Effects of The Application of Information Technology to Art Education Therapy on University Students' Self-Concept and Peer Relationship

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ABSTRACT
The development of information facilitates people’s life and impacts and influences traditional teaching methods. Information technology integrated into modern teaching and scientific concept learning therefore plays a critical role. The advance and development of economy and technology have the society tend to diversity. Under such a situation, university students encounter the impact of diverse value. Students with low self-concept and alienated peer relationship urgently require proper guidance for the effective improvement. Art education therapy stresses on art teachers paying attention to students’ individual difference and identifying the characteristics of students’ emotional disturbance and anomalous behavior for effective referral. Total 98 university students in two classes of LuXun Academy of Fine Arts in Shenyang City, Liaoning Province, as the research objects, are proceeded 16-week (3hr per week for total 48 hours) art education therapy with information technology. The research results show significant correlations between 1. art education therapy and self-concept, 2. art education therapy and peer relationship, and 3. self-concept and peer relationship. Finally, suggestions are proposed according to the results, expecting the intelligent instruction of school education to really inspire university students’ personality growth to achieve the goal of holistic education.

Keywords: information technology, art education therapy, self-concept, peer relationship

INTRODUCTION
Information technology integrated modern teaching and scientific concept learning plays a primary role due to the explosion of knowledge and the changing technology in past years. The major value lies in satisfying the needs for various education concepts, conforming to students’ individual needs, and adapting to individual differences. It therefore is a tool assisting in teachers’ teaching and students’ learning and a method attempting to improve teaching. The advance and development of economy and technology in Taiwan have the society tend to diversity to change the lifestyles and learning environment of family and schools. Under the situation, students encounter the impact of diverse value, and parents and teachers perceive the difficulty in the roles. Although guidance is gradually emphasized in schools, short of guidance resources in schools is the dilemma in current education. Students’ deviant behaviors at schools, e.g. hyperactivity, autism, inferiority, anxiety, shyness, bad emotion control, violence, inquisitiveness, snitching, and bad living habits, often result in other classmates not being willing to get along with them. Such students, without proper guidance and assistance, would not integrate into groups and easily become label characters in the classes and lose the self-confidence, and even develop negative self-concept. Such students with low self-concept and alienated peer relationship urgently require proper guidance for the effective improvement.
Art could release people’s emotion. Students’ inner world and needs could be understood through the art activity process. For students, art is one of subjects with less pressure in school education and the course design is more flexible. In the ordinary teaching and students’ life guidance, students’ living experience is closely related to the art creation, and students’ art creation process and works also respond the psychology state at the time. After the 20th century, psychologists started to treat people with psychological and physiological disorder. Art education therapy stresses on teachers paying attention to students’ individual differences and identifying the characteristics of students’ emotional disturbance and anomalous behaviors for effective referral. Information technology is therefore applied to art education therapy in this study to understand the effect of art education therapy on university students’ self-concept and peer relationship, expecting that school education could present intelligent instruction and really inspire students’ personality growth to achieve the goal of holistic education.

**LITERATURE AND HYPOTHESIS**

**Information Technology Integrated Teaching**

Information technology is a new system or new communication method developed with digital electronic media, i.e. the application of computers, multimedia, and network media to collect, process, store, and transmit texts, graphs, images, and voice (Clark & Mayer, 2016; Pontes & Albuquerque, 2017). Information education is developed from computer-aided teaching and computer course practice to information integrated teaching. The role of information changes from “information as a teacher” to “information as learning partners”. Jin et al. (2014) indicated that information technology integrated teaching was to integrate information technology into curricula, materials, and teaching and have technology become the essential teaching and learning tools, i.e. the use of technology being a part of daily life and being extended to regard information technology as a method or a program for searching for problem solutions anytime anywhere. Atenas and Havemann (2014) considered that information technology (the application of information equipment, multimedia, network media to collect, store, and transmit texts, images, and voice) was to combine new systems or new communication with the entire teaching activity (goal, student, content, environment, teacher) when applying it to various subject teaching activity. Such a new teaching method presented the application with interactivity, reproducibility, computability, and instrumentalization. Ihmeideh (2014) referred information technology integrated teaching as computer multimedia or network technology, which presented the functions of digitalization, multiple stimulation of audio and video, accessibility, fast processing, and easy communication, i.e. matching the needs for teaching contents and teaching strategies, applying the characteristics of computer multimedia network, regarding information technology as teaching tools, and increasing more flexibility than traditional didactic teaching to provide more two-way communication opportunities for students’ learning.

