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THE DEVELOPMENT OF ACTIVE LEARNING MODEL FOR ENHANCING SOCIAL EMOTIONAL LEARNING OF COLLEGE STUDENTS

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Abstract

Social Emotional Learning is important for the learners' success in all aspects. It is related to academic achievement, emotional intelligence, social skills, and emotional management abilities of the learners. This research aimed to evaluate the effectiveness of an active learning model for enhancing college students' social-emotional learning. The samples were first-year undergraduates majoring in Preschool Education at the School of Education, from Guangdong Baiyun University. In this study, the research instruments were social emotional learning questionnaires with total reliability of 0.96 and an active learning model for enhancing social emotional learning. An active learning model consisted of 14 lessons, with each lesson's activities based on three steps: 1) Lead-In 2) Learning Activities Process and 3) Conclusion. Each lesson lasted for 90 minutes, and the activity was conducted for a total of 6 weeks. Statistical methods such as mean, standard deviation (SD), one-way and two-way repeated ANOVA analysis were used to analyze the data. Based on voluntary student participation, 40 students became the samples of this study. These samples were randomized to the experimental group and the control group equally. The experimental group (n=20) received an active learning model for enhancing social emotional learning, but the control group was not. The research results showed that an active learning model was effective in enhancing college students' social emotional learning, and the experimental group continued to show improvement at one-month follow-up as follows: 1) college students' social emotional learning after receiving an active learning model and after the follow up period was significantly higher than before beginning the experiment at a level of .05 and 2) college students' social emotional learning after receiving an active learning model and after the follow up period was significantly higher than those in the control group at a level of .05. Therefore, it can be concluded that an active learning model is effective in enhancing social emotional learning in college students.

Keywords: Social Emotional Learning; Active Learning Model; College Students

Introduction

The concept of social-emotional learning (SEL) originates from psychologists and educators' research on emotional intelligence, such as that of Daniel Goleman and Peter Salovey, who emphasize the significant impact of emotional skills on individual development and success. The establishment of the Collaborative for Academic, Social, and Emotional Learning (CASEL) in 1994 marked the official recognition of social-emotional learning as an independent field. CASEL defines SEL as the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions (CASEL, 2022). Scientifically validated high-quality SEL programs have been proven to positively impact students, improving their behavior, attitude adjustment, and academic performance (Chernyshenko et al., 2018). A meta-analysis of 213 universal social-emotional learning programs, covering 270,034 students from kindergarten to high school, showed that students participating in SEL programs had significant improvements in social-emotional skills, attitudes, behavior, and academic performance, with an overall score increase of 11 percentage points compared to the control group (Durlak et al., 2011). These cumulative effects indicate that social-emotional learning has achieved significant and effective results in the education field (Zins et al., 2004; Oberle et al., 2014; Greenberg et al., 2003), aiming to promote the holistic development of all students (Zins & Elias, 2007).

Despite the substantial benefits of social-emotional learning, there are significant pain points that remain unaddressed, particularly in the context of higher education. College students often face challenges in self-awareness, emotion management, interpersonal communication, and motivation, exacerbated by the traditional focus of educational systems on academic achievement at the expense of emotional intelligence (Wu, 2021; Li & Wang, 2017). These deficiencies hinder students' ability to navigate personal and academic challenges effectively, ultimately impacting their overall well-being and success.

All-round development among college students in China have been a growing concern. According to a comprehensive study encompassing 10,424 research results indexed , a meta-analysis of 1,135 studies covering 3,248,179 students revealed severe mental health issues among college students. The findings indicate that 20.8% have depressive symptoms, 13.7% feel anxious (Yu, 2022). A survey of 228 Chinese college students on their interpersonal relationships shows that contemporary college students generally have poor interpersonal relationships, with 19.7% experiencing severe interpersonal distress, 33.3% moderate distress, and 46.9% mild distress (Liu, 2023). A large-scale survey of 11,982 college students on emotional intelligence shows that while the overall level of emotional intelligence is acceptable, there is a deficiency in emotional expression ability (Lu et al.,

2016). This data underscores the urgency and necessity of implementing Social-Emotional Learning (SEL) programs to improve the mental health status and overall development of college students.

