

Teaching Strategies for Cooperative Learning for Effectiveness of Harmony Skills in Group Piano

Yang Zhenyu¹, Narutt Suttachitt²

Abstract

This study aims to develop a music learning strategy for teaching harmony in group piano lessons to promote harmonic skills. Survey and interview music teachers in China and analyze data by content and thematic analysis. Teachers' assessment of cooperative learning strategies in harmonious teaching showed overall positive results. In particular, teachers generally agreed with the aspects of facilitating interaction, organization and management, cooperative skills, cooperative atmosphere and teacher's role. This suggests that the use of cooperative learning strategies in group piano classrooms is a recognized and effective teaching method. Individual teacher characteristics, especially teachers' gender, age, and educational background, significantly influenced the selection of cooperative learning strategies. Students gave positive comments on the skill level, musical expression, harmonic understanding, collaborative coordination, and learning interest in teaching harmony. Individual characteristics of students such as gender, age, and grade level have an impact on their assessment of the effectiveness of teaching and learning. The use of more comprehensive and targeted cooperative learning strategies is associated with higher levels of teaching effectiveness in group piano programs. The use of more comprehensive and targeted cooperative learning strategies is associated with higher levels of teaching effectiveness in group piano programs. This guides music educators and emphasizes the critical role of strategy selection in improving teaching effectiveness.

Keywords: *Teaching Strategies, Cooperative Learning, Harmony Skills, Piano, China.*

Introduction

Teaching strategies are essential means of achieving teaching goals in music teaching. Different teaching strategies affect students' learning effectiveness and motivation, making teaching effectiveness an essential indicator for assessing teaching results. In piano group lessons, using different teaching strategies may affect students' harmonic understanding and performance skills (Yin, 2020). Therefore, an in-depth study of the correlation between harmonic teaching strategies and teaching effects in piano group lessons can help optimize the teaching process and improve teaching quality.

Cooperative learning is an educational theory and teaching method that emphasizes cooperation, interaction, and co-construction of knowledge among students. In music education, cooperative learning can be regarded as an effective teaching strategy that helps improve students' learning outcomes and musical literacy (Xu, 2021). Cooperative learning in group piano lessons can promote communication and cooperation among students to solve problems in music theory and technique. In harmonic teaching, students can discuss and practice different harmonic techniques and phrases together, learn from each other, and share their experiences, thus deepening their understanding of music theory and harmonic construction. The core features of cooperative learning include promoting student interaction and cooperation, encouraging students to take joint responsibility, and fostering a sense of teamwork and cooperation (Yang, 2022). Cooperative learning can help students establish a good learning atmosphere in group piano lessons, enhance motivation, stimulate learning interest, and improve learning results. Meanwhile, teachers play an important role in cooperative learning (Qiu, 2019). They must guide students to cooperate effectively, organize learning activities, provide necessary support and feedback, and promote student communication and learning.

¹ Doctor of Philosophy Program in Music, Chakrabongse Bhuvanath International Institute for Interdisciplinary Studies (CBIS), Rajamangala University of Technology Tawan-Ok, Bangkok, Thailand. ORCID number: 0000-0002-2820-8562, Email: zhenyu.yan@rmutto.ac.th.

² Associate Professor Dr. Chakrabongse Bhuvanarth International International Institute for Interdisciplinary Studies, Rajamangala University of Technology Tawan-ok, Bangkok, Thailand, ORCID number: 0009-0002-6446-9572.

Research Purposes

This study aims to develop a music learning strategy for teaching harmony in group piano lessons to promote harmonic skills.

Literature Review

Harmony

Harmony is a crucial component of music that gives musical works rich color and depth. From classical to modern pop music, harmony is crucial in bringing harmony and beauty to music. Harmony is the musical effect produced by the simultaneous sounding of different pitches. It involves the simultaneous presence and interaction of different notes in music, creating rich sound textures and musical emotions (Chen, 2021). Harmony is not only a musical decoration but also an essential part of the structure and expression of a musical work. Through harmony, musical works can present complex emotions, moods, and themes, giving them depth and substance.

Harmony is an integral part of music and has an irreplaceable position in music education and music creation. In-depth research and education on harmony can promote improving students' music literacy and the inheritance and development of music culture (Mansoor and Paul., 2022). Therefore, it is of great significance to continue to explore and develop the theory and educational method of harmony to enrich the content of music education and improve the quality of music teaching.

There are various teaching methods for harmony, including theoretical explanation, listening training, and practical performance. In the theoretical explanation stage, teachers usually introduce the basic concepts, rules, and harmony techniques to help students establish a framework for understanding harmony (Qiu, 2020). On the other hand, listening training focuses on cultivating students' auditory perception of harmony and enhancing their listening skills by listening to different harmonic types and structures. The practical performance stage allows students to experience and apply the learned harmonic knowledge and skills through the actual performance of musical works.

