INSTRUCTIONAL STRATEGY BASED ON INTEGRATED PHYSICAL PERFORMANCE WITH COLLABORATIVE LEARNING TO ENHANCE PHYSICAL HEALTH AND MENTAL HEALTH DEVELOPMENT FOR SEVENTH GRADE STUDENTS

Shan Xuanqi*, Athirach Nankhantee and Nirat Jantharajit

Program in Curriculum and Instruction, Faculty of Education, Nakhon Phanom University

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Abstract

The appropriate practices, that related body expression and collaborative learning strategies, can improve the behavior competencies of students, that related physical fitness, relieve stress, anxiety, and depression, and also enhance positive emotional experiences, self-awareness, and understand their physical abilities and mental health successfully. The purpose of this study were to: (1) Compare the physical health of seventh grade students between before and after learning through physical expression and collaborative learning strategies, and (2) Compare the mental health of seventh grade students between before and after learning through physical expression and collaborative learning strategies. The research samples composed of 30 Seventh Grade students, that obtained by Cluster Random Sampling method, from Zhou Enlai Middle School in Jiangsu, China. The research instruments were composed of instructional plans, the assessment form for evaluating physical function and psychological changes, conducted as a pre-test before intervention and as a post-test after intervention completion. Data collection includes students' physical expression ability test papers and psychological assessment scales. The intervention results showed that the improvement in the experimental group was statistically significant.

* Corresponding author: Shan Xuanqi
E-mail: 397694000@qq.com

These findings indicate that: (1) Students learned based on physical expression and collaborative learning strategy had higher of physical health than before learning at the .05 level of significance, and (2) Students learned based on physical expression and collaborative learning strategy had higher of mental health than before learning at the .05 level of significance.

Keywords: Physical Expression, Collaborative Learning, Physical Health, Mental Health

Introduction

This study explores in depth the combination of physical expression and collaborative learning strategies as a key means to enhance the physical, skill, and psychological knowledge levels of seventh grade students. As the students learning for the pinnacle of secondary education, the need for physical and psychological abilities becomes crucial, especially in the terms of physical and mental health. Seventh grade marks a crucial moment in students' academic journey, with a focus on preparing them for learning in higher education level and beyond this context (Ocasio, 2019). Whereas, physical fitness, skill level, and psychological level are not only the key to success in life, but also the key to effective communication and problem-solving in various real-world scenarios details (Mulcahy Ernst & Averly, 2020). However, traditional teaching activities are often insufficient to enable students to maintain good physical and mental health in the face of complex social environments and pressures.

Body expression, rooted in the belief of diverse movement composition Instead of isolated forms of exercise, it provides a new perspective for physical education teaching. By focusing on high-frequency movements skills in learning and combinations, this activity aims to enhance for students' athletic abilities, enabling them to learn more effectively understand and generate sports skills (Lu & Dang, 2023; El Dakhs, 2015). In addition, collaborative learning strategies

can promote interaction and knowledge sharing among students, which conform students to social nature of language acquisition and provides a platform for collaborative exploration of their motor meanings and skill strategies (Su et al., 2018; Storch, 2019).

The key fundamental principle behind this research was based on the understanding the effectve knowledge of integration between motor skills, collaborative exercises, and analytical skills. Whereas, strong athletic ability is the cornerstone of excellent physical and mental health, influencing students' ability to master subtle skills and derive meaning from the context (Schweitzer, 2016; Moats, 2009). In addition, a complex motor skills was essential for creating the coherent and meticulous psychological qualities.

Collaborative learning activity supplements body expression teaching methods by promoting interaction and in a participatory environment, students can collectively decode complex texts, discuss explanations, and collectively improve their motor skills (Er et al., 2021; Dascalu, 2014). The symbiotic relationship between motor expression and collaborative learning is expected to generate a synergistic effect, promoting in more comprehensive and profound understanding of skill using. This study purposes to contribute to educational practice by investigating the effects of combining the motor expression and collaborative learning interventions on the physical and psychological fitness of seventh grade students. These findings are expected about results to elucidate effective teaching strategies that enable students to meet the requirements of advanced physical skills and prepare them for academic success and effective communication in different contexts.