Moreover, the curiosity surrounding the potential of active learning models to enhance SEL in college students is a crucial area of exploration. Active learning, characterized by engaging students in higher-order thinking activities, diverse learning activities, and the exploration of personal attitudes and values (Bonwell & Eison, 1991), presents a promising approach to address these pain points and positively impact students' social and emotional development.

This research aims to motivate educators, policymakers, and institutions to recognize the significance of SEL in higher education and implement active learning models to address the identified pain points. The results of this study can benefit a broad audience, including educators seeking effective teaching methods, students striving for holistic development, and institutions aiming to enhance student success and well-being. By applying the findings of this study, educational stakeholders can create supportive learning environments that foster students' social and emotional growth, ultimately contributing to their academic and personal achievements.

Literature Review

Active learning is an instructional approach designed to engage students actively in the learning process, avoiding passive reception of information. Bonwell and Eison (1991) identified characteristics such as engagement in higher-order thinking activities, diverse learning activities, and exploration of personal attitudes and values. Scholars have varied definitions of active learning: Felder and Brent (2009) focused on classroom activities, Collins and O'Brien (2011) emphasized reflection and engagement, while Freeman et al. (2014) synthesized it as involving activities and discussions to foster higher-order thinking and group collaboration. Active learning, according to Handelsman et al. (2007), enables students to construct new knowledge actively, integrate scientific skills, and engage in meaningful learning activities (Fink, 2003; Vanhorn et al., 2019).

Social Emotional Learning originates from emotional intelligence research, beginning with psychologists and educators such as Daniel Goleman and Peter Salovey. The term "Social and Emotional Learning" was formally introduced at the 1994 Feshler Institute conference, leading to initiatives like Collaborative for Academic, Social, and Emotional Learning (CASEL) advocating for SEL as a distinct discipline. Globally, educational policies have incorporated SEL concepts, highlighting their role in personal success and social functioning (OECD, 2021). SEL promotes comprehensive student development and capabilities in education and psychological well-being.

The learning process involves persistent changes through experience across various life contexts. Learning is an interactive process where learners actively construct meaning and shape cognitive structures. Different learning models—behaviorism, cognitivism, social learning, constructivism, and connectionism—provide diverse perspectives, enriching our understanding of dynamic learning processes and improving educational practices (De Houwer et al., 2013; Lave, 2009).

Currently, there is limited research on enhancing college students' social and emotional learning through active learning models. This study aims to address this gap by developing an active learning model designed to enhance college students' social and emotional learning. The model's effectiveness will be assessed through practical implementation, providing strategic references for future research. Key factors influencing college students' social and emotional learning include self-awareness, social awareness, self-control, relationship skills, and responsible decision-making. Therefore, the active learning model developed in this study will evaluate Chinese college students' social and emotional learning abilities across these five domains.

Research Objective

To evaluate the effectiveness of the active learning model on social emotional learning of college students: 1) To evaluate the impact of the active learning model on the enhancement of social emotional learning among experimental group student’s post-implementation; 2) To compare the effectiveness of the active learning model in enhancing social emotional learning between the experimental and control groups during and after the intervention period.

Research Methodology

This study aims to explore the impact of an active learning model on college students' social-emotional learning. Based on social-emotional learning theory, constructivist theory, and active learning theory, a model designed to promote social-emotional learning among college students was created with expert advice. This model includes 14 sessions, each lasting 90 minutes, over a period of 6 weeks. Each session consists of three steps: 1) Introduction; 2) Learning Activity Process; 3) Conclusion. Upon completion of the experiment, statistical methods such as mean, standard deviation (SD), and one-way and two-way repeated ANOVA analysis were used to analyze the data. The sample group was randomly divided into experimental and control groups, using a randomized control-group pretest-posttest design. The research design includes four steps:

Step 1: Pre-test Period

This study utilized a customized Social-Emotional Learning (SEL) questionnaire for college students as the assessment tool. A random sampling method was used to conduct a pre-survey with 262 undergraduate students from the Early Childhood Education Department at Guangdong Baiyun University. The scores of the participants were then ranked, and the students with the lowest scores were selected as the research sample, with the average score divided into experimental and control groups.

