Action Research on the Integration of Creative Dance and DanceForms

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Abstract

It's an integrated curriculum in relation to both of the domains of *Science and Techology* and *Arts and Humanities* within the *Grade 1-9 Curriculum* educational system. To be more specifically, on the basis of the integration of teaching principles of creative dance, the employment of the multimedia program DanceForms, and the subject material of painting and music, it is applied, for one year, to one of the third-grade class at Ceng-Lin Elementary School and Shi-Gang Elementary School in Tainan County Respectively.

The curriculum is designed by the teacher group and the researcher who are also the teachers to give a lesson once a week, 80minutes per session. The research is conducted and implemented through teaching, participation observation, video-tape recording, teacher's diary, and students' assignments, evaluations from a colleague and a scholar, and valid data analysis.

The one year process is documented, observed, recorded and reviewed by related teaching staff. The findings suggest that firstly, the integrated curriculum of project helps students integrate their life experiences. Secondly, this project leads to the development of students' bodily expressive vocabularies. Thirdly, it with the use of DanceForms helps students understand the limitation of their bodily capacity in diverse areas of concern.

Key Words: Creative Dance, DanceForms, Curriculum Integration, Action Research

Background

In 2009, the National Cultural and Arts Foundation and the Lion Pencil Co., Ltd. co-sponsored “Arts and the Humanities Project III – Spurring Creativity”, offering art groups an opportunity to cooperate with schools to devise teaching programs for the “Arts and Humanities” field in the Grade 1-9 Curriculum. One of the aims referred to in this grant scheme is that “art groups should design teaching programs tailored to the Arts and Humanities field in the Grade 1-9 Curriculum so as to stimulate students’ creativity with interdisciplinary learning and diversified methods of creation”.

After learning about this piece of grant information, the researcher found two teachers and one administrative assistant to cooperate with her. She also obtained permission from a dance company to serve as a unit for application and provide artistic resources and integrated platforms. Later, she sought the approval of two remote elementary schools in Tainan County to participate in her program. Working concertedly, these parties conducted an in-depth dance teaching program based on life and technology. This teaching program spanned one year and was applied to one third-grade class at each school. Once a week, a two separate art lessons (computer and dance) were provided for the students. Action research was used to assess if a self-designed art lesson could offer students a learning experience of integrated art, stimulate their movement creativity with creative dance, and improve their ability to use the choreography software *DanceForms*. Here, this program will serve as an example of curriculum integration for future reference.

Literature Review

Creative dance, as a part of physical education, falls in the domain of educational dance. It can be implemented within a diverse array of subject matters and fields to add depth and breadth to them. As for *DanceForms*, it is choreography software for both visual and kinesthetic learning. Be it the conversion of visual animation into kinesthetic experience or the visual on-screen display of choreographic ideas, learners can learn to make a

creative presentation of their arrangements by combining elements of movement with computer operation.

The two pillars that make up this teaching program are the educational philosophy of creative dance and the feature of choreography learning provided by *DanceForms*. Creative dance is carried out with the body, and *DanceForms* facilitates students' learning and understanding of elements of movement and choreographic design. As a result, the literature review will elaborate on the features and integrative functions of creative dance. It will also explain the relationship between *DanceForms* and dance.

Relationship between Creative Dance and Integrated Curriculum

Features of Creative Dance

Creative Dance is a means by which dance instructors apply theories of physical and mental development related to dance movement to an educational environment. The instructor uses the discovery method in a flexible way to provide guidance for students and encourage them to achieve the goals of the lesson through a series of attempts to explore the possibilities of body movement. In this way, students will increase their abilities to move the body and achieve better expression, communication, and self-realization.

Creative dance breaks away from traditional approaches of dance teaching. It does not provide prescribed movements or techniques for instructors to teach or for learners to learn. As such, the distinguishing features of a creative dance lesson are creativity and originality. Creative dance encourages instructors to utilize elements of movement and creative teaching activities to stimulate the creative potential of students to enable them to stretch their imagination and brainstorm freely via their explorations into elements of movement. Thus, students are encouraged to express their personal innovative qualities through their body movement. Joyce (1994) believes that creative dance itself is highly original. By learning creative dance, students can develop a comprehensive awareness of their body, mind, and cognition. German dancer Laban (1948) has also noted that creative dance activities can strengthen the physical spontaneity of children

and integrate their intelligence and creativity as well as play a crucial role in their balanced development of body and mind in the future.

