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Effects of Open Teaching Model on Dance-Major College Students' Inquiry Skills and Learning Effectiveness

Lai QIONGQIONG¹, Jin QIU²

Abstract

Regarding the diversified reform of school education, cultivating students' abilities is the primary task of the teaching trend. To enhance students' learning effectiveness and have them present self-directed learning and lifelong learning skills, teachers should appropriately apply strategies to guide students' self-directed learning. In this case, the role of teachers should be changed from major instructors to leaders of students' self-directed learning. Dance-major college students in China are selected as the research objects. Total 142 valid samples are preceded the 16-week experimental teaching (total 32 sessions) with open teaching model for a term. The research results show that 1.students, through open teaching could achieve diversified effect on learning topics, 2.open teaching also induce dance-major college students' inquiry skills and interests in thinking in the process with open learning strategies, and 3.teachers using open-ended questions, through problem-posing activities, could more deeply understand the correctness of dance-major college students applying connections to problems in knowledge and reality. According to the results to propose discussions and suggestions, it is expected to understand students' learning progress, according to the lessons with open teaching model, to have students' present problem-finding & problem-solving skills and promote students' learning effectiveness for the reference for promoting open teaching model in the future.

Keywords: open teaching model; inquiry skills; learning effectiveness; co-learning ability; evaluation.

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Introduction

Bruhweiler & Vogt (2020) stated that we were entering a new era; skills delivered to children in traditional course contents could be easily found out answers nowadays. Teachers therefore should work hard to create meaningful and open learning environment as well as gradually connect students' natural ideas about problems to situational knowledge.

To enhance students' learning effectiveness as well as have them present self-directed learning and lifelong learning skills, teachers should appropriately apply strategies to guide students' self-directed learning. In this case, the role of teachers should be changed from major instructors into leaders of students' self-directed learning. Learning is no longer the pure knowledge access process, but allows children learning active learning. In addition to the acquisition of basic knowledge, teachers have to master in enhancing students' literacy, promoting the knowledge seeking desire, and promoting the learning effectiveness to achieve win-win-win among students, parents, and teachers. For this reason, it is important that teachers have to keep the enthusiasm in education, move the professional skills and innovative thinking ability with the times, effectively guide students' learning through curriculum planning, and judge students' individual differences. Innovative teaching approaches and multiple assessment methods have attracted the attention of schools, teachers, parents, and students; teaching would move towards life problems in the future. Teachers, through text regulations and meanings, cultivate students' deep thinking and logical thinking abilities, enhance students to perceive the importance of contexts, and cultivate students' problem-solving skills. Open teaching model emphasizes students' practice performance and accumulation of learning process, integrates knowledge, skills, and attitude, as well as stresses on context learning (Ryan & Deci, 2020). With open teaching model, teachers connect curriculum planning and life situations for students' reflection, cultivating the inquiry and thinking skills, and enhancing learning effectiveness through questioning and discussion, as well as take care of teachers' teaching quality to guide students' co-learning ability. Accordingly, the effect of open teaching model on dance-major college students' inquiry skills and learning effectiveness is discussed in this study, expecting to understand students' learning progress, according to the lessons with open teaching model, and reinforce the insufficiency so as to have students present problem-finding and problem-solving skills as well as promote the learning effectiveness for the reference for promoting open teaching model in the future.