Sample Selection Process:

1. Pre-test Administration: The SEL questionnaire was administered to the 262 students.

2. Score Ranking: Scores were ranked from highest to lowest based on the pre-survey results.

3. Sample Selection: The lowest scoring 40 students were chosen to ensure they would benefit the most from the intervention.

4. Random Assignment: The selected 40 students were randomly assigned to the experimental group (n=20) and the control group (n=20), ensuring comparability and similar average scores between the two groups.

Step 2: Experimental Period

During the instructional phase, teaching activities followed a prescribed timetable using the active learning approach. This phase lasted for 6 weeks, comprising 14 sessions, with each session lasting 90 minutes. The control group did not receive any specific instructional intervention.

Step 3: Posttest Period

Following the conclusion of experimental activities for the experimental group, researchers administered the "Social Emotional Learning Survey for College Students" again to both the experimental and control groups, assessing their levels of social emotional learning.

Step 4: Follow-up Period

Approximately one month after the conclusion of the active learning model instructional activities, researchers conducted a follow-up survey with students from both the experimental and control groups. Subsequently, follow-up data was collected and analyzed, providing additional insights into the long-term effects of the experimental intervention.

Research Results

The objective is to evaluate the effectiveness of the active learning model on social emotional learning of college students. From the research result, it was found that the results indicated that the active learning model had a positive effect on college students'

social emotional learning. The experimental group continued to show improvements in the following aspects during a one-month follow-up:

1) Social emotional learning significantly increased after implementing the active learning model and during the follow-up period compared to before the experiment, with a significance level of 0.05;

2) Social emotional learning in the experimental group was significantly higher than that of the control group after implementing the active learning model and during the follow-up period, with a significance level of 0.05.

Research detailed results are as follows:

Results of date analysis for experimental group

This study employed one-way repeated measures ANOVA to analyze the changes in social emotional learning among university students in the experimental group at three time points: before the experiment, after the experiment, and during follow-up.

Table 1 Evaluation scores of the experimental group before, after the experiment and follow up (n = 20)

Experimental stage	M	S.D.	Implication
Pretest	2.01	0.035	Moderate low
Post-test	3.15	0.16	Moderate-high
Follow-up	3.14	0.17	Moderate-high

According to the analysis of variance shown in Table 1 significant changes in social-emotional learning scores among college students in the experimental group were observed before and after the experiment. Prior to the experiment, the social-emotional learning of the experimental group was moderately low (M=2.01, S.D.=0.04). However, post-experiment, scores significantly increased (M=3.15, S.D.=0.16), reaching a moderately high level. Subsequent follow-up surveys indicated stable scores (M=3.14, S.D.=0.17), still at a moderately high level. This suggests that the experiment had a positive and enduring impact on the social-emotional learning of college students.

Table 2 ANOVA results of each component score of the experimental group students at different time points (before and after the experiment, follow up) (n = 20)

Experimental stage	M	S.D.	Implication
Self-awareness			
Pre-experiment	1.72	0.21	Low
Post-experiment	3.21	0.31	Moderate-high
Follow up	3.17	0.30	Moderate-high
Social awareness			
Pre-experiment	2.30	0.18	Moderate low
Post-experiment	3.13	0.26	Moderate-high

Follow up	3.05	0.22	Moderate-high
Self-management			
Pre-experiment	1.85	0.11	Moderate low
Post-experiment	3.08	0.23	Moderate-high
Follow up	3.12	0.26	Moderate-high
Relationship skills			
Pre-experiment	1.67	0.11	Low
Post-experiment	3.12	0.25	Moderate-high
Follow up	3.11	0.26	Moderate-high
Responsible decision-making			
Pre-experiment	2.49	0.14	Moderate low
Post-experiment	3.21	0.26	Moderate-high
Follow up	3.24	0.26	Moderate-high

Based on Table 2, we observe significant improvements in students' scores on various SEL components before and after the experiment. Before the experiment, students in the experimental group exhibited moderate low levels of self-awareness (pre-M=1.72, SD=0.21) and moderate low levels of social awareness (pre-M=2.30, SD=0.18). After the experiment, scores for self-awareness increased to moderate high levels (post M=3.21, SD=0.31), and social awareness also reached moderate high levels (post M=3.13, SD=0.26). Additionally, scores for self-management, interpersonal skills, and responsible decision-making, initially at moderate low levels, significantly improved to moderate high levels post-experiment. These results indicate that the experiment effectively enhanced students' self-awareness, social awareness, self-management, interpersonal skills, and responsible decision-making.

