationships among variables at a specific point in time and allows for the analysis of large samples, providing a comprehensive understanding of the research problem.

The target population for this study consists of high school students in Anhui Province who are currently enrolled in Grades 10, 11, or 12 and have experienced the collaborative learning approach in their coursework. A stratified random sampling method was employed to ensure adequate representation from various schools and grade levels. The sample size for this study was determined using G*Power statistical power analysis, targeting a minimum of 138 students to provide sufficient power for detecting significant relationships among the study variables.

Data will be collected using a structured questionnaire, which will include sections on students' perceptions of the collaborative learning approach, their engagement levels, and the development of communication skills. The questionnaire will be adapted from validated instruments used in previous studies (Ibrahim et al., 2013; Surif et al., 2013; Phuti et al., 2023) and will include items measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire will also collect demographic information such as age, gender, and grade level.

The data collection process will involve obtaining permission from school administrators and distributing the questionnaires to students during class hours. Participants will be informed about the purpose of the study, and their consent will be obtained prior to participation. The survey will be administered anonymously to ensure confidentiality and encourage honest responses.

Data will be analyzed using SPSS software. Descriptive statistics will be used to summarize the demographic characteristics of the sample and the key variables. Inferential statistics, including correlation analysis and multiple regression, will be used to test the hypotheses.

Findings

The demographic data from the survey indicate that the unit of analysis for this study was high school students in Anhui Province. The survey was distributed to 200 students enrolled in Grades 10, 11, or 12, who were actively participating in classes that implemented the collaborative learning approach. Out of the 200 distributed questionnaires, 180 responses were received, resulting in a response rate of 90%. After excluding 8 unusable responses (5

incomplete and 3 not meeting the criteria), 172 valid questionnaires remained, giving a usable response rate of 86%.

The majority of respondents were male, with 91 males representing 52.9% of the sample, while females represented 47.1%, with 81 respondents. This near-equal gender distribution suggests a balanced representation of male and female students in the study. In terms of grade level, Grade 12 students formed the largest group, accounting for 35.5% of the respondents, followed by Grade 11 students at 33.1%, and Grade 10 students at 31.4%. This distribution ensures that the study captures a broad range of experiences across the different stages of high school education.

Regarding the reliability of the scales used in the study, Table 1 presents the results of the reliability test using Cronbach's Alpha for three constructs: Collaborative Learning, Communication Skills Development, and Student Engagement. Cronbach's Alpha is used as a measure of internal consistency to determine the reliability of the items within each scale. For Collaborative Learning, Cronbach's Alpha was 0.834, indicating good reliability, as values above 0.7 are generally considered acceptable. The Cronbach's Alpha for Communication Skills Development was 0.812, and for Student Engagement, it was 0.889, both reflecting high internal consistency. These findings indicate that all scales were reliable and effectively captured the intended constructs.

Table 1
Reliability Test

Constructs	N of Items	Cronbach's Alpha
Communication Skills	16	.812
Collaborative Learning	7	.834
Student Engagement	14	.889

The correlation analysis presented in Table 2 examines the relationship between students' perceptions of collaborative learning and communication skills development. The Pearson Correlation coefficient between Collaborative Learning and Communication Skills Development was 0.472, indicating a moderate positive correlation. This suggests that students who perceived collaborative learning positively were more likely to report improvements in their communication skills. The significance level (Sig. 2-tailed) for this correlation was 0.000, which is highly significant ($p < 0.001$), confirming that the relationship between the two variables is statistically significant and not due to random chance. Table 2

Correlations Analysis

	Collaborative Learning	Communication Skills
Collaborative Learning	1	0.472**
Communication Skills	0.472**	1
Sig.	—	<0.001

Based on the correlation analysis presented in Table 2, the hypothesis (H1) that there is a positive relationship between students' perceptions of collaborative learning and communication skills development among high school students is supported. The Pearson Correlation coefficient of 0.472 indicates a moderate positive relationship, meaning that higher levels of positive perceptions of collaborative learning are associated with increased communication skill development. Furthermore, the significance level confirms that this relationship is statistically significant at the 0.01 level, implying strong evidence against the null hypothesis.