Literature review

Sarvan & Muslu (2022) mentioned that open teaching approach was student centered and teachers stressed on training and encouraging students and adopting different problem-solving strategies to receive the answers for open-ended questions, rather than focusing on the answers of questions. In this case, teachers should have the open spirit in mind to accept students' problems-solving process and problem-solving results. Gaughwin & Ellice-Flint (2021) indicated specific teaching suggestions to guide students preceding open teaching model. (1) *Preparation*: Teachers assisted students in preparing sufficient background knowledge and skills for inquiring certain topics or problems and allowed students developing problems and forming questions; (2) *Trial*: Students attempted to present problems with questions and propose hypotheses and trials; (3) *Evaluation*: Teachers evaluated students' responses and, without publicizing names, explained proper and improper examples; (4) *Model*: Teachers and students collaboratively built suitable model for inquiring the topic or problem; (5) *Application*: Students could apply knowledge and skills in the inquiry process to the next topic. Agustin & Ayu (2021) listed five steps for open teaching model: (1) Having students contact problems, events, or phenomena, connect to their known facts, and create the cognitive conflict to enhance the learning; (2) Through the hands-on practical experience to have students explore the ideas, form hypotheses and test hypotheses, and finally solve problems and propose reasonable explanations; (3) Allowing students analyzing and interpreting the experimental results and building models; (4) Allowing students inferring the comprehension and applying to new situations; (5) To criticize the learned knowledge and review the way of learning. Accordingly, the hypothesis that open teaching model presents significantly positive effects on inquiry skills (H1) is proposed in this study.

Open teaching approach is suitable for students with any levels and attributes, as teachers, aiming at the same open-ended question, are open to the answer-seeking routes. Such a teaching approach therefore appears flexible space and allow the participation of students with different levels. High-achievement students could solve problems by finding out several or simple methods, while low-achievement students could solve problems with the way they could comprehend and apply. Each student therefore could satisfy individual differences. Open teaching approach aims to encourage and induce students' thinking to smoothly acquire new knowledge. Teachers, on the other hand, would affirm and timely appreciate each student's problem-solving methods (Xiuwen & Razali, 2021). Strategies adopted by students might be good or bad in teachers' eyes, but there is no difference in children's thinking process; it is worth affirmation as well as the problem-solving process and answers are reasonable (Heinrich & Green, 2020). When students make mistakes in problem solving, teachers should not excessively blame, but should consider the mistake as a potential assistance in the learning process to further understand students' thinking, analyze the mistake in the concept

process, and help them make corrections. Teachers, through the open teaching process, allow each student applying personal experiences, following personal strategies, and proposing individual ideas for problem solving. Such participation would enhance students' learning interests and confidence and allow students stabilizing or clarifying the knowledge concept through reasoning and verifying old knowledge. Under such a teaching approach, students have more opportunities to solve problems with the comprehension and knowledge (Brothers *et al.*, 2020). As a result, the hypothesis that open teaching model shows remarkably positive effects on learning effectiveness (H2) is proposed in this study.

Scientific inquiry is regarded as a problem-solving training, which stresses on problem-solving process and results and eventually expects to cultivate independent problem solvers. It is necessary to comprehend evidence in order to involve in the professional knowledge for scientific research. Barbara & Philip (2020) considered that true inquiry had to cover evaluation evidence and conflict communication evidence. There was not empirical research on the effect of scientific inquiry skills on students' evidence concept. Hydrie *et al.* (2021), with inquiry-directed method, aimed to: (1) cultivate students' interests in science, (2) provide opportunities for students collecting evidence with proper equipment, (3) solve problem with logic and evidence, (4) encourage students' deeper research to make more detailed explanations, and (5) write scientific explanations based on evidence that evidence concept was hidden in the comprehension of scientific inquiry process. Flores *et al.* (2021) suggested that teachers had to promote students' scientific inquiry skills, starting from emphasizing the comprehension of evidence concept, and encourage students to reinforce the inquiry skills through defense argument. Wing Mui So regarded judging the validity and reliability of scientific evidence as the core ability of procedural knowledge in students' scientific inquiry process that true scientific inquiry was closely related to evidence concept to effectively enhance students' learning effectiveness. The following hypothesis that inquiry skills reveal notably positive effects on learning effectiveness (H3) is therefore proposed in this study.

Methodology

Research structure

Summing up above literature review, the conceptual structure (Figure 1) is drafted for this study to discuss the effect of open teaching model on inquiry skills and learning effectiveness.