Table 3 Descriptive Statistics and ANOVA Results for Pre-test, Post-test, and Follow-up Stages of Different Social and Emotional Learning Components

Component	Stage	M	S.D.	F	Sig	LSD
Self-awareness	Pre-test	1.72	0.21	195.429***	.001	1＞2
	Post-test	3.21	0.31			1＞3
	Follow up	3.17	0.30			2＞3
	Total	2.70	0.27			
Social awareness	Pre-test	2.30	0.18	116.151***	.001	1＞2
	Post-test	3.13	0.26			1＞3
	Follow up	3.05	0.22			2＞3
	Total	2.83	0.22			
Self-management	Pre-test	1.85	0.11	243.385***	.001	1＞2

	Post-test	3.08	0.23			1 > 3
	Follow up	3.12	0.26			2 > 3
	Total	2.68	0.20			
Relationship skills	Pre-test	1.67	0.11	336.515***	.001	1 > 2
	Post-test	3.12	0.25			1 > 3
	Follow up	3.11	0.26			2 > 3
	Total	2.63	0.21			
Responsible decision-making	Pre-test	2.49	0.14	82.402***	.001	1 > 2
	Post-test	3.21	0.24			1 > 3
	Follow up	3.24	0.26			3 > 2
	Total	2.98	0.21			

***p< 0.001

The researchers used repeated measures ANOVA to assess the results of five variables: self-awareness, social awareness, self-management, interpersonal skills, and responsible decision-making (see Table 5). From pretest to posttest and follow-up stages, all variables showed significant improvement (F values ranged from 82.402 to 336.515, $p < 0.001$). LSD post-hoc tests confirmed significant pairwise comparisons between pretest, posttest, and follow-up stages ($p < 0.001$), indicating significant improvement from pretest to posttest and maintained scores at follow-up, with posttest scores generally higher than follow-up scores (except for responsible decision-making). These findings suggest that the intervention effectively enhanced social emotional learning capabilities and demonstrated sustained effects over time.

2.Results of date analysis for experimental group and control group

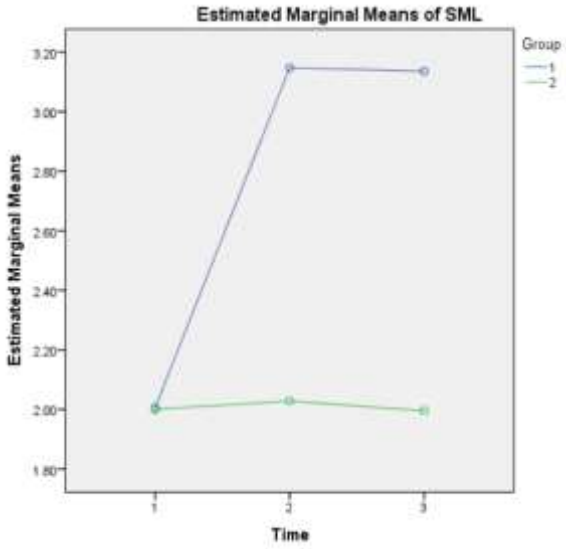
TABLE 4 Social emotional learning score of 40 college students, involving the experimental group and the control group, before and after the experiment, and follow up results (n = 40)

Stages	Groups	M	S.D.	Implication
Self-awareness				
Pre-experiment	Experimental group	1.72	0.21	Low
	Control group	1.68	0.19	Low
Post-experiment	Experimental group	3.21	0.31	Moderate-High
	Control group	1.69	0.15	Low