Harmony teaching strategies include content-oriented, problem-solving, cooperative learning, and multimedia teaching (Gu, Y.T., 2017). Content-oriented strategies focus on teaching core content, such as basic concepts of harmony, chord construction, and vocal runs. Problem-solving strategies stimulate students' thinking and exploration by providing challenging problems and situations. Cooperative learning strategies emphasize interaction and collaboration among students to solve harmonic problems. Multimedia instruction, on the other hand, provides harmonic instructional materials and resources through various media formats such as audio, video, and interactive tools (Chen, 2021) showed that these instructional strategies positively impact students' ability to understand and apply harmony. For example, cooperative learning promotes students' ability to think and express themselves and improve their harmonic aural discrimination and analytical skills.

Cooperative Learning

Cooperative learning is a teaching method based on the theory of social constructivism, which emphasizes interaction, cooperation, and co-construction of knowledge among students. In cooperative learning, students work together in groups to solve problems, complete tasks, or achieve learning goals, thus enhancing their learning effectiveness and motivation.

Cooperative learning emphasizes interaction and cooperation among students. Students actively participate in learning activities through group discussion and joint practice to communicate and share ideas and experiences with others (Zhang, 2018). In cooperative learning, students co-construct knowledge through cooperation with others. Through discussions, debates, and problem solving, students can understand problems from different perspectives and promote in-depth understanding and mastery of knowledge. Cooperative learning emphasizes the setting and achieving expected learning goals (Zhu, 2018). Students

work together in groups to identify learning goals and reach those goals through cooperation, thus enhancing learning effectiveness and fulfillment. Cooperative learning helps promote students' critical thinking skills. Within a group, students must constantly think, analyze problems, and discuss and debate with others, thus developing critical thinking and problem solving skills (Xu, 2021). Cooperative learning helps develop students' teamwork skills. In a group, students must assist and support each other, reasonably allocate tasks and resources, and work together to solve difficulties and challenges to improve teamwork and communication skills.

Teaching modes of cooperative learning include interactive group discussion, cooperative learning tasks, project cooperation, and joint inquiry (Sumadi, 2022). In interactive group discussions, students explore issues, exchange ideas, and share reflections through group discussions. Cooperative learning tasks require group members to work together to accomplish a specific learning task and reach a common goal through collaboration and mutual support (Wang, 2017). On the other hand, project cooperation refers to students dividing their work into a project and working together to complete a more complex task. Co-inquiry refers to students exploring a topic or problem together and generating new knowledge and understanding through cooperation.

Cooperative learning helps develop students' teamwork, communication, and problem-solving skills. Students can share knowledge, exchange experiences, and solve difficulties and challenges by working with others. In addition, cooperative learning promotes students' independent learning and critical thinking skills, stimulates students' interest and motivation in learning, and enhances learning effectiveness and sense of achievement.

The Relationship Between Cooperative Learning and Music

The relationship between cooperative learning and music education has received much attention. Morgan et al. (2018) showed that cooperative learning promotes the development of students' musical skills. In music education, students typically improve their musical skills by collaborating with others in activities such as playing musical pieces and choral ensembles and participating in bands. Cooperative learning provides a positive social environment that motivates students to learn, enhances interaction and collaboration among students, and thus accelerates the improvement of musical skills (Liu, 2022).

Cooperative learning helps to promote students' understanding of music and their ability to express themselves. Through group discussion and joint analysis of music pieces and works, students can understand the connotations and emotions of music from different perspectives and improve their perception and grasp of music (Liang, 2020). At the same time, cooperative learning also allows students to express their musical views and emotions and improves musical expression ability.

Cooperative learning can stimulate students' creativity and innovation, which are essential in music creation and performance. By collaborating with others, students can share creativity and ideas, explore musical possibilities together, and create more prosperous and diverse musical works (Khalifeh et al., 2022). Cooperative learning also provides a platform for students to communicate and collaborate with others, thus stimulating the potential for musical creativity.

In summary, cooperative learning plays a vital role in music education. It promotes the development of students' musical skills, improves musical understanding and expression, stimulates musical creativity and innovation, enriches musical appreciation and communication, cultivates the spirit of musical teamwork, and provides necessary support for students' comprehensive literacy and personal development.

Correlation Between Teaching Strategies and Students' Learning Effectiveness

Teaching strategies, as teachers' instructional programs and methods in the teaching process, impact students' learning effectiveness. In piano group lessons, teaching harmony is a crucial task, and the selection and application of teaching strategies directly affect students' ability to understand and apply harmony.

Content-oriented teaching strategies focus on teaching core content, such as basic concepts of harmony, chord construction, and voice runs. Cai, W.F. (2018) showed that content-oriented teaching strategies can help students build a solid body of harmonic knowledge and improve their understanding and application of harmony. Juana (2019) found that through systematic teaching plans and progressive teaching arrangements, students could gradually master the fundamental laws of harmony and thus become more skillful in applying harmonic techniques in their performance.