The regression analysis results, presented in Table 3, demonstrate that student engagement significantly moderates the relationship between Collaborative Learning and Communication Skills Development. The standardized coefficients (β) for Collaborative Learning, Student Engagement, and the Interaction Term (Collaborative Learning $\times$ Engagement) were 0.402, 0.418, and 0.145, respectively, all of which were statistically significant at $p < 0.001$. These findings indicate that both Collaborative Learning and Student Engagement independently contribute to the enhancement of communication skills, while the interaction term further highlights the moderating effect of engagement. Specifically, the positive effect of collaborative learning on communication skills development was amplified for students with higher engagement levels.

This finding supports the second hypothesis (H2), indicating that student engagement acts as a crucial factor in enhancing the effectiveness of collaborative learning in fostering communication skills. When students are more engaged, their active participation and motivation contribute to deeper learning and more effective communication skill development outcomes.

Table3

Moderated regression analysis

Predictor	Standardized Coefficients (β)	Sig.
Collaborative Learning	0.402	<0.001
Student Engagement	0.418	<0.001
Interaction Term (CL $\times$ Engagement)	0.145	<0.001

Discussion

The findings of this study provide strong evidence supporting the effectiveness of the collaborative learning approach in enhancing communication skills among high school students. The positive correlation between students' perceptions of collaborative learning and communication skill development is consistent with prior studies that have emphasized the value of collaborative, student-centered pedagogies in fostering key competencies such as active listening, clear expression, and teamwork (Wagino et al., 2023; Johnson & Johnson, 2009). Similar to the results reported by Laal and Ghodsi (2012), this study shows that students involved in well-structured collaborative activities develop stronger interpersonal and communicative abilities compared to those in more traditional, lecture-based settings.

Moreover, the results revealed that student engagement significantly moderates the relationship between collaborative learning and communication skills, such that the positive

effects of collaborative learning are amplified for students with higher engagement levels. This finding aligns with the work of Kit et al. (2022), who reported that engagement enhances the benefits of interactive learning approaches by increasing participation and the quality of peer interactions. Gong and Cen (2020) also found that engaged students were more likely to take active roles in group discussions, process information more deeply, and achieve greater improvements in both academic and social outcomes.

In the Chinese context, the moderating effect of engagement observed in this study supports the findings of Zhao et al. (2023), who noted that engagement is a critical factor in realizing the full potential of collaborative and problem-solving tasks, especially in environments transitioning from exam-oriented instruction to more participatory approaches. The results also resonate with Self-Determination Theory (Boisadan et al., 2022) and Social Cognitive Theory (Schunk, 2012), which both suggest that meaningful interaction, autonomy, and observational learning contribute significantly to skill development when students are actively engaged.

Overall, the consistency of this study's results with previous literature strengthens the conclusion that collaborative learning, when combined with high levels of student engagement, is a powerful strategy for enhancing communication skills among high school students.

Conclusion and Recommendations

In conclusion, this study provides strong evidence that the collaborative learning approach is effective in enhancing communication skills among high school students in Anhui Province. The findings show that positive perceptions of collaborative learning are significantly linked to improved communication skills, including active listening, clear verbal expression, and effective teamwork—competencies that are crucial for students' future academic and professional success. Furthermore, student engagement was found to be a key moderating factor that amplifies the positive impact of collaborative learning on communication skills development. This highlights the importance of fostering an engaging classroom environment to maximize the benefits of collaborative learning.

The results of this study have important implications for educational practice. To fully harness the potential of collaborative learning, educators should focus on creating supportive and engaging learning environments that encourage active participation. This involves designing meaningful and challenging group tasks, promoting student autonomy in decision-making, and ensuring equitable participation among students. Teacher training programs should also emphasize the skills needed to effectively facilitate collaborative learning, as teachers play a pivotal role in maintaining student engagement and guiding the collaborative process.