Follow up	Experimental group	3.17	0.30	Moderate-High
	Control group	1.63	0.17	Low
Social Awareness				
Pre-experiment	Experimental group	2.30	0.18	Moderate-Low
	Control group	2.29	0.25	Moderate-Low
Post-experiment	Experimental group	3.13	0.26	Moderate-High
	Control group	2.36	0.18	Moderate-Low
Follow up	Experimental group	3.05	0.22	Moderate-High
	Control group	1.90	0.14	Moderate-Low
Self-Management				
Pre-experiment	Experimental group	1.85	0.11	Moderate-Low
	Control group	1.88	0.18	Moderate-Low
Post-experiment	Experimental group	3.08	0.23	Moderate-High
	Control group	1.93	0.16	Moderate-Low
Follow up	Experimental group	3.12	0.26	Moderate-High
	Control group	2.26	0.21	Moderate-Low
Relationship Skills				
Pre-experiment	Experimental group	1.67	0.11	Low
	Control group	1.67	0.24	Low
Post-experiment	Experimental group	3.12	0.25	Moderate-High
	Control group	1.71	0.18	Low
Follow up	Experimental group	3.11	0.26	Moderate-High
	Control group	1.69	0.16	Low
Responsible Decision-				

Making				
Pre-experiment	Experimental group	2.49	0.14	Moderate-Low
	Control group	2.48	0.24	Moderate-Low
Post-experiment	Experimental group	3.21	0.26	Moderate-High
	Control group	2.52	0.14	Moderate-High
Follow up	Experimental group	3.24	0.25	Moderate-High
	Control group	2.50	0.17	Moderate-High

Table 6 presents the pretest, posttest, and follow-up results of the experimental and control groups on self-awareness, social awareness, self-management, relationship skills, and responsible decision-making. The data indicate that in the experimental group, after the experiment and follow-up, scores in self-awareness, social awareness, self-management, relationship skills, and responsible decision-making significantly improved, demonstrating moderate high levels of enhancement. In contrast, changes in these aspects in the control group were relatively minor, remaining at low to moderate levels. These findings highlight the effectiveness of the improved active learning model in enhancing participants' social-emotional learning.



Group 1 = Experimental group
Group 2 = Control group
Time 1 = Pre-test
Time 2 = Post-test
Time 3 = Follow up

FIGURE 1 Interaction graph of time and treatment

Figure 1 provides a more visual representation of the interaction effects of time and treatment on the study variables. The horizontal axis represents time, and the vertical axis represents the study variables. "1" denotes the experimental group, and "2" denotes the control group. From the figure, it is evident that measurements in the treatment group post-experiment and at follow-up are significantly higher than those in the control group, indicating that over time, the positive impact of the active learning model on social-emotional learning gradually becomes apparent and is sustained.

Discussion of Research Results

This research aimed to evaluate the effectiveness of an active learning model for enhancing college students' social-emotional learning following 2 hypotheses. The results reviewed as followed:

For the first hypothesis, the college students' social emotional learning after receiving an active learning model and after the follow up period was significantly higher than before beginning the experiment at a level of .05 The research results indicate a significant increase in social and emotional learning (SEL) following the implementation of the active learning model. Active learning emphasizes student participation and hands-on experiences, fostering essential SEL skills such as self-awareness, emotion management, and effective communication. This is consistent with Bonwell and Eison (1991), who highlighted engagement in higher-order thinking as key to active learning. Additionally, reflection is integral, helping students understand their emotions and interactions, as emphasized by Collins and O'Brien (2011). Active learning also creates a supportive environment where students feel encouraged by peers and instructors, facilitating the free expression of emotions. Felder and Brent (2009) noted that such an environment is crucial for SEL development.

For the second hypothesis, the college students' social emotional learning after receiving an active learning model and after the follow up period was significantly higher than those in the control group at a level of .05. The experimental group demonstrated significantly higher SEL compared to the control group, both immediately and in the long term. This sustained effect can be attributed to several factors. The active learning model promotes exploration, discussion, and practical application, leading to deeper understanding and retention of SEL skills. Handelsman et al. (2007) emphasized the importance of active construction of knowledge, while Freeman et al. (2014) highlighted the role of feedback in fostering higher-order thinking.

By linking abstract SEL skills to real-life situations through simulations and role-playing, the model enhances practical application and retention, as noted by Fink (2003). The emphasis on student autonomy and intrinsic motivation fosters a proactive approach to learning, sustaining interest and engagement in SEL over time, as discussed by Vanhorn et al.