**Art Education Therapy**

Kuo and Chao (2014) interpreted art education therapy as a psychological therapy, providing non-verbal expression and communication opportunities for the party exploring personal problems and potential through non-verbal and verbal expression and art experience. Conejeros and Mansilla (2014) pointed out art education therapy as the general term of “art” and “therapy”, while “communication” and “insight” were more important than art creation. Maeng and Lee (2015) indicated that art education therapy regarded art as the bridge of individual intrinsic and extrinsic experience that the party could release uncomfortable emotion through creation and clarify old experience. In the process realizing ideas into images, individual needs and emotion were delivered, through sharing and discussion to integrate the personality. Agarwal and Mittal (2014) mentioned that, for the practice of art education therapy in ordinary classes in a school, teachers had to present the competency of art education, counseling, and special education in order to be competent in the art education therapy work. Molaei and Dortaj
(2015) considered that art teachers for the practice of art education therapy should carefully utilize the therapy functions of various media, grasp timing, and apply it to distinct curriculum design to help students’ common learning and happy growth in art courses.

Referring to Cai et al. (2014), “art education therapy” is divided into following dimensions in this study.

1. Curriculum design: To plan flexible courses with little structure, according to students’ physical and mental development at various stages, to enhance students’ intrinsic self-exploration.

2. Curriculum content: To pay attention to course integration, combine various seasons, festivals, activities, and students’ life experience to induce students’ exploration with open-ended questions or subjects.

3. Group dynamics: A teacher in the “art education therapy” course is like a group leader designing teaching and enhancing individual growth, based on the group dynamic.

4. Multiple assessments: To get rid of work-oriented evaluation in traditional art education, children’s performance in the activity process is evaluated with 5-scale or multiple evaluation dimensions.

**Self-concept**

Lubega et al. (2014) regarded self-concept as the core to construct personality. Niknejad and Rahbar (2015) defined self-concept as the idea and emotion to which an individual regarded self as an object for reference. Baran (2014) defined self-concept as a relatively stable self-attitude, which reflected individual description and evaluation of the behavior and quality. Subasi et al. (2017) regarded self-concept as individual opinions about subject self to object self, meaning the sum of personal perception of self, including individual understanding of the personality, ability, interest, and desire, the relationship between individual and environment, individual experience in dealing with affairs, and the understanding and evaluation of life goals. Jude et al. (2014) referred self-concept as the sum of personal idea, emotion and attitude, i.e. an individual attempting to explain self and establish schema to organize the impression, emotion, and attitude towards self. In short, it was the overall opinions of an individual toward self.

Referring to Huang and Chuang (2016), self-concept is the perception of and attitude towards personal image and personality traits and is “conceptual construct”, i.e. an individual perceiving and believing in self and performing in the behavior system to become individual model. Three dimensions of self-concept are further explained.

1. Body image: The belief in personal physical and psychological needs and the provision of self with physical space.

2. Social self: The belief in individual roles in the society to further expand self to the social space.

3. Person identity (self-identity): The belief in certain belief, ideal, and value systems. Person identity provides the third space, i.e. psychological life or spiritual life, to have a person exist as the value.

**Peer Relationship**

Manek et al. (2017) proposed peer relationship as the mutual relationship between individual and peers. Peer relationship, also called “social relationship” or “friend relationship”, was regarded as an important interaction in society or schools. Khalid et al. (2014) pointed it out as the interaction situation and degree of people at equivalent status. Saelao et al. (2016) also revealed that peer relationship was the interaction process and situation in peer groups. Alickovic and Subasi (2016) pointed out two simple characteristics of peer relationship as the obvious distinction with other interpersonal relationship that two parties with different fairness and rights were generally equal in the peer relationship, and the rights were balanced. Uysal and Gunal (2014) regarded peer relationship as a kind of interpersonal relationship and the basic interpersonal relationship for individual development and socialization. Peer relationship presents great influence on youngsters.

Referring to Lee and Hao (2015), the following dimensions for peer groups are used in this study.

1. Self-understanding: Peers are the reference group of students’ behavior comparison. Peers are like a mirror with which students could know themselves from others’ responses to form self-concept.

2. Social skill: Peer performance provides partial demonstration and reinforcement for students. Parent and teacher authority could regulate student behaviors, but the value judgment and preference choice of peer group could have students actively revise the behavior, change the thoughts, and learn to communicate and express personal opinions, social skills to get along with others, and problem-solving ability.

