THE USE OF COLLABORATIVE LEARNING TOOLS IN TEACHING ROUTINE SKILLS IN CHINESE MARTIAL ARTS

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Abstract

Collaborative learning methods using technology tools provide an opportunity to learn even outside the classroom. This flexible method is now exploited by many teachers across the world due to the global health crisis. Hence, the intention of this study is to investigate the effect of collaborative learning on the performance scores of 50 students enrolled in a Wushu class in a selected high school located in Beijing, China. Results show a positive increase in the post-evaluation results after a two-week utilization of collaborative tools. It can be said that technology is a tool that levels the playing field for students. Hence, this paper touches on the importance of equal access to various technologies for learning to ensure that students are given the opportunity they deserve.

Keywords

Wushu, Martial Arts Teaching, Collaborative Tools, Routine Skills

1. Introduction

The COVID-19 pandemic has changed the dynamics of classroom learning all around the world. For more than two years now, educators rely on online learning to deliver their lessons. In fact, Ricamora (2020) mentioned in her paper how classrooms were *"covidized"* during the pandemic. The Ministry of Education issued a memorandum to address the pressing need of students across the country due to the halt caused by the pandemic. Physical Education faced major difficulties transitioning to this kind of modality due to lack of educational tools, information, and challenges and constraints in conducting physical activities at home. Therefore, new online models and tools must be proposed to address these concerns. (Zheng et al., 2021)

Collaborative learning is not a new teaching method. Reports show that this method promotes collaboration, facilitates proactive learning, and encourages meaningful encounters in the classroom. With the use of collaborative learning tools, teachers can utilize this method to create a more flexible and interactive environment. (Banteli & O'Dwyer, 2017)

In this age of technology, there are many tools that support collaborative methods to extend learning in that class. Contrary to some beliefs, technology does not seclude learners in their own virtual space (Johnson & Johnson, 2014). Educational institutions are now focused on investing and collaborating with technology industries to roll out learning systems and platforms. Educators are now focused on training and development to keep up with the changing paradigms. Collaborative learning technologies are believed to build up knowledge and promote meaningful interactions among learners (Hsu & Shiue, 2018). It allows students to actively participate and work together to attain a common goal (Lutakova & Antala, 2017).

With the COVID-19 situation in China, martial arts teachers and coaches feel the need to utilize collaborative learning tools to maximize interaction among students. With proper facilitation and well-planned lessons, students can learn and work together to be able to perform specific tasks. The idea behind this method is to encourage them to help one another and share their knowledge and skills. Moreover, teachers can also promote ethical values and social skills such as respect, confidence, independence, accountability, leadership, and responsibility. (Lutakova & Antala, 2017)

The interest of this study is to investigate the effect of collaborative learning on students' performance in Martial Arts. Furthermore, it is expected to report the graded performances of

Martial Arts students in a selected university located in China prior to and after the usage of the university's collaborative online learning platform. The research contemplates the significance of this study in the field of Martial Arts. In the context of the university, there is a need to cover this type of research as technology has been neglected in performance-based subjects like Martial Arts. At the height of the pandemic, teachers were forced to stay home and resort to technology as a means to deliver the lessons. Therefore, the research asserts the need to explore this collaborative learning as a research gap.

2. Review of Literature

Cooperative or collaborative learning incorporates "*social interdependence theory which sets forth positive (cooperative) and negative (competitive) interdependence*" (Johnson & Johnson, 2014). It is a method that promotes social engagement and interactivity among learners (Brindley et al., 2009). Moreover, the theory of collaborative learning has four elements—situation, interactions, processes and effects—and their interrelationships characterize collaborative learning. Based upon a widely, but not universally, accepted theoretical paradigm that defines learning–knowledge as the outcome of social construction processes shared among participants in learning environments (Oh, 2011)

Collaborative technologies, as one of the most important applications of e-learning, have triggered a new wave of free online wikis, word processors, spreadsheets, presentation, and discussion forum software packages since their introduction in 2005. (Hsu & Shiue, 2018). Educational scholars are interested in collaborative technologies because they can provide students with a context/platform in which to discuss, exchange, and share their opinions and ideas, as well as collaboratively construct their own knowledge. (Hsu & Shiue, 2018)

In addition, project group communications and activities using Google Applications can be viewed as collaborative tasks within a social network environment, and thus instructional designers can serve as "weak social ties" and formulate activities and strategies to foster "strong social ties," which were associated with strong investments of time, reciprocity, and sharing among group members (Hsu & Shiue, 2018).

Moreover, cloud-based applications like Google Drive, Zoho, Etherpad, and Evernote support collaboration among students by sharing information, creating shareable links, editing as a group, and inserting comments and suggestions from each group member and teacher in charge.