The key effective learning with practical significance is revealed of great importance in improving for academic preparation. This study has practical significance by addressing the urgent need to improve Academic preparation of the seventh grade students. As they transition learning to higher education,

improving their physical and mental health ability has become a necessary prerequisite or key prior knowledge for interdisciplinary success. In addition, the integration of physical expression and collaborative practice in real world are related, and collaborative learning provides students with practical skills applicable to real-world scenarios (Gillies, 2019; Zhao & Chen, 2014).

In addition, lift comprehensive physical expression ability can support research and solve theoretical problems There is a gap in understanding how the richness of learning activity affects body expression and motor skills of learners. By exploring, reveal interrelationships between these skills, and in this study contributes to a more comprehensive understanding details of motor ability, acknowledging that explaining language proficiency is not limited to this regular exercise, but also includes the ability to effectively use for bodily expression in various sports. Given that information teaching theory reveals these findings, it is possible to provide insights into the optimal integration of body expression teaching and collaboration to inform teaching theory Learning strategies (Gillies, 2019; Zhao & Chen, 2014). The core of the problem lies in the gap in more effective instructional strategies with theoretical insights into practical applications. Although the main body expression teaching method has shown promise in success promoting physical and psychological fitness, its potential synergistic effect with body expression has not been fully explored, especially in the context of physical education acting.

Seventh grade students are not complete adequately prepared for developing the requirements of physical health and mental health. The problem lies not only in the lack of physical health foundation, but also in the lack of collaborative learning experience that promotes the development of analytical motor skills. In order to make the research results universal, existing methods of teaching for body expressions and collaborative learning. Furthermore, researcher need to reveal new knowledge and successful instructional strategy.

Purposes of the Study

1. To compare the physical health of seventh grade students between before and after learning through physical expression and collaborative learning strategies.

2. To compare the mental health of seventh grade students between before and after learning through physical expression and collaborative learning strategies.

Research Methodology

This syudy was an Quasi-Experimental research that managed with one-proup pretest-posttest design. It was conducted using a quantitative research method. Which a diagram of one proup pretest and posttest design:

T_1 → X → T_2

Pretest Treatment Posttest

1. Population and Sample

The population in this study were 122 seventh grade students of Zhou Enlai Middle School in Jiangsu city, China in the academic year 2024.

The sample in this study was 30 seventh grade students of Zhou Enlai Middle School in Jiangsu city, in the academic year 2024, that obtained by cluster random sampling method.

2. Research Instruments

The three types of research instruments were used as follows:

2.1 Instructional Plans

This instructional activity was total crafted for 15 plans, and each plan assigned learning activities for 45 minutes to seamlessly blend Physical activities and Collaborative Learning in the context of adolescent students for physical education. The primary goal is to provide an engaging and effective learning experience that not only strengthens students' physical and mental health. The features of the strategy are as follows:

2.1.1 Relevance to Students' Lives: The choice of real-life situations, such as shopping or distributing food, is deliberate. It aims to capture the students' interest by connecting mathematical concepts to their everyday experiences, making the learning process more meaningful.

2.1.2 Collaborative Learning Emphasis: Manage Grouping students into small teams encourages collaborative problem-solving. This promotes teamwork, communication, and the exchange of ideas, crucial skills that extend beyond mathematics into various aspects of life.

2.1.3 Physical Learning for Context: Placing physical challenges within a context enhances situational learning. Students are presented with scenarios where they must apply mathematical concepts practically, reinforcing understanding and highlighting the real-world applications of they learn.

2.1.4 Resource Utilization and physical based learning: Providing tools like calculators and guiding students to use resources empowers them in their learning journey. This approach encourages physical-based learning, fostering a sense of curiosity and independence in problem-solving.

2.1.5 Teacher Guidance and Timely Feedback: The teacher's role involves guiding students through their collaborative efforts, offering support, and providing timely feedback. This ensures that students receive guidance when needed and could refine their problem-solving approaches.

2.1.6 Whole-Class Sharing and Summary: The model incorporates the whole class sharing sessions to facilitate knowledge exchange. This allows students to not only showcase their solutions but also learn from their peers, reinforcing a sense of community in the learning environment.