3. Support and belonging: Cohort status is equal. Support and belonging from peers for students lacking family warmth or sibling interaction could not be replaced by parents. Students often require peer identity and belongingness for the psychological satisfaction.
Research Hypothesis

Wu and Kuo (2014) argued that art creation was therapy. The art creation process could release emotional conflict, purify emotion, and enhance the party’s insight to assist the party in self-recognition and self-growth and enhance students’ self-concept. Castellanos Nájera (2015) indicated that art education therapy integrated psychological analysis and art essence, paid attention to the psychological process and members’ psychological dynamic in the creation process, and carefully arranged art activity and media, expecting to release members’ psychological energy through art creation and share and assist members in self-awareness to achieve the integration of personality and self-concept. Molaee and Dortaj (2015) regarded art therapy as an interesting therapy to attract students’ active participation. Students’ works could reflect the talent, physiological and competence development, and the relationship between self-concept and external real world or daily life environment. The following hypothesis is therefore proposed in this study.

H1: Art education therapy shows significant correlations with self-concept.

Kuo and Chao (2014) stated that applying art therapy to schools could construct students’ positive interpersonal relationship and assist students’ in the physical and mental integration and healthy development of personality. Cai et al. (2014) indicated that art education therapy, through course planning, combined students’ life experience and regarded art as the bridge to express individual intrinsic and extrinsic experiences. Ibáñez et al. (2014) proposed the aim to enhance students’ aesthetic experience and, through humanistic art teaching activity, integrate students’ learning experiences, release the physiological constraint and emotional disturbance so that students could develop bright and positive self-concept and enhance peer relationship. Alickovic and Subasi (2016) mentioned that art education therapy, following the principles, assisted students in self-exploration, self-acceptance, self-opening, and self-understanding, through the expression of art media, in the secure and reliable situations, as well as enhance cognition and dignity and harmonize intrinsic and extrinsic conflicts to achieve the effects of stable emotion, emotional sublimation, and enhancement of behavioral adaptation. Moreover, Maeng and Lee (2015) explained it to stimulate group interaction through creation activity and the arrangement of sharing and discussion to enhance mutual understanding among peers and further improve peer relationship that it was suitable for art education in ordinary classes. Accordingly, the following hypothesis is proposed in this study.

H2: Art education therapy reveals remarkable correlations with peer relationship.

Lee and Hao (2015) mentioned that students had to learn social ability and social norms as well as to establish value and self-concept in the interpersonal interaction. Interpersonal relationship contained various interactions among people, such as parent-child relationship, peer relationship, teacher-student relationship, and parent-teacher relationship. Sanjay (2016) explained self-concept as to generate interpersonal relationship with others through self-opening. With “Johari Window”, people could understand the depth of personal and others’ understanding of self. Johari Window includes two dimensions of “extrinsic self”, as individual image in others’ minds, and “intrinsic self”, as self-understood image. Huang and Chuang (2016) indicated that self-concept generated interpersonal relationship with others through the opening of such two dimensions. Generally speaking, students with higher self-concept present better interpersonal relationship, self-confidence, adaptation, and more stable emotion. Woo (2014) considered that students with difficulty in interpersonal interaction would be hindered the personality development and emotion maturity. Niknejad and Rahbar (2015) indicated that ones being popular in peers acquired higher scores on ability self, psychological self, family self, social self, self-identification, self-satisfaction, self-action, and self-total score than those being alone; and, the difference was remarkable. It revealed the correlation between peer relationship and self-concept. In this case, the following hypothesis is proposed in this study.

H3: Self-concept presents notable correlations with peer relationship.

RESEARCH METHOD

Methodology Model

Goodness-of-fit in LISREL model could generally be tested with overall model fit (external quality of model) and internal quality of model. Regarding the test of overall model fit, the common indicators contain (1)”χ2 ratio” (Chi-Square ratio), standing for the gap between real theory model and expected value, which is better smaller than 3, (2)goodness of fit index (GFI) and adjusted goodness of fit index (AGFI), which appear better goodness-of-fit when being closer to 1, (3)root mean square residual (RMR) to reflect “mean of fit residual variance/covariance”, which is better smaller than 0.05, and (4)incremental fit index (IFI), showing good model fit when being larger than 0.9.

LISREL is often applied as the assessment indicator of internal quality of model, including (1) SMC (square multiple correlation) of individual manifest variable, as R2 of manifest variable and latent variable, which is better
larger than 0.5, (2) component reliability of latent variable (ρ), as Cronbach’s α coefficient of the observation indicator of the latent variable, which is better larger than 0.6, and (3) average variance extracted of latent variable, which is calculated with the sum of manifest variables R2 of a latent variable divided by the number of manifest variables, revealing the percentage of latent variable being measured with manifest variable, which is better larger than 0.5.

**Research Sample and Object**

Quasi-experimental research is applied in this study. Total 98 university students in two classes of LuXun Academy of Fine Arts in Shenyang City, Liaoning Province, are selected as the research object for the 16-week (3hr per week for total 48 hours) experimental art education therapy teaching with information technology. The retrieved data are analyzed with SPSS, and Regression Analysis and Analysis of Variance are utilized for testing the hypotheses.