Communication and teleconferencing tools such as Voov, WeChat, Skype, Viber, Skype, and Tencent can be utilized for meetings. During these sessions, the teachers or group leaders can open cameras, share screens, create polls, send students to other rooms, chat, and draw using a whiteboard. (Mallon & Bernsten, 2015)

There are numerous learning tools to choose from. Commercial software applications, open-source platforms, 3D virtual worlds, and massive open online courses (MOOCs) are examples of digital learning environments mentioned in the literature. Blackboard, Moodle, Sloodle, and Coursera are examples of online learning platforms. Desire2learn, Sakai, OLAT, eCollege, and Dokeos were among the other open-source platforms identified in the literature. (Banteli & O'Dwyer, 2017)

According to Humes (2015), collaborative learning projects promote dramatic increases in engagement, which leads to deeper understanding and higher-level thinking. These findings have only been observed in learning environments where students are taught how to work in collaborative groups, have a structured project with goals, roles, and outcomes, and receive regular feedback from teachers and peer group members on individual contributions and personal group effectiveness. However, Yu and Jee (2021) emphasized the importance of providing quality feedback, encouragement, and preparation are factors to consider for effective implementation.

3. Research Questions

This study aims to investigate the effect of collaborative learning on students' performance in a selected learning tasks in Martial Arts. Hence, it sought to answer the following questions:

1. What are pre-evaluation and post-evaluation result of the student-respondents based on the following criteria:

    1.1. Strength;

    1.2. Balance;

    1.3. Precision;

    1.4. Technique;

    1.5. Entrance and exit of the routine?

2. What is the significant difference between the pre-evaluation and post-evaluation results of the student-respondents in terms of:

2.1. Strength;

2.2. Balance;

2.3. Precision;

2.4. Technique;

2.5. Entrance and exit of the routine?

3. What is the significant difference between the pre-evaluation and post-evaluation results of the student-respondents?

Hypothesis

There is no significant difference between the pre-evaluation and post-evaluation results of the student respondents.

4. Methods

This descriptive quantitative research aims to determine the effect of collaborative learning tools in a virtual Physical Education classroom. The 50 respondents of this study are currently enrolled in Wushu class (Chinese Martial Arts). The researcher created an activity geared towards integrating collaborative learning with use of technological tools as aid. The group of 50 students were divided into 10 groups with 5 members in each group. The objective of the groups was to perform the *changquan* routine (long fist) and practice via synchronous online meetings on specific dates for two weeks making sure that the teacher in-charge was invited during every practice session. The teacher in-charge made regular visits to their virtual practices. The criteria for evaluation were thoroughly explained to them during the initial visits. After a 2-week practice, each member was asked to record the same routine and send it to a cloud-based drive for evaluation and final editing. All members were asked to evaluate the quality of the tasks submitted and were asked to critique their group mates' performances. In the event that the majority of the members felt that the submitted performance video was unsatisfactory based on the criteria set, the member was given an ample opportunity to redo and resubmit his/her part. Once all the members agreed on accuracy and quality of routine task, the assigned video editor consolidated the video clips for final editing and uploaded it on the university's online learning platform. The researcher evaluated the performance of each group and gave individual scores per member of the group based on a rubric for evaluation with following criteria: 1. strength; 2. balance; 3. precision; 4. technique; 5. entrance and exit of the routine. Each criterion is assigned with the highest of 20

points. Descriptive (mean, percentage) and inferential statistics (t-test) were used to represent the scores of the pretest and post and its significance value.

5. Results and Discussion

This section of the research study contains the numerical data that was gathered by the researcher during its rollout. Thus, it is presented with the use of tabular data and verbal interpretation, analysis, and extensive discussion.

Table 1: *Participants' Profile*

Gender	N	Percentage
Male	29	58%
Female	21	42%
Total	50	100%

(Source: Self)

This table pertains to the total number of respondents involved in this study. Results show that there are a total of 50 participants with 29 male or 58% and 21 or 42% female.

Table 2: *Pre-Evaluation and Post-Evaluation Results*

Criteria	Pre-evaluation Mean Scores	Post-evaluation Mean Scores
Strength	**8.96**	**10.32**
Balance	**8.96**	**9.24**
Precision	**9.58**	**10.44**
Technique	**9.78**	**10.82**
Entrance and exit of the routine	**9.12**	**11.30**
Overall Score	**46.38**	**62.56**

(Source: Self)

Table 2 shows the student's overall score during the pre-evaluation and post-evaluation activities. As seen in the table, the mean scores for each criterion (strength, balance, precision, technique, entrance and exit of the routine) were taken to compute the sum and generate the overall score of the class. Data shows that the student-respondents garnered a total score of 46.38 for pre-

evaluation and 62.56 during the post-evaluation. A positive increase was noted in the students' performances in the pre-evaluation and post-evaluation scores. This increase can be attributed to the monitoring, time allotment, and relevance of the task given to the students. These elements were mentioned in the MDE 601 and MDE 608 models proposed by Brindley et al., (2009). According to the model, collaborative group activities must contain facilitation of learner readiness, scaffolding methods, autonomy, clarity of task, promotion of community spirit, proper monitoring, delegation of appropriate tasks, and provision ample to accomplish the task.