2.1.7 Flexible Assessment Strategies: The assessment strategies, including observation, presentations, and simple quizzes, are designed to be flexible. This adaptability allows teachers to gauge students' understanding effectively and adjust their teaching methods based on individual and group performance.

2.2 Assessment Scale for Physical health.

Understanding and evaluating a student's performance of physical health ability was crucial for assessing their overall proficiency in performance related physical health, that assigned with rating scales of 5-point levels. This study instrument is designed to assess behaviors of physical health abilities based on 25 items with a total score of 75 points, that was designed the meaning of each item in appropriate content. Therefore, each student can manage self-assessment based on this condition for evaluation their physical health and Mental health.

2.3 Assessment Scale for Mental health.

The process of construct research instrument for assessing mental health of students in this condition, researcher planed and designed the details of instrument in the same as assessment form for physical health. Which constructed based on rating scales of 25 items for self-assessment, that each item of rating scale was assgned with 5 points level, in the same as of physical health assessment form. In addition, researchers planed for collecting data based on self-assessment of each student before learning and the final of learning activity.

3. Data Collection

3.1 Evaluation for Physical Health

Researcher assigned quantitative assessing the completion of physical fitness indicators and motor skills based on rating scales evaluation with 25 items. At before and after learning management based on Physical Expression and Collaborative Learning of students. That provided students' time running 50 meters, distance of standing long jump, number of rope jumps per minute, and use specific data to support self-assessment with students' physical fitness and skill level. This assessment activity encourageed students concentrated in observing themselves activity through performance in class and activities related emotional expressions, and cooperative spirit based on students' movements, rhythm, and expressiveness in gymnastics class.

3.2 Evaluation for Mental Health

Researcher assigned assessment activity for mental health of students based on rating scales with 25 items, that assigned quantitative assessing the completion of physical fitness indicators and motor skills based on rating scales evaluation with 25 items. At before and after learning management based on Physical Expression and Collaborative Learning of students. That provided students' time running 50 meters, distance of standing long jump, number of rope jumps per minute, and use specific data to support self-assessment with students' physical and skill performance. This assessment activity encourageed students concentrated in observing themselves healthy conditions through performance in class and activities related emotional expressions, and cooperative spirit based on students' movements, rhythm, and expressiveness in gymnastics class.

4. Data Analysis

The following steps were implemented to analyze research data:

4.1 Ensuring robust data analysis, the statistical analysis begins with a rigorous examination of data to ensure its integrity and suitability for subsequent analysis. This included descriptive statistics were calculated to summarize the central tendencies and variability within the datasets, providing an initial glimpse into the patterns and distributions of scores.

4.2 Hypothesis testing to identify meaningful effects, that was constituted a pivotal phase in the analysis where the alternative hypothesis, which posits the existence of a significant effect. A parametric statistical test was employed t-test for Dependent Samples, was utilized to compare mean differences between mean different in one sample group, with pre-test and post-test scores on performance achievement or physical health and emotional expression outcome or mental health through test of research hypotheses.

Results of the Study

The research results of study for Instructional Strategy Based on Integrated Physical Performance with Collaborative Learning to Promote Physical Health and Mental Health Development for Seventh Grade Students, based on research purposes revealed in Table 1 and Table 2, as the followings:

1. The comparison of the students' physical health learned based on Integrated Physical Performance with Collaborative Learning between before and after instruction.

After the experiment, the researcher used 25 items of rating scale assessment for physical health with 125 points for seventh grade students before and after instruction based on Integrated Physical Performance with Collaborative Learning that using t-test for dependent samples which write shown in Table 1.

Table 1 The comparison of students' Physical health after instruction based on Physical Expression and Collaborative Learning

Test	n	Score	Mean	S.D.	df	t	p (1-tailed)
Pretest	30	125	55.50	6.42	29	23.648	.000*
Posttest	30	125	75.70	5.68			

*p< .05

Table 1 Illustrate there was significant difference in the value of Physical health of experimental group students that assigned instruction based on Physical Expression and Collaborative Learning, which had value of posttest than pretest at the .05 level of significance. That revealed the students had average scores of 75.70 (S.D. = 5.68) and 55.50 (S.D. = 6.42) respectively.