**Reliability and Validity Test**

Validity refers to a measurement scale being able to actually measure the degree what a researcher would like to measure. Common validity contains “content validity”, which tends to the test of qualitative concepts, “criterion validity”, which evaluates known external criterion and correlation coefficient in this test, and “construct validity”, used for evaluating the consistency of a measurement to other observable variables. The questionnaire contents are based on past theories and designed to authentically express the essence of object and complete representativeness to ensure the content validity. Besides, the final commonality estimate in Factor Analysis is applied to test the construct validity of questions. The validity value appears in 0.7~0.9, showing the favorable validity of this questionnaire.

**EMPIRICAL RESULT ANALYSIS**

**Model Fit Test**

“Maximum Likelihood” (ML) is used in this study for the estimation, and the analysis result achieves the convergence. As shown in **Table 1**, the overall model fit indicators pass the test, thoroughly reflect the favorable external quality of model.

**Path Relationship Test**

In regard to the test of internal quality of model, SMC of manifest variables is larger than 0.5 (**Table 2 & 3**), revealing good measuring indicators of latent variables. Furthermore, latent variables of art education therapy, self-concept, and peer relationship show the component reliability higher than 0.6 and the average variance extracted of dimensions is larger than 0.5 (**Table 4**) that it conforms to requirement for the internal quality of model.

<table>
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<tr>
<th>Evaluation Indicator</th>
<th>Judgment Standard</th>
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<tr>
<td>p-value</td>
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<td>0.000</td>
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<tr>
<td>χ2/d.f.</td>
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<tr>
<td>GFI</td>
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<tr>
<td>NFI</td>
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<td>IFI</td>
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<th>Group Dynamics</th>
<th>Multiple Assessments</th>
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**Table 2. SMC of variable to dimensions**
Table 5 reveals positive and significant correlations between art education therapy and self-concept (0.846), art education therapy and peer relationship (0.831), and self-concept and peer relationship (0.858) that H1, 2 & 3 are supported. The hypothesis test results are shown in Table 6.

**CONCLUSION**

The research results reveal that school life presents important proportion on university students’ self-concept development. Students are gradually separating from subjective stage and developing objective self-image in the interaction process with teachers, friends, and peers in the school life. Meanwhile, the self-value system is gradually formed along with the rapid development of emotion and intelligence. Apparently, the application of information technology to art education therapy stresses on the good interaction between teachers and peers as well as secure, acceptable, and inclusive classroom climate to help university students develop positive self-value systems as the factors in university students’ self-concept growth. The application of information technology to art education therapy proves that art education therapy could enhance university students’ positive changes in peer relationship. The creation space created by teachers is secure, acceptable, and empathic that students could really express the emotion and idea. Teachers extending such inclusive attitude to classroom management could establish good parent-teacher-student relationship, including providing parent-teacher and parent-child communication opportunities and shortening parent-teacher-student distance. Besides, it could change teachers’ role from traditional authority and answer provider to listener of students’ living events and secret sharer. It could create interaction space for students to induce students’ autonomous interaction, change the after-school interaction mode, enhance the integration of sub-group in a class, and effectively assist students in developing harmonious sexual relationship and interaction to promote peer relationship.

**SUGGESTION**

According to the research results and findings, practical suggestions are further proposed.

1. Art education therapy teaching is a kind of respect and affirmation. Nevertheless, how can a teacher help some students who could not have the skills achieve the expected level? Painting ability is closely related to university students’ development. In addition to making perfect with practice, students’ physical and mental maturity and the cultural stimulation are the factors. In addition to well applying various multimedia exploration activities with information technology, increasing contact with students, and being familiar with materials, teachers could design suitable art education therapy courses by communicating with the tutors and parents and understanding students’ background to enhance students’ self-concept and peer relationship.

2. Art activity could promote university students’ self-concept and self-confidence and the acquisition of achievement. Art media, art process, and completed works could provide students with growth
opportunities, self-concept, self-satisfaction, and value. For this reason, art education therapy could be regarded as each teacher’s guidance competency. Although it is not necessary for each teacher presenting the ability to practice art education therapy, correct concepts could help students’ growth. It is therefore suggested that education units could emphasize the study on art education therapy and broadly open the channels for relevant courses or seminars.

3. Teachers present distinct specialties. There are few teachers presenting completely mated professional background with art therapy field. Art teachers are therefore encouraged to cooperate with therapy teachers to really develop the interdisciplinary characteristics. What is more, domestic professional talents could be introduced. Although they do not have doctorate degree, the professional capability is affirmative; especially, they would actually help empower students.

REFERENCES


http://www.ejmste.com