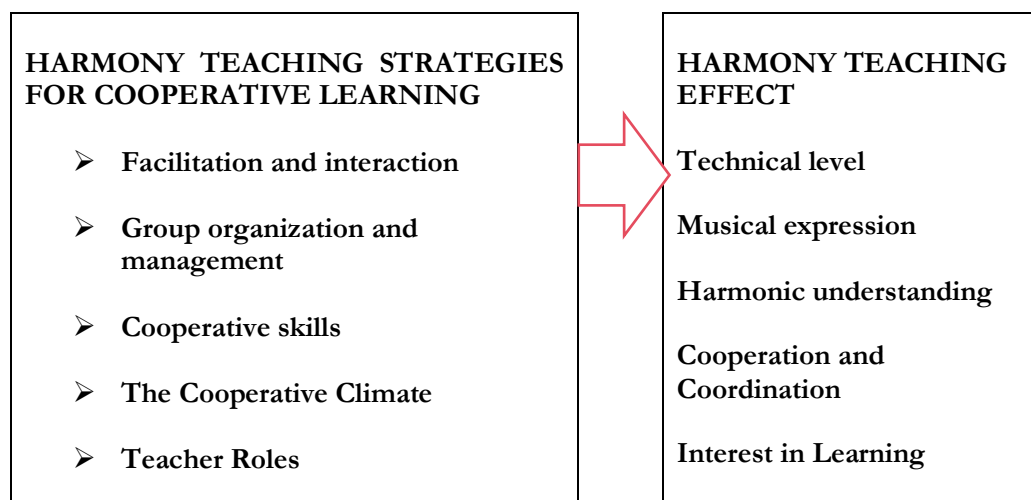
Different teaching methods play a crucial role in teaching harmony. Feng, H. (2019) found that teaching methods such as guided instruction, cooperative learning, and inquiry-based learning have different degrees of influence on students' learning effectiveness. Guided instruction emphasizes the teacher's guidance and direction of the students, which is suitable for students with a weak foundation in harmony, while cooperative learning and inquiry-based learning focus on the interaction and cooperation among students, which can promote students' more profound understanding and exploration of harmony.

Teachers play different roles in piano group lessons, such as instructor, counselor, and motivator. Research has found that the performance of teachers' roles directly impacts students' learning outcomes. He, X. Y. (2020) found that teachers who are full of enthusiasm and passion can stimulate students' interest and love for harmonious learning and increase their motivation to learn, while teachers who are responsible and meticulous can provide students with personalized learning guidance to help them overcome their learning difficulties and achieve better learning outcomes. The teacher can provide personalized learning guidance for students to help them overcome learning difficulties and achieve better learning results.

Teaching resources play an essential supporting role in harmony teaching. Li, J. (2020) showed that rich and diversified teaching resources can increase students' interest and motivation in harmony teaching and enhance their learning effectiveness. Liu (2020) showed that teaching resources such as music software, teaching videos, and multimedia courseware can present harmony concepts in images, sounds, and words, helping students learn more effectively, present harmonic concepts, and help students understand and master knowledge more intuitively.

The correlation between teaching strategies and student learning outcomes is a complex mechanism of influence. In addition to the factors mentioned above, the effectiveness of teaching strategies is also influenced by teachers' teaching experience and attitudes, students' learning styles, and motivation. Therefore, in optimizing the teaching of harmony, teachers should consider various factors and choose teaching strategies suitable for students to improve their learning effectiveness.

Conceptual Framework



Along the lines of this framework, the researchers examined the essential characteristics of teaching strategies for cooperative learning and teaching effectiveness of piano group lessons at Xinghai Conservatory of Music. Then, SPSS software was used to analyze the respondents' basic situation in terms of cooperative learning teaching strategies, as well as the differences of each variable at the levels of gender, age, education, and years of experience. The basic profile of the respondents in terms of teaching effectiveness and the differences in each variable at gender, age, and grade level combined with teachers' opinions. This paper statistically analyzes the relationship between teaching strategies for cooperative learning and teaching effectiveness in group piano lessons. The study's results were used to improve teaching strategies for cooperative learning, promote teaching effectiveness, and provide a research basis for developing and selecting intervention programs to enhance the effectiveness of voice teaching in piano group lessons.

Research Methodology

The population of this study consisted of faculty and students from the Singhai Conservatory of Music. The total number of teachers in this study is 633

This study will use a qualitative research methodology to enrich and deepen the understanding of harmonic teaching strategies for cooperative learning and teaching effectiveness in group piano lessons.

Scale Surveys. The questionnaire for teachers' instructional strategies for cooperative learning was divided into two parts; the first part was about teachers' demographics, and the second part was about instructional strategies for cooperative learning, which was divided into five dimensions, namely facilitation and interaction, group organization and management, cooperative skills, cooperative climate, and teacher's role. After data collection, another essential part of quantitative research is data analysis. In this study, statistical software was used for data entry and processing of the scale survey data; statistical methods such as t-test and ANOVA were used to verify the research hypotheses and to determine the extent to which different teaching strategies for cooperative learning affect the teaching effectiveness of students and voices. Through statistical analysis, the researcher obtained objective and credible findings to support the derivation and justification of the research conclusions.