With its theoretical basis on movement education, creative dance is a type of educational dance. It recognizes students' individual differences and views the process of a learner's physical and mental learning from the perspective of movement education. Focusing on individual freedom and uniqueness, creative dance helps students understand elements of movement through physical exploration. During the process of physical exploration, students are encouraged to recognize their inner feelings, reflect on the relationship between themselves and the world around them, and share their gestural vocabularies. Creative dance, which emphasizes the process of exploring dance experiences and is student-oriented, can turn students into active learners (Chang Chung-shiuan, 2007). Because creative dance is not based on performance, it is beneficial to students' creative, physical, mental, and artistic developments. In this way, students can fully appreciate the explorations and creations during the process (Cheng and Zhan, trans., 2008).

Using the information explained above as a foundation, it can be concluded that creative dance—using the body as a learning tool, employing elements of movement as mediums, and recognizing individual differences—can enrich students' learning in different aspects of sensory intelligence, develop their physical and motor abilities, and spur their creativity.

Integration of Creative Dance

This is a different era. Societies and cultures have become increasingly complex and diverse, and education is also deeply affected. To establish a close link between students' learning and their daily lives, the reformed Grade 1-9 Curriculum has replaced traditional subject learning with area learning. The core rationale of this curriculum emphasizes the integration spirit. It is hoped that through constant interaction between knowledge and experience, a new understanding will emerge from the interplay of new and old experiences. Learning is no longer disjointed. Instead, pieces of information are connected and interrelated and can be applied to real life.

Yang Longli and Pan Lizhu (2001) argue that the reason why different subjects can be integrated is because students are able to bring together their past and present experiences, reflect on them, and understand their significance. As a result, experience is a necessary medium for skill development. Art can easily form a connection with other subjects. Through artistic links and integration, activities in other subjects can be effectively coordinated, because art values “making” and “doing” (Shi and Shi, trans. 1996).

In the Grade 1-9 Curriculum, educators play the roles of delivering mediums and promoting links and integration. “To do a job well, one must sharpen his tools.” Therefore, the ways in which dance instructors select appropriate tools to facilitate art lesson integration are the most essential points. Chang Chung-shiuan (2001, 2007) believes that dance itself is endowed with the three major qualities of “physical education”, “art education”, and “integration”. As a result, dance can create an unlimited number of possibilities and produce beneficial pedagogical effects within a limited time and space. This fully fulfils the educational function of “applying learning to practical use”. Creative dance not only has the ability to integrate other curricular areas, but it can also act as a medium with other subjects.

In Taiwan, a considerable amount of theses written on creative dance and its combination with other subjects currently exists. A precedent has been set for the implementation of creative dance, computer technology, and visual images on the level of elementary schools, such as Pan Weilin’s (2002) “Prototypical Design and Research on the ‘Creative Dance’-based CAI Web Platform for Elementary School Teachers”, Chen Xiuru’s (2002) “A Study of Visually Creative Thinking Applied in Teaching Creative Dance: Taking Space Element as a Production Example”, Huang Shulien (2007)’s “Action Research on the Applications of Motif Writing in Children's Creative Dance”, and Lin Jiazhen’s (2009) “Action Research of Using LifeForms Dancing Software on the Teaching of Children’s Creative Dance”. These texts indicate that creative dance has been widely applied on the level of elementary schools. Its application on other levels, curricular areas, and studies at home and abroad are even more extensive. This phenomenon highlights the multiple functions and qualities of creative dance as a practical

method to integrate learning experiences, learning abilities, and learning concepts (Chang Chung-shiuan, 2007).