Table 3: *Comparative Analysis of Pre-Evaluation and Post-Evaluation Result*

Treatment	N	df	M	SS	s^2	p-value	Interpretation
Treatment 1 (Pretest)	*50*	*49*	*46.5*	*1264.5*	*25.81*	.00001	Significant
Treatment 2 (Pretest)	*50*	*49*	*52.12*	*1723.28*	*35.17*		

(Source: Self)

When mean scores of pre-evaluation and post-evaluation were tested for difference, it was determined that there seemed to be a marked difference in the performance scores of the respondents (p-value = .00001) when the alpha is set at 0.05. Therefore, it can be gleaned that collaborative learning with the use of technology is indeed effective when students are guided by their respective teachers. It is evident that teachers are responsible for leading the collaboration and are expected to closely monitor the students by supporting their needs, setting up schedules, and creating engaging opportunities for learning (Bantelli et al., 2017). Martial Arts classes in Physical Education entail students doing physical exercise and activities. Zheng et al. (2021) pointed out that teachers must use applications and tools to enrich the quality of learning in the classroom. Similarly, it was found that the student's physical performances show improvement during the summative evaluation as seen on the progress report of individual students.

Table 4: *Pre-Evaluation and Post-Evaluation Per Category*

Category	Mean Pre-evaluation Score	Mean Post-evaluation Score	t-value	p-value	Interpretation
Strength	**8.96**	**10.32**	-2.9385	.004112	Significant
Balance	**8.96**	**9.24**	-0.48968	.625453	Not significant
Precision	**9.58**	**10.44**	-1.45636	.14849	Not significant

Technique	9.78	10.82	-1.99178.	.049178	Significant
Entrance and Exit	9.12	11.30	-4.44319	.000023	Significant

(Source: Self)

This table gives you a closer look at the overall performance of students in each category. The researcher takes this test further by running the comparison of each criterion by subjecting it to a t-test for related samples. The group comparisons showed varied results as shown in Table 3. The categories of strength, technique, entrance, and exit showed a *significant* increase in the scores (strength = 8.96 and 10.32 (p-value of .004112); technique = 9.78 and 10.82 (p-value of 0.49178); and entrance and exit = 9.12 and 11.30 (p-value of 0.000023). On the other hand, it can be noticed that the scores in the categories of balance (8.96 and 9.24 = p-value of .625453) and precision (9.58 and 10.44 = p-value of .14849) showed no significant improvement in the pre-evaluation and post-evaluation performances.

The result proves that collaborative learning tools play a significant effect on the performance of the students in the aspects of strength, technique, and entrance and exit routines. Thus, it suggested that Wushu instructors must utilize these tools and exploit their advantages to improve student performance. Although it did not alter all the factors required for students to collectively master routine due to the researcher's time constraint, the significant difference in scores demonstrated its efficacy on selected categories. The study of Tarun (2019) proves the importance of ICT-related collaborative tools in teaching. The proves that students have a positive response when use as a strategy in teaching.

6. Conclusion

The collaborative learning method in teaching martial arts provides positive outcomes in learning outcomes. When students are given proper guidance and facilitation by teachers, it can bring a more meaningful learning experience. Technology is a tool that levels the playing field for students. This paper touches on the importance of equal access to various technologies for teaching and learning. Based on the result, there was an increase in the evaluation score after a two-week practice. Hence, the research believes that collaborative learning must be fully explored as a strategy.

In a skill-based subject like Martial Arts, many teachers may feel adamant on the alternate methods in teaching. However, at this time of uncertainties, they must be led to realize that these tools must be part of their methods. Wushu teachers must be taught to be more creative in the use of ICT-related tools to be able to maximize participation especially in a remote learning modality. Cui (2016) argues that the effective use of multimedia technology promotes effective martial arts routine delivery. It enables students to use technology tools to access and monitor complex routines. With a collaborative platform, accessibility is thus no longer a concern. Wang (2019) refers to this as a "super-platform" where students easily navigate lessons whenever and wherever they are. As a future direction of this paper, the researchers recommend expanding the sample size by looking into the performance of students across year levels. With the wide plethora of collaborative tools, selections of more complex learning management systems, applications, and tools may be investigated to further prove their efficacy in the teaching of other skills-based courses. Although there was a marked improvement based on the results of the study, the research identified the limitations of the study in terms of the number of respondents and lessons covered during the testing phase. Therefore, the researchers recommend the expansion of the sample size to other locales and other lessons in the field of Martial Arts.

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