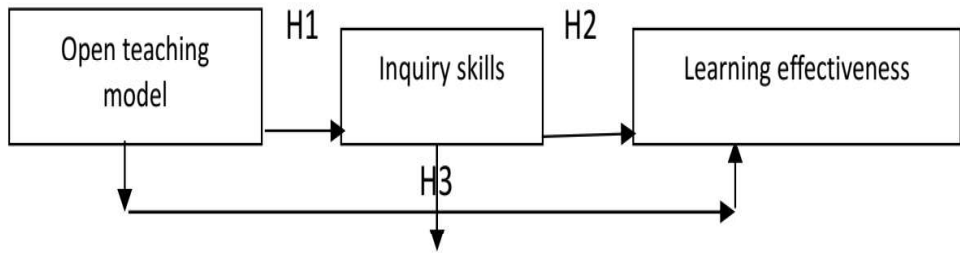


Figure 1. Conceptual structure

Measurement research variable

1. Inquiry skills. Referring to Chou, Li, & Ke *et al.* (2021), inquiry skills contains two dimensions in this study:

- Process skills: referring to students’ performance on various scientific processes and skills.
- Thinking ability: student performance on inquiry process.

2. Learning effectiveness. Referring to Lim (2022), learning effectiveness covers two dimensions in this study:

- Learning effect: including test performance, time for schedule completion, term scores.
- Learning gain: containing learning satisfaction, achievement, and preference.

Research object and sampling data

Open-ended question materials with open teaching model is designed for this study, and the effects of open teaching model before/after the practice on dance-major college students’ inquiry skills and learning effectiveness are compared. Dance-major college students in China are selected as the research objects. Total 142 valid samples are preceded the 16-week (total 32 sessions) experimental teaching with open teaching model. The collected questionnaire is analyzed the data with SPSS, and factor analysis, reliability analysis, and T test are utilized for testing hypotheses.

Table 1. Research object

male	female	total
36	106	142

Teaching design

The teaching experiment is preceded for 16 weeks. The course explanation, grouping, and evaluation standards are preceded in the first week; the open teaching model is preceded in class from the second week; and, the review and test are preceded in the last week.

Analysis

Analysis of variance is utilized in this study for discussing the effect of open teaching model on inquiry skills and learning effectiveness.

Results

Reliability and validity analysis

Inquiry skills, through factor analysis, are extracted two factors in this study. The results are shown in Table 2.

Table 2. Factor analysis of inquiry skills

factor	eigenvalue	α	variance explained	cumulative variance explained
process skills	3.751	0.93	41.753%	41.753%
thinking ability	2.627	0.95	33.581%	75.334%

Learning effectiveness, through factor analysis, is extracted two factors in this study. The results are shown in Table 3.

Table 3. Factor analysis of learning effectiveness

factor	eigenvalue	α	variance explained	cumulative variance explained
learning effect	3.196	0.91	29.547%	29.547%
learning gain	4.217	0.96	56.184%	85.831%

Variance analysis of open teaching model in inquiry skills

According to T test analysis to discuss the effect of open teaching model on inquiry skills, i.e. analysis and explanations before/after teaching, higher inquiry skills appear after teaching (3.87) than before teaching (3.32) and thinking ability reveals after teaching (4.05) than before teaching (3.48) that H1 is supported.

Table 4. Variance analysis of open teaching model in inquiry skills

variable		F	P	Scheffe post hoc
open teaching model	process skills	31.255	0.000**	after teaching (3.87)>before teaching (3.32)
	thinking ability	37.181	0.000**	after teaching (4.05)>before teaching (3.48)

Note: * stands for $p < 0.05$, ** for $p < 0.01$.

Variance analysis of open teaching model in learning effectiveness

According to T test analysis to discuss the effect of open teaching model on learning effectiveness, i.e. analysis and explanations before/after teaching, Table 5 shows higher learning effect after teaching (3.94) than before teaching (3.51) and higher learning gain after teaching (4.13) than before teaching (3.62) that H2 is supported.