The Relationship between DanceForms and Dance

The researcher mentioned the integrative spirit of the Grade 1-9 Curriculum in the previous section. Based on the spirit and philosophy of integration, dance instructors are also active in searching for integration tools and teaching approaches. Li Xianhui and Zhang Tianjun (2002) believe that art teachers are facing challenges posed by new concepts in the Grade 1-9 Curriculum. Li alerted teachers to learn from their past experience and discover new teaching tools and application methods from current media technology because interaction is the driving force behind the combination of technology and art. Chen Xiuru (2003) utilizes images produced by computer technology to improve the learning of dance elements. Through visually creative thinking, the depth of concept establishment and the width of creation are both increased. The display of visual stimulation and excitement leads spectators to produce images and understand the qualities of space elements and their connections with dance. Furthermore, such a display will help performers gain awareness of the space and the demonstrative power of their bodies in that space. In this way, ideas about dance and inspiration from it will be triggered. In fact, because images can help students transform their past sensory experience into the energy for physical exploration, especially in the respect of creative dance, stimulating movements and developments through images is often used in teaching approaches of children's dance (Chang, 2007).

The technique of image guidance in creative dance can stimulate students to explore and create movements. Visual images of computer technology are a tool that provides visual guidance for dance instructors. When presented with different tools of visual guidance, students are able to recognize their physical possibilities and potential. In creative dance, "body", "time", "space", "power", and "relationship" are elements that constitute movement exploration. Elements of movement can also be seen in DanceForms, a software written especially for dance. Calvert & Ryman (2004) explained that the choreography software DanceForms had its roots

in the late 1980s, when the computer program “Compose” was developed at Simon Fraser University. It allowed people to draw a rough sketch of their dance movements to be later viewed in the form of animation. In 2003, an animation system tailor-made for dance, DanceForms, was released. As well as being used by choreographers, DanceForms was used extensively in education. For example, Iris Garland, a professor at Simon Fraser University, used DanceForms for her online course “Dancing in Cyberspace”.

Wang Yunyu and Xie Jiehua (2009) believe that computer and digital technologies should not be limited to the single aspect of performing arts in the dance circles. They must be applied to dance education and human kinetics-related development. Tseng Rayuan and Xu Zhebin (2007) think that DanceForms’s distinguishing feature is that it can challenge the typical movements people are accustomed to, bring new changes to gestural vocabulary, and provide new ideas for choreographic creation. However, the most important point still lies in the final practice of movements designed with the software. New information about gestural vocabulary can only be gained through practice.

DanceForms offers students lacking experience in creativity or those who are physically shy a new way of expressing personal gestural ideas and trying out new movements. By means of sketching movements, DanceForms helps students expand their gestural vocabulary and inspire them to add new elements to it. Students can even understand their physical and gestural possibilities through their experience of transforming visual images into movements. As a result, DanceForms can serve as a technological tool for storing gestural ideas and providing visual guidance in dance teaching.

Research Methods

This study aims to discuss if a self-designed integrated art lesson which combines “creative dance” with “DanceForms” can offer students a learning experience of integrated art, stimulate their movement creativity with creative dance, and improve their ability to use the choreography software DanceForms. To meet the research objective and obtain valid evidence, action research was conducted based on units co-designed by the

researcher and two teachers. In actual teaching, the researcher also took on the role of a teacher so as to solve practical problems by dint of action research through the circular process of discovering and solving problems.

To establish the credibility of the research data and the authenticity of the results, multiple sources of data were collected using observation, data analysis, and interviews in terms of research strategy. Throughout the collection process, the researcher kept reflecting on the impacts of her collecting methods on her subjects. She also examined her own thoughts and opinions on the entire research process.

Participants

Subjects and Research Settings

The subjects of the first curriculum action research made up of 11 people in Class Jia, Grade 3 of Cenglin Elementary School. In terms of their experience in physical movement, students in this class had only followed the school's healthy gymnastic routine or moved to the dances on music videos they watched during break times. The school authorities did not employ any dance teachers. As for the research settings, they were the school's computer room and that class's home room. The subjects of the second curriculum action research were 25 people in Class Ai, Grade 3 of Shigang Elementary School, which is located in a livelier area of Shigang Township. There were 22 classes in the school. Students in Class Ai had experienced dancing and physical movement when they were first and second-graders. As for the research settings, they were a computer room paved with wood flooring and the school's auditorium. To comply with research ethics, the writer provided a detailed explanation of her lesson plan and consent forms to be forwarded to the parents by the home room teachers. Parents signed the consent forms after understanding the content of the lesson plan. Students' personal details were given code numbers.