Results

Table 1: Assessment Of Teacher Respondents on Their Teaching Strategies for Cooperative Learning for Teaching Harmony in Their Group Piano Lessons in Terms of Facilitation and Interaction

Indicators	Mean	SD	Meaning
1. the student actively assists and interacts with other students in group lessons to achieve musical harmony.	3.23	.856	Good
2. the student is willing to share musical ideas and creativity with other students.	3.25	.830	Good
3. the student regularly practices cooperatively with group members, especially in harmonic practice.	3.29	.858	Good
4. the student can coordinate musical performance effectively to ensure harmonic effectiveness.	3.23	.836	Good
5. students actively provide feedback and suggestions in collaborative performance.	3.17	.828	Good
6. students collaborate with group members to solve musical problems.	3.21	.852	Good
7. Students can play collaboratively to achieve musical goals.	3.22	.897	Good

Composite Mean	3.23		Good
-----------------------	-------------	--	------

Parameter limits: 3.51-4.00 Strongly agree/Excellent; 2.51-3.50 Agree/Good; 1.51-2.50 Disagree/Fair; 1.00-1.50 Strongly disagree/Poor

Table 1 shows the teachers' self-assessment of their cooperative learning teaching strategy in their group piano lessons. The overall mean was 3.23, which implies that the teachers had an overall positive attitude towards this teaching strategy. The mean range was between 3.17 and 3.29, indicating that the ratings of the indicators were relatively close overall. The standard deviation (S.D.) ranged from 0.828 to 0.897. The standard deviation measures the dispersion of values in a concentration of data, with lower standard deviations indicating a relative concentration of data points. Here, the relatively small range of standard deviations indicates that teachers were relatively consistent in their assessment of cooperative learning. This can also mean teachers have some consensus in assessing their instructional strategies.

The indicator with the highest mean was "the student regularly practices cooperatively with group members, especially in the area of harmonic practice," with a mean of 3.29. This indicates that teachers believe that students demonstrate positive attitudes toward cooperation in harmonic practice, which helps improve harmonic skills. This indicates that teachers believe that students demonstrate a positive and cooperative attitude towards harmonic practice, which helps to improve harmonic skills. The indicator with the lowest mean was "students actively provide feedback and suggestions in collaborative performance," with a mean of 3.17. This indicates that students provide feedback and suggestions to a relatively low degree in collaborative performance. This finding suggests that more attention needs to be paid to developing students' ability to communicate and interact effectively in collaborative performance.

The results in Table 1 are consistent with Lai's (2018) findings, which emphasize the importance of cooperative learning in music teaching. Cooperative learning has been shown to improve students' musical skills and promote teamwork positively. According to Wang (2020), regular group practice helped to strengthen students' skills, especially in complex music theory and techniques. This aligns with what was observed in this study, i.e., teachers perceived those students demonstrated a positive and cooperative attitude towards harmonic practice. Therefore, this becomes a worthy direction for future music teaching to promote more active student participation in collaborative performance. The effectiveness of cooperative learning in promoting harmonic skills in group piano lessons. This supports the current study and provides suggestions for future teaching practices and research directions.

Table 2. Assessment of Teacher Respondents on Their Teaching Strategies for Cooperative Learning for Teaching Harmony in Their Group Piano Lessons in Terms of Group Organization and Management

Indicators	Mean	SD	Meaning
1. students develop a plan and schedule for collaborative performance before the group lesson.	3.22	.853	Good
2. The group has a clear division of labor and musical tasks.	3.23	.863	Good
3. students can distribute vocal and musical tasks to promote harmony effectively.	3.22	.872	Good
4. students rationalize practice time to ensure smooth group performance.	3.26	.821	Good
5. group members can effectively manage musical resources such as scores and recordings.	3.21	.844	Good
6. students set goals and deadlines for musical collaboration.	3.16	.911	Good

7. students follow the rules and plans for musical collaboration.	3.21	.871	Good
Composite Mean	3.22	.716	Good

Parameter limits: 3.51-4.00 Strongly agree/Excellent; 2.51-3.50 Agree/Good; 1.51-2.50 Disagree/Fair; 1.00-1.50 Strongly disagree/Poor

The overall mean in Table 2 is 3.22, which is in the "Agree" category. This indicates that teachers generally felt that students performed well in team organization and management in collaborative learning. The standard deviation ranges from 0.716 to 0.911, which is relatively small. This indicates that teachers were more consistent in assessing students in these areas.

Among the specific indicators, students had the highest mean score (3.22) for planning and scheduling prior to collaborative performance, indicating that students were well prepared before teamwork. This is consistent with findings in music teamwork research regarding the importance of planning and preparation. Comparatively, students scored lower on setting goals and deadlines for music collaboration (3.16), an area that needs subsequent attention and reinforcement. This finding supports past research that effective music collaboration requires adequate preparation and clear division of labor and task allocation. This guides optimizing instructional strategies.

Relevant literature in music collaboration and group management supports the results in Table 2. Mao's (2019) study supports the scores for students' planning and scheduling prior to collaborative playing. In their study, many scholars emphasized the importance of pre-collaborative planning and organization for successful group playing (Sun, 2021).