2. The comparison of the students' menal health learned based on Integrated Physical Performance with Collaborative Learning between before and after instruction.

After the experiment, the researcher used 25 items of rating scale assessment for mental health with 125 points for seventh grade students before

and after instruction based on Integrated Physical Performance with Collaborative Learning that using t-test for dependent samples which write shown in Table 2.

Table 2 The comparison of students' Mental health after instruction based on Physical Expression and Collaborative Learning

Test	n	Score	Mean	S.D.	df	t	p (1-tailed)
Pretest	30	125	42.46	4.96	29	19.124	.000*
Posttest	30	125	58.23	5.29			

*p< .05

Table 2 Illustrate there was significant difference in the value of Menal health of experimental group students that assigned instruction based on Physical Expression and Collaborative Learning, which had value of posttest than pretest at the .05 level of significance. That revealed the students had average scores of 58.23 (S.D. = 5.29) and 42.46 (S.D. = 4.96) respectively.

Conclusion and Discussions

1. Conclusion

The results of investigation for physical health and mental health of students that assigned learning management based on Physical Expression and Collaborative Learning with the sample group of seventh grade students. This study revealed that students were managed through instructional activity can show higher of related performance than before learning at the .05 level of significance as follows:.

1.1 The students in experimental group that assigned instruction based on Physical Expression and Collaborative Learning, revealed higher of post physical health than before learning at the .05 level of significance.

1.2 The students in experimental group that assigned instruction based on Physical Expression and Collaborative Learning, revealed higher of post mental health than before learning at the .05 level of significance.

2. Discussions

Researcher accepted and agreeed with the research results for two purposes and can explain the details of rationale conditions to support these result effects as the followings:

2.1 The students in experimental group that assigned instruction based on Physical Expression and Collaborative Learning, revealed higher of post physical health than before learning at the .05 level of significance. The key rationale to support result of students' physical health was related with these conditions; that collaborative learning activities are not merely passive recipients of knowledge but actively engage in the construction of knowledge. Through collaboration with peers, they can collectively contemplate, pose questions, and share perspectives, leading to a better understanding of performance concepts (Langer-Osuna, 2018). This collaborative construction process contributes to reinforcing their mastery of expression l knowledge, making it more profound and enduring. Whereas, participation in interactions within social contexts, students can develop richer social activities (Hoadley, 2023). When addressing socially relevant problems, they not only focus on the abstract nature of physical expression but also integrate content knowledge with real societal situations. This connection helps foster awareness among students of the practical applications knowledge in solving real-world problems. Additionally, activities can encourage them to pay attention to and understand social backgrounds, needs, and impacts, thereby cultivating a sense of social responsibility and awareness.

Furthermore, social cognitive learning also create an open learning environment where students can learn from each other's thought processes (Qureshi et al., 2023). Through interaction with peers, they encounter different perspectives, methods, and problem-solving strategies, broadening their cognitive horizons. This exchange of thinking not only enhances their deep understanding

of performance learning but also helps develop students' flexibility and comprehensive thinking abilities, thereby providing them with sharper insights into societal issues. Embodied cognition posits that cognitive processes are deeply influenced by the body's interactions with the environment (Lakoff & Johnson, 1999). This theory suggests that understanding and knowledge are not solely abstract constructs but are grounded in bodily experiences. In educational contexts, embodied cognition advocates for learning activities that engage students' senses and physicality, arguing that such experiences can enhance comprehension and retention. For instance, kinesthetic learning, which involves physical movement and tactile experiences, has been shown to improve memory and understanding in subjects ranging among related knowledge (Brunner, 2013). Therefore, collaborative learning can offer students vibrant and interactive learning experience, through collaborative problem-solving and interaction based on important social contexts, students not only deepen their understanding of content knowledge but also cultivate a more comprehensive and profound social awareness. Such learning experiences contribute not only to improving academic achievement but also equip students with more well-rounded cognitive and coping abilities when facing societal challenges. Whereas, learning motivation can obtain by adopting social cognitive learning and collaborative approach to stimulate motivation of students. This instructional activity can emphasize students' active participation and cooperation, creating a more engaging and interesting learning process. Here are some reasons that may contribute to increase in motivation. So that mindfulness practices, such as yoga and tai chi, are increasingly being integrated into school curricula to promote emotional regulation, reduce stress, and improve focus (Zenner et al., 2014).