Collaborators on the Research

In the process of action research, gaining support from colleagues in a practical work is highly beneficial to a practitioner. In this study, the researcher and two research partners worked together to conduct teaching,

observation, and recording. They offered each other suggestions for further improvements on this practical research. The two partners' basic personal information is as follows:

a. Teacher Huang earned a Master of Arts in dance education from New York University and is holding a certificate for teaching dance to gifted and talented students in middle schools and a certificate for teaching performing arts in Tainan County's elementary and junior high schools. She has more than ten years of teaching experience in creative dance pedagogy.
b. Teacher Li graduated from the Department of Dance at Taipei Physical Education College and is now an elementary school teacher. She has a fairly thorough understanding of dance and computer lessons in elementary schools. She is also vastly experienced in teaching.

Expert-Based Collaborative Model

To increase the observation validity of this action research and assess the suitability of the lesson plan, the support and assistance of three experts were sought to provide expert advice and suggestions for adjustment as problems and doubts arose during the action research lesson. The basic personal information of the three scholars is as follows:

a. Professor Huang Sue-Hsueh is a professor of the Department of Dance at Tainan University of Technology and an expert in creative dance pedagogy.
b. Professor Chang Chung-Shiuan is the Vice President of Taipei National University of the Arts and an expert in dance education, creative dance, and dance lesson design.
c. Associate Professor Tseng Rayuan is the Head of the Department of Dance at Taipei Physical Education College and an expert in LabanWriter and dance technology.

Data Collection and Data Processing

For data collection, the sources included media recordings, teachers' diaries, observation records, students' worksheets, computer works, and feedback forms. Emphasis was placed on observation records. Videos and photos were used as supplements.

The data collection method used by the researcher was a qualitative approach. After compiling textual and non-textual data, she interpreted, corrected, and categorized the data according to the "induction method" of qualitative research. In the end, data appeared in codes after arrangement, recording, and analysis. For coding explanation, please see Table 1.

Table 1. Coding Explanation

Coding Type	Code	Coding Explanation
Subject	T: Teacher O: Observer S: Student A: Cenglin B: Shigang C: DanceForms Work Numbers following the English letter represent nominal variables.	Observation OA-1117 represents an observer's observation record about a student in Cenglin. CB-010518 represents a DanceForms work by a student in Shigang.
Source of Data	Students' worksheets (Worksheet)	Worksheet SA301-1 represents the worksheet of student number 1 in Cenglin.
	Feedback forms (Feedback)	Feedback SA301-1 represents the feedback form of student number 1 in Cenglin.
	Observation data (Observation)	Observation OB-0518 represents an observer's observation record about a student in Shigang.
	Teachers' diaries (Diary)	Diary TA-1117 represents the teacher's reviews, records, and reflections about her teaching in Cenglin.
	Video recording (Video)	Video 0327
	Lesson photos (Photo)	Photo 0915-9993

Research Process

Details about the three stages of this research are as follows:

Lesson Planning

For the elementary school's third graders, the team of teachers devised a "Arts and Humanities" dance lesson and "Science and Technology" computer lesson. They planned a program, drew an outline of the program content, and designed a schedule. In the first stage of this research, a 17-week program was implemented in Class Jia, Grade 3 of Tainan County's Cenglin Elementary School.

Lesson Implementation and Adjustment

After entering the “research setting”, the researcher discovered students’ learning problems and adjusted and re-examined her program accordingly. To do so, she conducted teaching observation, recording, and data collection with her collaborators. In the process of problem discussion and reflection, she revised her lesson plan and adjusted the level of the materials. From the lesson implementation of the first-stage research, she discovered problems which could be divided into four groups and revised her plan as thus:

a. Dance：With students’ real-life experience in mind, the researcher planned to let Cenglin students experience “earthquakes” and “wind and let Shigang students experience “earthquakes” and “water”.
b. Music: Devising a percussion experience requires a large amount of learning time and long experience. Owing to the sheer weight of student numbers in Shigang Elementary School, lack of time and musical instruments, and difficulty of keeping teaching on schedule, the researcher decided to cancel this lesson.
c. Computer：Students in Shigang Elementary School had had experience in operating computers in the previous semester, so they were more familiar with computers. As a result, DanceForms instruction sets not taught in Cenglin Elementary School were added to the lesson plan for Shigang Elementary School, including “learning to increase or decrease the number of dancers, practicing partner dance choreography and position arrangement”, “drawing body shapes demonstrated by teachers in class”, and “drawing body shapes of three dance moves one has done in the dance lesson”.
d. Art: Because of limited funding and teacher availability, the lesson in Shigang Elementary School would be taught by the teaching team. In addition, students would be taught to make clothes using the clothes, paints, and equipment supplied by sponsors.