The score (3.23) regarding the division of tasks within the group is consistent with Liu's (2020) findings. In group learning, students divided tasks and took on different responsibilities within the team, which often helped with organization and management. Students' scores in effectively distributing vocal and musical tasks to promote harmony (3.22) were also common elements in collaborative learning. Alruwaili and Templin (2022) showed that effective sharing of tasks among group members contributed to the achievement of musical harmonization and harmonic effects. This emphasizes the importance of student team organization and management in promoting harmonic skills, which are critical to successfully implementing instructional strategies.

Table 3. Assessment of Teacher Respondents on Their Teaching Strategies for Cooperative Learning for Teaching Harmony in Their Group Piano Lessons in Terms of Cooperative Skills

Indicators	Mean	SD	Meaning
1. Students are trained in musical collaboration skills to improve the effectiveness of musical collaboration.	3.24	.888	Good
2. students have musical communication skills.	3.24	.824	Good
3. students can effectively resolve conflict in musical collaboration.	3.19	.874	Good
4. students demonstrate the musical skills needed for collaborative performance.	3.19	.886	Good
5. students can flexibly adapt to their musical partners' musical styles and demands.	3.26	.825	Good
6. Students can play collaboratively to fulfill musical harmony requirements.	3.24	.858	Good

7. students demonstrate collaborative compositional skills in musical collaboration.	3.19	.858	Good
Composite Mean	3.22	.718	Good

Parameter limits: 3.51-4.00 Strongly agree/Excellent; 2.51-3.50 Agree/Good; 1.51-2.50 Disagree/Fair; 1.00-1.50 Strongly disagree/Poor

The results on collaborative skills in Table 3 show that the instructional strategies achieved positive results in developing students' collaborative skills. Students scored high (3.24) on training in music collaboration skills, which indicates that students received specialized training to improve their collaborative efficacy in music collaborative learning. Students demonstrated scores on musical communication skills (3.24), which is consistent with the findings of Feng (2019). Musical communication is a crucial aspect of collaborative learning, and effective communication helps to harmonize the different musical elements in a team, thus improving harmony skills (Juana, 2019). Additionally, students scored high in conflict resolution in musical collaboration (3.19), suggesting they possessed the skills to deal with team issues effectively. The results in Table 3 support the effectiveness of instructional strategies for improving students' harmonic skills, particularly in collaborative skills training, musical communication, and conflict resolution.

The results in Table 3 are supported by previous research related to collaborative skill development. Yang and Xu (2021) showed that students receiving specialized training in music collaboration can help improve their collaborative efficacy. Training can include specific skills in musical organization, coordination, and interaction that are critical for success in a team environment. This is supported by high scores regarding musical communication skills. Musical communication is crucial in collaborative learning and is essential for coordinating the different musical elements of a team and enhancing collaboration (Zhang, 2019).

Students scored higher in conflict resolution in music collaboration, consistent with previous research findings. Zhu (2020) showed that conflict resolution skills in collaborative learning are critical factors in successful teamwork. Having the ability to resolve conflicts ensures that teams can effectively overcome internal problems and helps to maintain smooth collaboration (Wang, 2022). Therefore, the findings in Table 3 are supported by relevant literature in theory and practice, emphasizing the positive role of instructional strategies in collaborative learning.

Table 4. Assessment of Teacher Respondents on Their Teaching Strategies for Cooperative Learning for Teaching Harmony in Their Group Piano Lessons in Terms of Cooperative Climate

Indicators	Mean	SD	Meaning
1. The group has a high musical atmosphere and mutual trust.	3.19	.854	Good
2. students perceive a positive atmosphere of musical collaboration.	3.21	.879	Good
3. students share musical goals and visions for music performance in group lessons.	3.20	.884	Good
4. students are willing to offer and accept help with music performance.	3.21	.858	Good
5. students share ideas and musical visions in musical collaboration.	3.21	.882	Good
6. group members respect and trust each other.	3.26	.854	Good
7. students create a positive musical climate in group performance.	3.22	.850	Good

Composite Mean	3.21	.730	Good
-----------------------	-------------	-------------	-------------

Parameter limits: 3.51-4.00 Strongly agree/Excellent; 2.51-3.50 Agree/Good; 1.51-2.50 Disagree/Fair; 1.00-1.50 Strongly disagree/Poor

The results in Table 4 show how positively students felt about the collaborative atmosphere. The overall mean was 3.21, indicating that students generally agreed that there was a positive musical climate and a feeling of mutual trust. The standard deviation of 0.730 indicates the data is relatively stable, reflecting the students' consistency in the collaborative climate assessment. The highest scoring indicator was "group members respect and trust each other," with a score of 3.26, which implies that students have a relatively high level of mutual respect and trust in their teams. The lowest scoring indicator was "there is a high level of musical atmosphere and mutual trust within the group," with a score of 3.19. However, the score is still in the "Although the score is still within the "agree" range slightly lower than the other indicators.