Mindfulness practices, such as yoga and tai chi, are increasingly being integrated into school curricula to promote emotional regulation, reduce stress, and improve focus. These practices involve body awareness and controlled

movement, which can help students develop greater self-awareness and emotional intelligence. By incorporating mindfulness and movement into daily routines, schools can create a more supportive and calming learning environment, beneficial for both students and teachers. Adaptive Physical Education (APE) is designed to meet the unique needs of students with disabilities, ensuring that all children have access to physical activity and body expression (Henderson & Rimmer, 2015). From a theoretical standpoint, these findings align with the embodied cognition theory, which posits that bodily experiences play a critical role in cognitive processes. By practices for actively activities that involving the body movement in learning activities, adolescents may develop a deeper understanding of abstract concepts, leading to enhanced memory retention and application of knowledge. Practically, the positive correlation suggests that educators can leverage their bodies. expression as a tool to augment academic instruction.

So that, this research results can explain based on key knowledge of collaborative learning and physical expression priciples can encourage students get successful the physical health condition in learning situation. In addition, an appropriate instructional activity schould create these ideas to apply for design and creating to support instructional management in various content situations successfully.

2.2 The students in experimental group that assigned instruction based on Physical Expression and Collaborative Learning, revealed higher of post mental health than before learning at the .05 level of significance. The rationale of this research result can explain based on the conditions of assigned instructional management through the key principles and ideas of physical expression and collaborative learning, that are supported incorporating physical activities and movement into lesson plans may not only make learning more engaging and enjoyable but also potentially boost students' academic

performance. (Ramzan et al., 2023; Maamuujav et al., 2021). Furthermore, the results highlight the importance of holistic educational approaches that high recognize the interconnectedness to improve of physical, cognitive, and emotional domains. By fostering an environment that encourages body expression, schools can contribute to the overall well-being and academic success of their students. When students are encouraged to move and engage their bodies during learning activities, they benefit from increased blood flow to the brain, which facilitates neural plasticity and supports the consolidation of new information. Kinesthetic learning has been shown to deepen understanding and retention by allowing students to connect abstract concepts with concrete physical experiences (Brunner, 2013).

The main concept of adolescent body expression, analyzing its connotation, forms of expression, influencing factors, and its important significance in the process of adolescent growth. Through multidimensional analysis, the key role of body expression as a unique communication method for adolescents in emotional expression, social interaction, and self-awareness construction is revealed. This provides a theoretical basis for further understanding the psychological development and behavioral patterns of adolescents, as well as new ideas for educators, and related fields to guide the healthy growth of adolescents. Whereas, virtual reality and augmented reality can simulate real-world scenarios that require physical engagement, enabling students to practice skills in safe and controlled environments (Wang et al., 2018). Wearable devices and motion including enhanced memory, attention, and executive functioning (Chaddock et al., 2011). The effectiveness of collaborative learning is also informed by group dynamics and the principles of cooperative learning These theories knowledge emphasize the importance of positive interdependence among learners. Whereas, group members are mutually accountable for achieving common goals. In cooperative learning structures, students are encouraged to

rely on each other for resources, expertise, and support, creating a shared responsibility for learning outcomes. This fosters a sense of community and reduces competitive pressures, allowing students to focus on collective problem-solving and knowledge construction (Johnson & Johnson, 1994).

Furthermore, expanding on Vygotsky's ideas, socio-cultural theory posits that learning is fundamentally a social and cultural process (Wertsch, 1998). According to this perspective, knowledge is not simply acquired individually but is constructed through participation in cultural practices. Collaborative learning provides a platform for students to engage in authentic tasks and discussions that mirror real-world scenarios. While correlational analysis provides valuable insights into the relationship between body expression and academic performance, it is essential to acknowledge the limitations of this approach. Education serves as a pivotal cornerstone in shaping the foundational years of adolescence, a period marked by rapid cognitive, emotional, and social transformations. This stage is not merely about academic learning; it encompasses a broader spectrum of development that includes emotional well-being, social competencies, and cognitive skills, all of which are crucial for adolescents to navigate their personal and professional lives effectively (Eccles & Gootman, 2002).

