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Effectiveness Study on Mind Mapping Approach to Students' Operation Position Performance and Creativity on Traditional Chinese Painting

Wei SHI¹, Xian Ping MENG²

Abstract

Under current diplomaism, students' painting ability is cultivated, but the creativity development is restricted. Students mainly learn painting skills that technique training is mostly emphasized. To improve such a problem, it is necessary to build the operation position performance ability and the value and attitude towards creativity, cultivate creativity with multiple intelligences as the structure, stress on the creativity process and taking pressure in the experience, and integrate creativity into course teaching. Using experimental design model for this study, 202 art major students of a university in China, as the experimental subjects, are preceded the 18-week (2 hours per week for total 36 hours) experimental teaching research. The research results show that 1.mind mapping approach would positively affect operation position performance, 2.mind mapping approach would positively affect creativity, and 3.operation position performance shows significant and positive effects on creativity. According to the results to propose discussions, it is expected to provide students with the learning strategy of creative thinking through teachers' teaching model, cultivate students' operation position performance and creativity on traditional Chinese painting with the system structure and divergent thinking of mind mapping symbolism, as well as actually apply to the artistic creation of traditional Chinese painting.

Keywords: mind mapping approach, traditional Chinese painting, operation position performance, creativity.

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Introduction

Many artists consider that child drawing is not the duplicate of the real world. They promoted child drawing and regarded fine drawing skills not equal to artists. According to U-curve theory, preschool children present better imagination, vividness, and uniqueness on creation and are in the golden stage of artistic creation, but get sticking to realistic stage along with increasing ages to gradually reduce the originality. Adults often put real meanings on children. For instance, “you could add windows on your house” and “the proportion of your characters is not right”. Creation therefore becomes conventional, no sense of humor, and no imagination. A lot of past research mentioned that art teachers, art major students, and general college students affirmed “creativity performance” as an indispensable element in artistic creation. The importance of creativity is apparently important for art talents and works. Domestic teaching in art class should stress on the training of creativity in the future, in order to cultivate real artists, rather than limners. Chinese society overemphasizes IQ, but ignores creativity, stresses on competitive performance, but neglects learning process, and focuses on knowledge imparting, but ignores creative process. Apparently, the learning environment for Chinese people does not seem to get rid of conventional teaching model. To promote students’ creativity, it is necessary to integrate creativity into various subjects. It is inferred that integrating creativity into art would be the teaching direct to better promote art class students’ creativity.

Nevertheless, under current diplomaism, students are cultivated painting ability, but might be restricted the development of creativity. Students mostly learn painting skills and arrange courses with subjects for entrance examination that they stress more on technique training. Such a theory might be the dilemma for teachers in the teaching. Except still-life copying, many students do not appear much personal ideas about painting content and operation position performance on creativity. Mostly, teachers offer composition, but seldom allow students’ development. In this case, students, in actual learning, are lack of operation position performance and creativity. When a course requires the development of creativity, it is often heard that “teachers, I don’t know what to draw”. To improve such problems, it is necessary to build the operation position performance ability and the value and attitude of creativity, cultivate creativity with multiple intelligences as the structure, stress on the process of creativity and taking pleasure in the experience, as well as integrate creativity into course teaching. Art operation position performance should be students’ knowledge and skills related to art domain, including domain knowledge, techniques and talent of art creation, creativity related knowledge and skills, and enthusiasm for special domain. The applied creative thinking strategy could cultivate students’ creativity which teachers should integrate into various curricula. There is not a standard answer in art, and creativity seems to be one of the abilities students should have. Accordingly, the effectiveness of mind mapping approach on students’ operation position performance and creativity on traditional

Chinese painting is discussed in this study, expecting to provide students with creative thinking learning strategy, through teachers' teaching model as well as cultivate students' operation position performance and creativity on traditional Chinese painting with the system structure and divergent thinking of mind mapping symbolism, and the actual application to the artistic creation of traditional Chinese painting.

Literature review

Mind mapping approach was the style of thinking in pictures developed after Tony Buzan encountering difficulties in absorbing, organizing, and memorizing information in the studying process in 1970s. There are several versions in Chinese translation; in different literatures, it is also called mind map, mind mapping, thinking composition, learning map, mental imagery (Santana *et al.*, 2021). Mind mapping approach, a radiant thinking model as well as a systematic knowledge coding, could be used for assisting in learning, exciting creativity, organizing overall concept for organization, and helping the operation position performance on painting. Mind map could reflect the thinking process of brain in the learning process, effectively present thinking routes, and draw the process of mind map for clearer and more efficient operation position logic thinking (Abdalla *et al.*, 2021). Mind map, applying whole brain creative thinking and problem solving skills, is a good way for sorting and organization that it could effectively enhance the operation position performance on painting (de Brito Sena *et al.*, 2021). Mind mapping approach reveals following effects on students: (1) Promoting students' language fluency, originality, and flexibility; (2) Enhancing students' graphic fluency, originality, flexibility, and elaboration; (3) Promoting students' writing performance; (4) Students hold positive affirmation towards mind mapping approach integrated teaching (Bożek, Nowak, & Blukacz, 2020). Consequently, the following hypothesis is proposed in this study. *H1: Mind mapping approach would positively affect operation position performance.*