Policymakers should consider integrating collaborative learning and other student-centered approaches into the high school curriculum to enhance the development of communication skills and other essential soft skills. Given the growing demand for these competencies in higher education and the workforce, prioritizing their development within the educational system is essential. In addition, resources and support should be provided for teachers to implement collaborative learning effectively, including professional development opportunities, instructional guides, and access to collaborative learning materials.

Future research should address the limitations of this study by employing longitudinal designs to better understand the causal relationships between collaborative learning, student engagement, and communication skills development. Qualitative studies, such as classroom observations, interviews, or focus groups, could also provide richer insights into students' collaborative experiences and help identify the specific factors that contribute to successful implementation. By continuing to explore the impact of collaborative learning on communication skills, researchers can help refine educational practices that equip students with the interpersonal and communicative abilities needed to succeed in an increasingly interconnected world.

References

- Ahmed Al-Rashed, I. A. (2020). Integrating an intrinsic strategy in higher education: Learner-centered approach in language teaching. *Journal of Tikrit University for the Humanities*, 27(2), 20–34.
- Baines, E., Blatchford, P., & Webster, R. (2015). The challenges of implementing group work in primary school classrooms and including pupils with special educational needs. *Education 3-13*, 43(1), 15–29.
- Boisadan, A., Viazzi, C., Bourgognon, C., Blandin, B., & Buisine, S. (2022). Distance project-based learning during lockdown and learners' motivation. *Interdisciplinary Journal of Problem-Based Learning*, 16(2), 11–24.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- Bandura, A. (1997). Self-efficacy: The exercise of control. W. H. Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.
- Chen, L., Tang, X.-J., Chen, X., Ke, N., & Liu, Q. (2022). Effect of the BOPPPS model combined with case-based learning versus lecture-based learning on ophthalmology education for five-year pediatric undergraduates in Southwest China. *BMC Medical Education*, 22(1), 437.
- Chen, T. (2023). Advancing technical education and fostering soft skills development through digital learning. *Advances in Education, Humanities and Social Science Research*, 756, 176–182.
- Colagrossi, A. L. R., Magalhães-Barbosa, M. C., McCoy, D., Barnes, S. P., Temko, S., Bailey, R. F., & Prata-Barbosa, A. (2023). Adaptation and efficacy of a social-emotional learning intervention (SEL Kernels) in early childhood settings in Southeastern Brazil: A quasi-experimental study. *Early Education and Development*, 35(4–5), 704–721.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268.
- Filho, C. A. R., Carmo, R., & Azevedo, R. (2021). Self-determination theory and learning engagement: A systematic review. *Educational Psychology Review*, 33(4), 1381–1414.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109.
- Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education*, 41(3), 39–54.