Table 5. Variance analysis of open teaching model in learning effectiveness

variable		F	P	Scheffe post hoc
open teaching model	learning effect	35.628	0.000**	after teaching (3.94)>before teaching (3.51)
	learning gain	37.906	0.000**	after teaching (4.13)>before teaching (3.62)

Note: * stands for $p < 0.05$, ** for $p < 0.01$.

Correlation analysis of inquiry skills and learning effectiveness

(1) Correlation analysis of inquiry skills and learning effect. To test H3, the analysis results, Table 6, reveals significant effects of process skills ($\beta=2.163^{**}$) and thinking ability ($\beta=2.271^{**}$) on learning effect.

(2) Correlation analysis of inquiry skills and learning gain. To test H3, the analysis results, Table 6, shows remarkable effects of process skills ($\beta=2.352^{**}$) and thinking ability ($\beta=2.438^{**}$) on learning gain. H3 is therefore supported.

Table 6. Analysis of inquiry skills and learning effectiveness

dependent variable→	learning effectiveness			
independent variable↓	learning effect		learning gain	
inquiry skills	β	P	β	P
process skills	2.163**	0.000	2.352**	0.000
thinking ability	2.271**	0.000	2.438**	0.000
F	33.275		41.289	
significance	0.000***		0.000***	
R2	0.297		0.381	
adjusted R2	0.263		0.362	

Note: * stands for $p < 0.05$, ** for $p < 0.01$.

Data source: self-organized in this study

Discussion

Open teaching allows students solving problems through open-ended questions. Dance-major college students being able to freely develop solutions within reasonable range and logic is considered as correct answers. In this case, each dance-major college student could choose individually comprehensible methods and process to solve problems; and, time for solving problems would change with individuals. Some students could rapidly evaluate problem-solving strategies to easily solve problems, while parts of dance-major college students require longer time for thinking or spend more time on problem-solving steps. In this case, some dance-major college students might solve problem more slowly or cannot smoothly solve problems. However, teachers should accept and respect the time difference in solving open-ended problems and guide or prompt students who need more time for solving problems or do not find out problem-solving strategies, as well as assist such students, through other classmates' strategies, in finding out problem-solving strategies suitable for themselves. Consequently, teachers could adopt open-ended problems for teaching. With open question-posing, process, and results, dance-major college students could more freely and interested in attempting problem solving to achieve the goal of active learning. Teachers should tress on the selection of open-ended course materials being life, interesting, and creative. Course points could develop dance-major college students' inquiry methods and thinking process so that dance-major college students could find out problems and solve problems

even in familiar issues, to discuss solutions with classmates and enhance sharing and expressing skills. Active inquiry in daily life environment could expand new vision and acquire the most effective concept change through personal observation and experience.

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Conclusion

The research findings show that open teaching, in the open learning strategies process, also induces dance-major college students' inquiry skills and interests in thinking. Teachers use open-ended questions, through problem-posing activities, could more deeply understand the correctness of dance-major college students connecting knowledge and problems encountered in reality and test whether dance-major college students simply imitate the strategy to solve problems without fully understanding the basic concept of knowledge. Dance-major college students, when solving open-ended problems, could apply known knowledge and experience in life to solve problems, take teamwork to collaboratively solve open-ended problems, irritate the creativity, and learn the importance of cooperation. Moreover, dance-major college students could know other recording methods

through discussions among classmates and learn others' precise and convenient recording methods to become the usable strategies in the next problem solving for more convenient and time-saving records.

Suggestions

According to the experimental results, the following suggestions are proposed in this study.