Creative thinking is a knowledge management strategy not coming out from nowhere, but radiating ideas, which are data getting into the brain through association, for integrating distinct information (Choudhari *et al.*, 2021). Mind mapping approach is a thinking style of images, using brainstorming to build a relevant conceptual organization to effectively promote creativity (Luan *et al.*, 2021). Mind mapping approach is the whole brain thinking for inducing ideas and promoting creativity that it could be practiced in daily life, such as thinking, planning, and problem solving, to simultaneously enhance art and science (Akram *et al.*, 2021). Mind map is a noting method combining vision and image, could be applied to thought integration, brainstorming, free association, and creativity induction, as well as a thinking strategy and a learning tool. Mind mapping approach

could promote students' language fluency, originality, and flexibility (Crowther, Adjapong, & Jenkins, 2023). Zanto *et al.* (2022) regarded mind mapping approach as a "radiant thinking" beneficial to learning, transferring information and concept into organized and systematic "visual thinking", a learning strategy to integrate knowledge and result in brainstorming, as well as a visual thinking style being able to induce creativity, solve problems, help logic thinking, and assist in learning. For this reason, the following hypothesis is proposed in this study. *H2: Mind mapping approach would positively affect creativity.*

Creative art expression provides students with spontaneous and multiple creativity expression routes, obviously promotes students' creativity fluency, flexibility, originality, and elaboration in cognitive domain, as well as enhances students' performance on creativity risk and imagination of affective domain to largely enhance students' operation position performance (Baliga, Walvekar, & Mahantshetti, 2021). Rusticus, Pashootan, & Mah (2023) discovered in the study that, after practicing creativity course to art class students in junior high schools, the experimental group significantly promoted the fluency, originality, and elaboration. Apparently, creativity was the ability which could be learned. In addition to creativity being able to be learned, the cognition of operation position would affect students' creation. Zabor, Kaizer, & Hobbs (2020) mentioned that, in graphic operation position creation, better-performance students showed higher creativity than worse-performance students; and, there were correlations between operation position cognition ability and creativity. As a consequence, the following hypothesis is proposed in this study. *H3: Operation position performance shows significant and positive effects on creativity.*

Methodology

Measurement of research variable

(1) Operation position performance: According to Wang's (2022) study, the research subjects are evaluated theme and picture composition, feeling and emotional performance, as well as imagination or thinking performance. Furthermore, students' learning feedback in the traditional Chinese painting class and researcher's observation records are used as the evaluation reference.

(2) Creativity: Referring to "creative thinking test" edited by Wu & Wu (2020), the sum of fluency, flexibility, originality, elaboration, and cognition is applied to this study.

Research subjects and sampling data

The experimental design model is adopted for this study. 202 art major students of a university in China are selected as the research subjects. The experimental class (101 students) are preceded traditional Chinese painting teaching with mind mapping approach, and the control class (101 students) remain conventional teaching method for traditional Chinese painting. The experimental teaching research is preceded for 18 weeks with 2 hours per week (for total 36 hours). The retrieved research data are analyzed with SPSS, and regression analysis and analysis of variance are utilized for testing various hypotheses.

Analysis

Analysis of variance is applied in this study to discuss the difference of mind mapping approach in operation position performance and creativity on traditional Chinese painting. Regression analysis is further used for understanding the relations between operation position performance and creativity.

Results

Effects of mind mapping approach on operation position performance and creativity

Difference analysis of mind mapping approach in operation position performance: Analysis of variance is used in this study for discussing the difference of mind mapping approach in operation position performance, i.e. analysis and explanation of operation position performance. Table 1 shows the difference of teaching methods in theme and picture composition, where mind mapping approach appears higher theme and picture composition than traditional teaching (4.03>3.55). Regarding the difference of teaching methods in feeling and emotional performance, mind mapping approach reveals higher feeling and emotional performance than traditional teaching (3.98>3.47). Finally, in regard to the difference of teaching methods in imagination or thinking performance, mind mapping approach shows higher imagination or thinking performance than traditional teaching (4.17>3.61). H1 is therefore supported.

Table 1. Difference analysis of mind mapping approach in operation position performance

| variable | F | P | Scheffe post hoc |
|-------------------------------------|--------|--------|--|
| theme and picture composition | 17.533 | 0.000* | mind mapping approach (4.03) >traditional teaching (3.55) |
| feeling and emotional performance | 22.186 | 0.000* | mind mapping approach (3.98) >traditional teaching (3.47) |
| imagination or thinking performance | 25.475 | 0.000* | mind mapping approach (4.17) >traditional teaching (3.61) |

* stands for $p < 0.05$

Difference analysis of mind mapping approach in creativity: According to analysis of variance to discuss the difference of mind mapping approach in creativity, creativity is analyzed and explained. Table 2 reveals higher creativity with mind mapping approach than it with traditional teaching (4.46>3.77). Accordingly, H2 is supported.