After revisions and alterations were made to the dance, computer, art, and music lessons respectively, the researcher implemented the second-stage lesson in Class Ai, Grade 3 of Tainan County’s Shigang Elementary School.

Research Report Writing

After the collected data were compiled, coded, and analyzed, the researcher arranged the results, proposed conclusions and suggestions, and wrote a research report.

Action Process

Both the key part of action research and the core of this research report are focused on the account of the "process". Therefore, this section will present the teaching process of the integrated art lesson which combines "creative dance" and "DanceForms". Both the lesson itself and the teaching process will be examined.

Devising the Course Outline

During the initial stages of devising the course outline, content, and subject, the researcher and the two collaborators shared the same idea. That is, they intended to plan an integrated curriculum to merge the "creative dance" in movement education with the choreography software "DanceForms" in the lesson implementation of the "Arts and Humanities" curricular area.

Because the "Arts and Humanities" curricular area provides an extensive and comprehensive art education, students can learn to create, express, and share when they are involved in activities of art, music, dance, and computer. Furthermore, they will acquaint themselves with artistic culture and technological innovation. The three major course objectives of the "Arts and Humanities" curricular area in the Grade 1-9 Curriculum issued by the Ministry of Education are "exploration and performance", "appreciation and understanding", and "application and practice". According to this guideline, the researcher and two collaborators devised the course structure, content, and teaching goals of "Let's Dance". For the course outline of "Let's Dance", please see Table 2.

Table 2. Course Outline of "Let's Dance"

Theme	Let's Dance
Implement-ation Duration	Each week has two sessions (90 minutes). There are a total of 17 weeks, which amount to 34 sessions.
Course Areas	Arts and Humanities, Science and Technology
Overall Goals	1. To stimulate students to create more physical possibilities by means of guidance and induction so that they can fully understand their bodies and abilities. 2. To encourage students to develop personal creative behavior and try to "create" and "perform" through the expression of their ideas and feelings. 3. To help students understand and apply the exploration elements of creative dance: body, time, space, effort, and relationship. 4. To improve students' sensitivity to observations and feelings, expand their imagination, and enrich their aesthetic experience. 5. To stretch students' creative imagination, motivate them to learn, and increase their dance knowledge and learning efficiency with the help of comprehensive technological information and the combination of related materials, software, dance, and students' life experiences. 6. To improve students' abilities to think independently, solve problems, and cooperate with others so that when faced with a common problem, students can propose solutions to solve the problem.
Teaching Goals	∗**Arts and Humanities** 1-2-1 To explore all types of media, techniques, and forms and understand results of different creative elements so as to proceed to activities of artistic creation. 1-2-4 To utilize creative elements of sight, hearing, and kinesthesia for performances and expression of personal feelings and ideas. 1-2-5 To attempt to work, plan, and collaborate with classmates for activities of artistic creation. 2-2-7 To appreciate peers' artistic works of sight, hearing, and kinesthesia and be able to describe personal feelings and opinions toward other's creations. 3-2-13 To show proper manners and attitudes when watching an artistic performance and be able to sublimate personal feelings through appreciation of artworks. ∗**Science and Technology** 1-2-1 To understand life applications of information technology 2-2-2 To familiarize students with the operation of Microsoft Windows, usage of disks, management of computer files, and operation of CAI application software. 2-4-2 To understand peripheral devices of a multimedia computer and the integrated applications of icons, images, texts, animations, and voices. 2-2-3 To know how to use the keyboard and hotkeys and to be familiar with the English input method and one Chinese input method. 4-2-2-1 To comprehend the interactive relationship between personal life and technology.