Researchers in music and arts education have been focusing on creating a positive learning atmosphere, which is essential for students' development. Qiu (2020) found that students were more willing to share ideas and express their musical visions in a positive collaborative atmosphere. This is consistent with the results in Table 4, where the indicator "students share ideas and musical visions in musical collaboration" scored 3.21, reflecting students' tendency to communicate positively in musical collaboration.

Other scholars have also emphasized the positive impact of a collaborative climate on student creativity and academic performance. For example, Yu (2020) noted a positive relationship between a collaborative environment and students' academic motivation and engagement. This is consistent with the results in Table 4, which show that students felt motivated to collaborate on music in a positive collaborative atmosphere, with a score of 3.21, reflecting students' positive attitudes towards teamwork.

Table 5. Assessment of Teacher Respondents on Their Teaching Strategies for Cooperative Learning for Teaching Harmony in Their Group Piano Lessons in Terms of Teacher Roles

Indicators	Mean	SD	Meaning
1. I play a primary instructional role in group piano lessons.	3.26	.884	Good
2. I actively promote group musical cooperation and interaction.	3.26	.839	Good
3. the way I encourage students to ask questions and facilitate musical discussions during musical performances.	3.22	.867	Good
4. I provide a means of musical feedback in collaborative music performance.	3.22	.855	Good
5. I establish clear goals for musical collaboration, especially regarding harmony.	3.21	.855	Good
6. I provide guidance and support for musical collaboration.	3.26	.874	Good
7. I stimulate students' musical creativity in musical collaboration.	3.29	.823	Good
Composite Mean	3.25	.713	Good

Parameter limits: 3.51-4.00 Strongly agree/Excellent; 2.51-3.50 Agree/Good; 1.51-2.50 Disagree/Fair; 1.00-1.50 Strongly disagree/Poor

In Table 5, the assessment results of the teacher's role show that overall, the teacher's role in group piano lessons scored high. Specifically, teachers scored the highest on the indicator "I play a primary instructional role in group piano lessons" at 3.26, indicating that teachers play a primary instructional role in group piano lessons. This is consistent with research in music education, where teachers are often seen as a critical factor

in guiding student learning. In addition, other indicators such as "I stimulate students' musical creativity in musical collaboration" and "I provide guidance and support for musical collaboration" were also found support for musical collaboration" also received relatively high scores of 3.29 and 3.26, respectively, indicating that teachers also performed well in stimulating students' musical creativity and providing support for musical collaboration. The relatively small range of standard deviations suggests that teachers' performance in these roles is generally consistent and that students have a high level of agreement with the teacher's role.

The results in Table 5 are consistent with Zhang's (2020) findings. The role of the teacher in the collective classroom has been a focus of scholarly attention in research in music education. According to Gillies et al. (2023), the teacher's role in the music classroom goes beyond traditional knowledge transfer to encompass all aspects of stimulating students' creativity, facilitating collaboration, and providing comprehensive guidance. Han (2018) also pointed out that in collaborative learning environments, the teacher's role needs to shift more towards that of a guide and facilitator, encouraging students to learn and share. In addition, teachers encouraging students to ask questions and participate in musical discussions is also widely emphasized in collaborative learning environments (Huang, 2021). Song (2021) emphasized the critical role of teachers in collaborative learning environments as both knowledge transmitters and facilitators and guides.

Table 6. Summary Table on The Assessment of Teacher Respondents on Their Teaching Strategies for Cooperative Learning for Teaching Harmony in Their Group Piano Lessons

Indicators	Mean	SD	Meaning
Facilitation and interaction	3.23	.704	Good
Group Organization and Management	3.22	.716	Good
Cooperative Skills	3.22	.718	Good
Cooperative Climate	3.21	.730	Good
Teacher roles	3.24	.713	Good
Over-all Mean	3.23	.687	Good

Parameter limits: 3.51-4.00 Strongly agreed/Excellent; 2.51-3.50 Agree/Good; 1.51-2.50 Disagree/Fair; 1.00-1.50 Strongly disagree/Poor

Table 6 shows the overall assessment of teachers' adoption of cooperative learning strategies in group piano lessons. The overall mean shows that the teachers' teaching strategies achieved about 3.2 on each dimension, while the overall mean was 3.23. The relatively small range of standard deviations indicates that the teachers were more consistent in their assessment of adopting collaborative learning strategies on all dimensions and performed well overall.

Across the dimensions, teachers performed most significantly in Facilitation and interaction, with a mean of 3.23 and a standard deviation of 0.704. This suggests that teachers performed well in encouraging students to interact positively, share musical ideas, and provide feedback in collaborative performance.

Meanwhile, teachers also performed exceptionally well in Group Organization and Management (GOM) and Collaborative Skills (C.S.), with 3.22 and 3.22, respectively, with standard deviations of 0.716 and 0.718. This indicates that teachers are doing an excellent job in helping students to organize and collaborate and develop collaborative skills effectively are doing well.

Teachers' performance was relatively consistent regarding Cooperative Climate and teacher roles, with means of 3.21 and 3.24 and standard deviations of 0.73 and 0.713, respectively. This suggests that teachers are balanced in creating a positive musical climate and playing various roles in their teaching.