Moreover, the educational system holds the potential to mitigate challenges faced during adolescence, such as identity formation, peer pressure, and academic stress (Bandura, 1977). By fostering a supportive and inclusive learning environment, schools can help adolescents develop resilience, self-esteem, and a sense of belonging, which are critical for their psychological health. The integration of physical activity and collaborative learning within the educational framework can further enhance these outcomes, offering adolescents a platform to express themselves physically while engaging in meaningful social interactions (Vygotsky, 1978). Therefore, the observed association does not necessarily mean that body expression directly causes improvements in academic performance.

Other unmeasured variables could influence both body expression and academic outcomes. Future research should employ experimental designs to establish causal links and explore the underlying mechanisms through which body expression affects academic performance. Longitudinal studies could also shed light on the long-term effects of body expression on academic trajectories. Moreover, the emphasis on test scores as the primary measure of educational success can overshadow the importance of developing critical thinking, creativity, and problem-solving skills, which are essential for success in the 21st century workforce (Pellegrino et al., 2001).

A Pedagogical Perspective on Integrating Body Expression and Collaborative Learning. Educators, as facilitators of the learning process, play a crucial role in observing and reflecting on the impact of integrating body expression and collaborative learning on adolescent development. Their insights provide a professional lens through which the effectiveness of these strategies can be evaluated. This section delves into the observations and reflections of teachers who participated in the study, shedding light on the nuances of implementing body expression activities and collaborative learning sessions in real-world classroom settings (Roy, 2019; Fareed et al., 2016). Teachers consistently reported increased levels of engagement and motivation among students when body expression was integrated into the curriculum. They observed that students were more attentive and enthusiastic during lessons that incorporated physical activities. Whereas, some educator commented that, "The energy in the classroom changed completely. Students who were usually disengaged became active learning participants." This heightened engagement was attributed to the novelty and key factor of body expression activities. Therefore, collaborative learning emphasizes individuality and group meaningfulness of learning, highlighting that students construct knowledge through their own experiences and reflections (Matriano, 2020; Voon et al., 2020).

So that, this research results can explain based on key knowledge of collaborative learning and physical expression priciples can encourage students get successful the physical health condition in learning situation. In addition, an appropriate instructional activity schould create these ideas to apply for design and creating to support instructional management in various content situations successfully. In addition, of conclusion for the correlational analysis conducted in this section reveals a positive association between body expression and academic performance among adolescents. This finding supports the integration of body expression activities into educational frameworks as a promising strategy for enhancing academic outcomes. However, further research is needed to unpack the complex dynamics at play and to guide the development of effective educational interventions that capitalize on the interplay between physical engagement and cognitive development.

Recommendations

1. Recommendations from this study

From research study about the effect of instructional strategy based on integrated physical performance with collaborative learning for the seventh grade students, was revealed that students had improved on physical health and mental health aspects after managed learning activities. Therefore, the researcher has recommended as follows:

1.1 This instructional activity based on physical performance with collaborative learning could improve physical health and mental health of students. This situation was effective context that assigned learning based on appropriate independent variables to support motivation in learning behavior and performance, so that research activities should concentrate in promoting of the students' interesting and individual expressions or practices to improve higher of learning results.

1.2 Researcher should support students thinking for creating new knowledge in appropriate learning situations to enhance their physical health and mental health with successful learning for individual learner.

1.3 Researcher should encourage students' discussions to reflect and create their attempt and self-motivation for effective and successful learning.

1.4 Researcher should design appropriate assessment activity to encourage students find out and improve their learning abilities.

2. Recommendations for further study

The researcher has some suggestions as follows:

2.1 Should support research study based on integration ideas or principles about analytical thinking and critical thinking to enhance effective learning of students in appropriate activity management.

2.2 Research study should design anothers dependent variables to support divergent learning outcomes of students in feasible contexts and quality results for sample group.

2.3 In future research study can apply this instructional strategy for anothers samples in the same content and mixed with the key idea, effective medias or Artificial Intelligence to support successful instruction for various students.

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