- Gangoda, A., Krasley, S., & Cobb, K. (2023). AI digitalisation and automation of the apparel industry and human workforce skills. *International Journal of Fashion Design, Technology and Education*, 16(2), 196–206.
- Gokhale, A. A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*, 7(1), 22–30.
- Gong, M., & Cen, Y. (2020). Exploring factors affecting behavioral, cognitive, and emotional engagement of international undergraduate students in China. *Journal of International Students*, 10(2), 511–532.
- Gong, M., & Cen, Y. (2020). Exploring factors affecting behavioral, cognitive and emotional engagement of international undergraduate students in China. *Journal of International Students*, 10(S[3]), 51–62. [https://doi.org/10.32674/jis.v10iS\(3\).1771](https://doi.org/10.32674/jis.v10iS(3).1771)
- Hadi, S., Retnawati, H., Munadi, S., Apino, E., & Wulandari, N. F. (2015). The difficulties of high school students in solving higher-order thinking skills problems. *Journal of Physics: Conference Series*, 812(1), 012101.
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, 2(1).
- Horváthová, A., Hrnčiar, M., & Rievajová, E. (2022). Changes in the skills of the workforce for future development of the labor market in the Slovak Republic. *Entrepreneurship and Sustainability Issues*, 9(4), 122–137.
- Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. *Educational Researcher*, 38(5), 365–379.
- Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. *Educational Researcher*, 38(5), 365–379.
- Kit, P. L., Liem, G. A. D., & Chong, W. H. (2022). Teacher–student relationship and student engagement: The moderating role of educational hope. *Educational Psychology*, 42(10), 1180–1197.
- Kristensen, L., Gadgaard, P., & Hvid, S. (2020). Fostering communication and teamwork through collaborative learning in science classrooms. *International Journal of Science Education*, 42(10), 1677–1695.
- Laal, M., & Ghodsi, S. M. (2012). Benefits of collaborative learning. *Procedia - Social and Behavioral Sciences*, 31, 486–490.
- Leitão, P., Geraldes, C. A. S., Fernandes, F. P., & Badikyan, H. (2020). Analysis of the workforce skills for the factories of the future. *IEEE Industrial Cyber-Physical Systems (ICPS)*, 333–338.
- Laal, M., & Ghodsi, S. M. (2012). Benefits of collaborative learning. *Procedia – Social and Behavioral Sciences*, 31, 486–490.
- Malicay, L. G. (2023). The integration of soft skills in professional education: Exploring the importance of communication, teamwork, and interpersonal skills in professional training and the methods used to incorporate them into educational programs. *International Journal of Advanced Research in Science, Communication and Technology*, 3(1), 5–15.
- McGowan, N., López-Serrano, A., & Burgos, D. (2023). Serious games and soft skills in higher education: A case study of the design of Compete! Electronics. *Electronics*, 12(2), 335.
- Ministry of Education of the People’s Republic of China. (2020). China’s education modernization 2035.

- Mukhametkairov, A., Kudysheva, A., Kulsharipova, Z., Syrymbetova, L., & Shaimerdenova, A. (2023). Development of soft skills of high school students as an opportunity to implement the requirements of modern education. *Bulletin of the Karaganda University. Pedagogy Series*, 109(1), 96–105.
- Müller, E., Naples, L. H., Cannon, L., Haffner, B., & Mullins, A. (2023). How an integrated arts program facilitated social and emotional learning. *International Journal of Early Years Education*, 32(2), 204–219.
- Munishi, E. J. (2022). The role of education in shaping youth employability skills: A case of higher learning institutions in Tanzania. *Journal of Education and Practice*, 13(12), 40–49.
- Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93(3), 223–231.
- Reeve, J. (2023). Understanding student engagement: Key concepts, dimensions, and strategies. *Educational Psychologist*, 58(1), 84–98.
- Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly*, 75(4), 453–465.
- Sarsale, J. S., & Langub, M. K. C. (2023). Effects of student-centered learning approaches towards interest in science. *Journal of Research, Policy & Practice of Teachers & Teacher Education*, 13(2), 1–16.
- Schunk, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Pearson.
- Sergeieva, L., Muranova, N., & Kupriyevych, V. (2023). Positive experience of project-based development of soft skills of future specialists: International perspective. *Professional Pedagogics*, 1(26), 83–91.
- Slavin, R. E. (2014). Cooperative learning and academic achievement: Why does groupwork work? *Anales de Psicología*, 30(3), 785–791.
- Schunk, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Pearson.
- Slavin, R. E. (2014). Cooperative learning and academic achievement: Why does groupwork work? *Anales de Psicología*, 30(3), 785–791.
- Wagino, W., Maksum, H., Purwanto, W., Krismadinata, Suhendar, S., & Koto, R. D. (2023). Exploring the full potential of collaborative learning and e-learning environments in universities: A systematic review. *TEM Journal*, 12(3), 1772–1785.
- Zhang, C. (2023). Influences of problem-based online learning on the learning outcomes of learners. *International Journal of Emerging Technologies in Learning*, 18(2), 4–19.
- Zhao, X., Li, M., & Huang, Y. (2023). Enhancing student engagement and communication skills through collaborative problem-solving: Evidence from Chinese high schools. *Asia-Pacific Education Researcher*, 32(4), 289–301.