The results in Table 6 are consistent with Wang's (2019) study, which emphasized the importance of adopting collaborative learning strategies in group music instruction. Li (2019) demonstrated that facilitating students' interactions and collaborations in music is essential for developing their harmonic skills. For example, Hao (2022) found that introducing collaborative learning in music education increased student engagement and improved learning outcomes. In addition, Chen's (2021) study also showed that effective group organization and management are crucial for collaborative music learning. Guo's (2022) study pointed out that through clear division of labor and practical assignment of tasks, the collaborative efficiency of the members in a group can be improved. Ma's (2022) study found that developing students' collaborative skills can help improve their performances in group music. Shi (2022) mentioned that a positive group atmosphere can motivate students to work together and help them achieve common musical goals better. Regarding "teacher roles," teachers excelled in leading roles and stimulating students' creativity. This is consistent with Xie's (2019) study, which shows that teachers play a critical guiding role in cooperative learning by providing direction and support to students.

Conclusions

Based on the presented findings of the study, the researcher came up with the following conclusions.

Teachers' assessment of cooperative learning strategies in harmony teaching showed positive results. In particular, teachers generally agreed with facilitating interaction, organization and management, cooperative skills, cooperative atmosphere, and teacher's role. This suggests that using cooperative learning strategies in group piano classrooms is a recognized and effective teaching method.

Individual teacher characteristics, especially teachers' gender, age, and educational background, significantly influenced the selection of cooperative learning strategies. The study found that teachers with different characteristics differed in implementing strategies and assessing their effectiveness. This guides future training and emphasizes the importance of individual differences in educational practice.

Students commented positively on the skill level, musical expression, harmonic understanding, collaborative coordination, and learning interest in teaching harmony. This indicates that collaborative learning strategies significantly stimulate students' interest in learning and improve their skill level and musical expression.

Students' individual characteristics, such as gender, age, and grade level, impact their assessment of the effectiveness of teaching and learning. The study revealed that students with different characteristics assessed teaching effectiveness differently. This emphasizes the importance of considering individual differences in music education.

more comprehensive and targeted cooperative learning strategies are associated with higher teaching effectiveness in group piano programs. This guides music educators and emphasizes the critical role of strategy selection in improving teaching effectiveness.

References

- Alruwaili, A. R., & Templin, M. (2022). Importance of Implementing the Cooperative Learning Approach. *American Journal of Educational Research*(4). doi:10.12691/EDUCATION-10-4-8.
- Cai, W. (2018). Practical application of different teaching methods in harmony teaching (Master's thesis, Northeast Normal University). <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201801&filename=1013145164.nh>
- Chen, R. (2021). Research on the trilogy teaching mode of "writing, creating and performing" in college harmony class. *Art Review* (22), pp. 87–89.
- Feng, H. (2019). The role of piano works in piano teaching in colleges and universities. *Northern music* (16), pp. 108–110.
- Feng, Y. (2019). Discussion on the cultivation method of application ability in harmony teaching. *Senka (Next)*(09), 135.