Table 2. Difference analysis of mind mapping approach in creativity

| variable | F | P | Scheffe post hoc |
|------------|--------|--------|--|
| creativity | 31.583 | 0.000* | mind mapping approach(4.46)>traditional teaching(3.77) |

* stands for $p < 0.05$

Correlation analysis of operation position performance and creativity

To test H3, the analysis results, Table 3, reveal remarkable and positive effects of theme and picture composition, feeling and emotional performance, and imagination or thinking performance in operation position performance (Beta=0.216**; 0.227**; 0.232**) on creativity. As a result, H3 is supported.

Table 3. Analysis of operation position performance to creativity

| dependent variable→ | creativity | |
|-------------------------------------|------------|-------|
| independent variable↓ | | |
| operation position performance | Beta | P |
| theme and picture composition | 0.216** | 0.000 |
| feeling and emotional performance | 0.227** | 0.000 |
| imagination or thinking performance | 0.232** | 0.000 |
| F | 53.296 | |
| significance | 0.000*** | |
| R2 | 0.433 | |
| adjusted R2 | 0.406 | |

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

Data source: self-organized in this study

Discussion

The research results show that, after integrating mind mapping approach into art teaching, teachers observe the operation position performance on traditional Chinese painting of students, with either low-achievement or high-achievement, being generally promoted and the harmonious class climate. Students would appreciate the peers' works with mind mapping approach, express personal feelings about traditional Chinese painting, and are brave to ask questions. Overall speaking the class climate is livelier than teachers teaching with technique demonstration. With mind mapping approach, many students improve the situations of not drawing due to being afraid of classmates' laugh or covering the works when teachers pass by. Some students are still lack of self-confidence, but they are willing to share the creation theme with teachers and would actively seek for teachers' suggestions after drawing the mind map. Teachers, on the other hand, would provide feedback. In the back-and-forth interaction, they could better understand students' ideas, and students increase self-confidence in the traditional Chinese paintings. Mind mapping approach would have students ask themselves for more elaborative presentation on operation position performance, expect to challenge themselves on creation, and healthily compete with peers. In this case, the progress would be presented in the course teaching, and the ambition to create traditional

Chinese painting could be observed. Apparently, mind mapping approach allows multiple creation themes, arouses the consonance of traditional Chinese painting with themes and affection, and applies individual imagination to complete the presentation of traditional Chinese painting that traditional Chinese painting is no longer purely to draw a good painting, but could deliver personal ideas.

Conclusion

The research results reveal students' positive feelings about integrating mind mapping approach into traditional Chinese painting teaching. In students' feedback, it is discovered that students favor multiple teaching styles, students applying mind mapping approach to create traditional Chinese painting could enhance the learning interests and opportunities to think, rapidly conceive the operation position performance on painting, as well as expect to create traditional Chinese painting with such an approach in the future. In teaching sites, it could often perceive students' dull creativity and not being able to make decisions after long thinking. However, the teaching experiment shows students' faster operation position performance on composition and topic conceiving. Observing from an instructor's aspect, students using mind mapping approach could more easily focus on the creation theme of traditional Chinese painting and associate the live experience to induce the creation interest. Those not being able to come out with ideas are brave to draw after the practice with mind mapping approach and are more confident to express personal ideas. Nonetheless, teachers have to care for students' creation progress, solve students' difficulties, and guide students to solve by thinking.

Suggestion

Regarding the overall learning and arrangement in the research experiment, the mind mapping approach integrated traditional Chinese painting teaching could promote students' operation position performance and creativity on traditional Chinese painting. Both teachers and students gain a lot. Students reveal that they would need long time to think of the operation position, as the ideas are divergent. After using mind mapping approach, they have the direction for association to decide the operation position and could better associate life experience when developing the creativity. It is discovered in this teaching research that students hasten the traditional Chinese painting and activate the thinking to express the creation ideas for traditional Chinese painting and discuss ideas with classmates after mind mapping. In comparison with the past when they worry about not thinking of any themes, it is apparently a breakthrough. In this case, it is suggested that multiple creative techniques, such as Mandala Chart and brainstorming, could be integrated into traditional Chinese painting teaching to break through students'

obstacle to operation position performance and creation thinking. Moreover, students' thinking context is clearer during the mind map sharing so that they could completely learn different ideas and painting angles among peers. The class climate becomes more active in the later stage of the study to enhance to the level of appreciation. With correction suggestions, the course does not simply focus on technique teaching, but becomes multiple to combine traditional Chinese painting with life and allow students, through distinct thinking, present more possibilities on the media, themes, and skills for the traditional Chinese painting creation.

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