(2019). Furthermore, the control group, which did not receive the active learning model, lacked structured opportunities for such experiential learning, feedback mechanisms, and autonomy support. This absence likely contributed to their comparatively lower SEL outcomes.

The active learning model integrates cognitive, emotional, and behavioral elements, supporting comprehensive and lasting SEL development. This holistic approach aligns with the principles of SEL outlined by the Collaborative for Academic, Social, and Emotional Learning (CASEL). In contrast, the control group was not exposed to an environment that emphasized these integrated elements, further explaining the disparity in outcomes between the two groups.

In conclusion, the active learning model significantly enhances college students' SEL, with immediate and long-term benefits. The findings, supported by extensive literature, underscore the importance of active participation, reflective learning, a supportive environment, deep learning, continuous feedback, real-world application, student autonomy, and the integration of cognitive and emotional elements. These insights provide a valuable foundation for future research and practical applications in educational settings.

Conclusion

The primary objective of this study was to evaluate the effectiveness of an active learning model on the social-emotional learning (SEL) of college students. The results from pre-tests, post-tests, and follow-up tests using the Social Emotional Learning Questionnaire revealed several key findings. Initially, pre-test results indicated that students' SEL levels were generally low, with particularly poor performance in self-management, social awareness, self-awareness, and interpersonal skills. This highlighted a critical need for interventions aimed at enhancing these areas. Thirdly, following the implementation of the active learning model, the experimental group demonstrated significant improvements across all SEL dimensions. Notably, self-awareness and interpersonal skills showed marked enhancement, progressing from low to moderate levels. These improvements were sustained in follow-up tests, suggesting a lasting positive impact of the active learning model on students' SEL capabilities. Fourth, the data further underscored that the experimental group's SEL proficiency significantly surpassed that of the control group, both immediately after the intervention and in subsequent assessments. This finding confirms the efficacy of the active learning model in fostering SEL among college students and highlights its potential for broader application in educational settings.

In conclusion, the active learning model not only effectively enhances college students' SEL but also ensures the persistence of these improvements over time. These results provide robust theoretical and empirical support for incorporating active learning

strategies in educational practices to promote the holistic development and well-being of students.

Suggestions

Policy Recommendations:

Integration of Active Learning Models in Higher Education:

Higher education institutions should adopt active learning models to enhance social and emotional learning (SEL) among college students. These models prioritize key SEL skills like self-awareness and relational skills. Educational policies should mandate the incorporation of self-reflection and peer interaction activities, which are essential for developing these skills. Policies should also support the diversification of teaching methods to address varying SEL needs, such as teamwork for relational skills and journal writing for self-awareness. Additionally, policies should ensure the sustainability of these models through regular evaluations and encourage adaptability across different cultural and disciplinary contexts.

Support for Comprehensive SEL Assessment:

Educational policymakers should prioritize the development and implementation of comprehensive assessment tools for SEL. Longitudinal studies should be encouraged to track the long-term benefits of SEL programs. Policies should also promote cross-cultural comparative studies to evaluate the adaptability of SEL models in various educational contexts. Collaboration with educational stakeholders is essential to translate research findings into practical guidelines that support educational reform and students' holistic development.

Implementation Strategies:

Application of Active Learning Models:

Institutions should actively implement effective active learning models to enhance SEL in college students. This includes integrating self-reflection and peer interaction activities into the curriculum. Diverse teaching methods should be employed to address different SEL skills, such as teamwork exercises to improve relational skills and journal writing to enhance self-awareness. Regular evaluations should be conducted to ensure the model's effectiveness and sustainability. Moreover, the model should be adapted to fit different cultural and disciplinary contexts, ensuring its applicability across various settings.

Development and Application of SEL Assessment Tools:

Institutions should develop and utilize comprehensive assessment tools to measure SEL. Longitudinal studies should be conducted to track students' progress and the long-term benefits of SEL programs. Cross-cultural comparative studies should be initiated to assess the adaptability of SEL models in different educational contexts. Collaborations with educational policymakers and stakeholders are crucial to translating research findings into

actionable guidelines. These efforts will support educational reform and the holistic development of students.

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