- Gillies, R. M., Millis, B., & Davidson, N. (2023). *Contemporary Global Perspectives on Cooperative Learning: Applications Across Educational Contexts*. Taylor and Francis.
- Guo, J. (2022). Exploring and thinking about piano group lessons for music teacher training majors in colleges and universities. *Chinese Literary Artist* (12), pp. 124–126.
- Hao, D.D. (2022). Research on Teaching Practice of Higher Teacher Harmony Course. *Artist*(12), pp. 109–111.
- Juana. (2019). Analysis of the role of harmony in piano teaching. *Northern Music* (08), p. 121.
- Khalifeh, A. J., Almousa, N. A., Ammari, R. M., & Jarrah, L. A. (2022). Students' Attitudes Towards Applying Cooperative Learning Strategy at Amman Arab University. *Journal of Language Teaching and Research* (5). doi:10.17507/JLTR.1305.12.
- Lai, M. F.. (2018). Analyzing the use of harmonic theory in college piano teaching. *Tomorrow's Style* (03), 237.
- Li, X. (2020). Research on blended learning in group piano lessons in colleges and universities. *Popular Literature and Art*(08), pp. 220–221.
- Li, J. (2020). The use of harmonic theory in piano teaching in colleges and universities. *Art View* (35), pp. 103–104.
- Liang, S. (2020). The use of harmonic theory in piano teaching in colleges and universities. *Voice of Yellow River* (10), pp. 89–90. doi:10.19340/j.cnki.hhzs.2020.10.049.
- Liu, S. J. (2020). Analyzing the Problem of Teaching Content Mode of Piano Group Lessons in Colleges and Universities. *Drama Home* (31),95–96.
- Liu, X. (2020). The use of case teaching in harmony teaching—A review of harmony. *Science and Technology in Chinese Colleges and Universities* (11), p. 112. doi:10.16209/j.cnki.cust.2020.11.037.
- Liu, Y. (2022). Research on teaching piano group lessons in colleges and universities. *Life and Companionship*(19), pp. 38–40.
- Mansoor, M., & Paul, J. (2022). Mass prestige, brand happiness and brand evangelism among consumers. *Journal of Business Research*, 144, 484–496.
- Mao, H. (2019). Ruminating the existing problems in the teaching of improvisational accompaniment and harmony. *Masterpieces*(08), p. 73.
- Morgan, B. M., Keitz, R. A., & Wells, L. (2018). Quantitative And Qualitative Results: Cooperative Learning Implementation With Hispanic Community College Freshmen. *Journal of International Education Research (JIER)*(4).
- Qiu, X.N. (2020). Harmonics teaching mode and reform path for cultivating application-oriented talents. *China Ethnic Expo* (06), pp. 42–43.
- Qiu, X.N. (2019). New thinking about the teaching of harmony in music majors in colleges and universities. *Drama Home* (33), p. 156.
- Song, M. (2021). Historical awareness in the teaching of harmony. *Qilu Yiyuan* (04),25–30.
- Sumadi, I. (2022). A Study on the Influence of Competence Components on Interaction Process and Learning Effect in Cooperative Learning Groups. *Journal of Educational Research and Policies*(11). doi:10.53469/JERP.2022.04(11).02.
- Sun, G. J. (2021). The pain point and thinking of teaching harmony classes in colleges and universities in the new era. *Drama House*(28),62–63.
- Wang, D. (2019). Discussion on Informatization Teaching Strategy of Higher Vocational Piano. *Voice of Yellow River* (12), p. 110. doi:10.19340/j.cnki.hhzs.2019.12.079.
- Wang, X. (2022). Analysis of the application of harmony in college piano teaching. *Art Review* (06),129–131.
- Wang, G. (2022). Teaching Strategy of Piano Improvisation Accompaniment for Music Education Majors in Colleges and Universities. *Drama House*(20), pp. 166–168.
- Wang, P. (2017). Discussion on the use of harmonic theory in piano teaching in colleges and universities. *Northern Music* (18), p. 172.
- Xie, H. (2020). Trial analysis of the Orff teaching mode of piano group lessons for preschool education majors. *Music Life* (12), pp. 70–71.
- Xie, X. (2021). Reform and innovation of teaching harmony courses for music majors. *Academic and practice* (02), pp. 234–238.
- Xu, F. (2021). Common Problems and Optimization Countermeasures in Piano Group Class Teaching. *Daguan (Forum)*(05),150–151.
- Yang, Z. Y. (2021). Reflections and Prospects of Applied Harmony Teaching Methods. *Art Research* (02), pp. 122–123. doi:10.13944/j.cnki.ysyj.2021.0109.
- Yang, Z. (2022). Analysis on the innovation of piano teaching in colleges and universities oriented to quality cultivation. *Art Review*(23), pp. 104–108.
- Yang, Z.Y. (2021). Analysis of the application of harmonic theory in piano teaching in colleges and universities. *Art Review*(14), pp. 113–115.
- Yin, Z.F. (2020). How to cultivate students' improvisation accompaniment ability in piano teaching. *Modern Vocational Education*(11), pp. 46–47.
- Yu Jia'an. (2020). How to improve the effectiveness of college piano group lesson teaching. *Drama House* (29), pp. 94–95.
- Yu, W.J. (2020). Reflections on the Application of Harmony to Piano Improvisation Accompaniment. *Voice of Yellow River* (10), pp. 42–43. doi:10.19340/j.cnki.hhzs.2020.10.022.
- Zhang, J.X. (2022). Discussion on the Dilemma and Strategy of Higher Vocational Piano Group Class Teaching. *Times Report (Benliu)*(10), pp. 132–134.
- Zhang, S. (2020). Reflections on the Disconnection between Harmony Teaching and Actual Composition Phenomenon. *Journal of Tianjin Conservatory of Music* (01), pp. 26–31. doi:10.16274/j.cnki.cn12-1280/j.2020.01.005.
- Zhang, S. (2019). Exploration of the creation of harmonic thinking in the teaching of Harmonics (above). *Northern Music* (23), pp. 137–138.

- Zhang, X. (2018). The application of harmony theory in piano performance teaching. *Northern Music* (14), p. 215.
- Zhang, X.L. (2018). The application of harmonic theory in piano teaching in colleges and universities. *Voice of Yellow River* (07), pp. 95–96. doi:10.19340/j.cnki.hhzs.2018.07.066.
- Zhang, X. (2020). Exploration of effective teaching mode of group piano class in higher vocational preschool education. *New Curriculum Research*(33), pp. 95–96.
- Zhang, X.L. (2019). Effective application of harmonic theory in college piano teaching. *Curriculum Education Research* (30), pp. 230–231.
- Zhang, Y. (2019). Analysis of the role of harmonic analysis in piano teaching in higher education institutions. *Senka (Next)*(05),151.
- Zhu, H. Y. (2020). The use of piano group lessons in teaching. *Senka (Next)* (11), 131-132.
- Zhu, W.G. (2018). Exploration of teaching strategies in piano group lessons. *New Curriculum Research (Lower Decade)*(11), pp. 69–70.