- Teachers in different domains are encouraged to provide relevant curriculum planning, teaching and demonstration observation in schools; meanwhile, such teachers' opinions could enhance teachers' peer teamwork. Administrative units in schools could hold relevant studies and frequently arrange dance-major teachers' participation. After all, the role of dance-major teachers appears large change in the new curriculum inquiry and practice; they are no longer dominant players, but facilitators.
- Dance-major teachers, during the teaching, should encourage dance-major college students to present opinions and share problem-solving strategies as well as guide and assist in opinion clarification for students cultivating the oral expression courage and skills. Dance-major teachers could design inquiry situations using life issues with less background knowledge to train dance-major college students' data and theory integration ability for enhancing data processing experience.
- Dance-major teachers could apply teamwork to solve open-ended problems so as to induce more creativity from dance-major college students' cooperation and interaction. Cooperative learning is the strategy being able to enhance dance-major college students' effective learning, allowing each dance-major college student playing different roles, and having dance-major college students be aware of the importance and responsibility for the team. Besides, proper team competition could create learning atmosphere to have students be enthusiastic in open teaching activities and experience learning interests and fun.

References

- Agustin, R. W., & Ayu, M. (2021). The impact of using instagram for increasing vocabulary and listening skill. *Journal of English Language Teaching and Learning*, 2(1), 1-7; DOI: 10.33365/JELTL.V2I1.767
- Barbara M. N. & Philip R. N. (2020). Chapter 11 - Ecological theories, Theories of Adolescent Development, Academic Press, 313-335, DOI:10.1016/B978-0-12-815450-2.00011-5.
- Brothers, S., Lin, J., Schonberg, J., Drew, C., & Auerswald, C. (2020). Food insecurity among formerly homeless youth in supportive housing: A social-ecological analysis of a structural intervention. *Social Science & Medicine*, 245, 112724. DOI:10.1016/j.socscimed.2019.112724.

- Bruhwiller, C. & Vogt, F. (2020). Adaptive teaching competency: Effects on quality of instruction and learning outcomes. *Journal for Educational Research Online*, 12(1), 119-142; DOI: 10.25656/01:19121.
- Chou, W., Li, Y., & Ke, Z. (2021). The Gift Karma Social Experiment Based On Experiential Learning. *Journal of the Science of Design*, 5(2), 241-250; DOI: 10.11247/jsd.5.2_2_41.
- Flores, R., Namin, A. S., Tavakoli, N., Siami-Namini, S., & Jones, K. S. (2021). Using experiential learning to teach and learn digital forensics: Educator and student perspectives. *Computers and Education Open*, 2, 100045; DOI:1016/j.caeo.2021.100045.
- Gaughwin, M., & Ellice-Flint, S. (2021). Social design pedagogy and the UN SDGs: Bridging theory and practice to foster critical agency for sustainable futures. *DISCERN: International Journal of Design for Social Change, Sustainable Innovation and Entrepreneurship*, 2(2), 79-94.
- Heinrich, W. F., & Green, P. M. (2020). Remixing approaches to experiential learning, design, and assessment. *Journal of Experiential Education*, 43(2), 205-223; DOI: 10.1177/1053825920915608.
- Hydrie, M. Z. I., Naqvi, S. M. Z. H., Alam, S. N., & Jafry, S. I. A. (2021). Kolb's Learning Style Inventory 4.0 and its association with traditional and problem based learning teaching methodologies in medical students. *Pakistan Journal of Medical Sciences*, 37(1), 146; DOI: 10.12669/pjms.37.1.2275.
- Lim, W. M. (2022). Toward a theory of social influence in the new normal. *Activities, Adaptation & Aging*, 46(1), 1-8; DOI: 10.1080/01924788.2022.2031165.
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860; DOI: 10.1016/j.cedpsych.2020.101860.
- Sarvan, S., & Muslu, L. (2022). In the eyes of adolescents, is the pandemic an obstacle or a gain? A qualitative study based on the ecological theory. *Journal of Pediatric Nursing*, 66, 15-22; DOI: 10.1016/j.pedn.2022.05.012.
- Xiuwen, Z., & Razali, A. B. (2021). An Overview of the Utilization of TikTok to Improve Oral English Communication Competence among EFL Undergraduate Students. *Universal Journal of Educational Research*, 9(7), 1439-1451; DOI: 10.13189/ujer.2021.090710.