Unit	Unit 1 Power of Nature – Earthquakes	Unit 2 Power of Nature – Wind (Cenglin); Water (Shigang)	Unit 3 I Am a Designer	Unit 4 Let's Dance
Learning Activities	∗ **Dance** 1-1 Introduction to dance elements 1-2 Using the body to imitate the shapes of tall and short buildings; quickly switching between shaking movements and static states; memorizing gestures. 1-3 Drawing inspiration from the picture book "The Fighting Mountains" and learning to create a work with others using dance elements ∗ **Computer** 1-1 Playing a demo to introduce the choreography software DanceForms to be used in class; understanding each function on the DanceForms screen 1-2 Learning to start DanceForms and operate the figure editor, the movement scroll bar, and the time scroll bar 1-3 Learning to manipulate the joints of figures with the figure editor 1-4 Being able to complete data reading and	∗ **Dance (Cenglin)** 2-1 Learning different aspects of swinging and rotation in static and dynamic states and elements of movement such as crescendos and decrescendos. 2-2 Using body parts to demonstrate the motion of breezes and gusts; designing a swinging and rotation movement containing four 8 beats. 2-3 Using the software to design 3D horizontal and vertical movements 2-4 Using the body to feel the different textures of three movements: light gas, firm solid, and smooth liquid 2-5 Using the body to demonstrate different states of water; cooperating with others to design physical movements that represent swirls and springs ∗ **Computer** 2-1 Learning to change the duration of a designed movement and reverse it 2-2 Learning to	∗ **Art** 3-1 Pasting leaves picked up from around campus onto a piece of drawing paper; creating stage scenery with the entire class; expressing feelings about nature using acrylic paintings 3-2 Experiencing stone prop making and clothes sewing (Cenglin) 3-3 Using "water" as the theme to paint stage scenery with the whole class (Shigang) 3-4 Shaping one's ideal creative future city in diverse appearances with soft paper clay 3-5 Representing natural images in painting; making costumes with paints 3-6 Creating invitations	∗ **Dance** 4-1 Performance practice 4-2 Performing to the audience a complete choreographic work designed in class over the semester ∗ **Computer** 4-1 Completing a 30-second DanceForms choreographic movement with the instruction sets and dance moves one has learned 4-2 Learning to increase/decrease the number of figures; drawing on the computer the movement demonstrated by the teacher 4-3 Using the body to perform the choreographic work designed by the whole class; trying to continue with the dance moves after all the movements learned from the computer have ended 4-4 Compiling all the choreographic works completed on the computer in class over the semester and performing them in groups; imitating the dance

	storage independently ✱**Music (Cenglin)** 1-1 Experiencing the feelings of hitting different musical instruments, such as tambourines, hand drums, triangles, congas, and cymbals.	copy, paste, and cut; prolonging the duration of a movement ✱**Music (Cenglin)** 1-1 Providing accompaniment with a musical instrument of one's choice for classmates who perform "earthquakes" 1-2 Using different tones and speeds to recite wind-themed sentences as background music for classmates who perform "wind"		movements on the computer and then performing with them simultaneously ✱**Art** Face painting using nature as a theme.
Number of Session	10	10	6	8
Evaluation	Worksheet: Drawing an ideal future city Computer work: Choreographing a 30-second shaking movement for a single body part	Cenglin Elementary School worksheet: Writing 5 sentences beginning with "The wind is like…" Shigang Elementary School worksheet: Writing 5 sentences beginning with "Water is like…" Computer work: Adding a 30-second personal choreograph into an interval between two dance moves	Worksheet 1: Making an ideal future city Worksheet 2: Painting the clothes of nature Worksheet 3: Making stone props and stage scenery (Cenglin); Making stage scenery (Shigang) Worksheet 4: Making invitations	Computer work 1: Completing a 30-second choreographic creation Computer work 2: Memorizing gestures in others' works Feedback from Performance

Lesson Implementation and Examination

First Lesson Implementation

a. Unit 1: Power of Nature – Earthquakes

Dance: The teacher enabled students to experience and explore dance elements (speed, strength, and balance), and encouraged them to talk about architectural shapes they had seen and their earthquake experiences. Based on the discussion, students were asked to use their bodies to imitate the shapes of tall and short buildings and perform shaking movements and static states. Finally, students memorized the gestures they had created step by step. In the third week, inspiration was drawn from the picture book “The Fighting Mountains”. Students were divided into two groups to discuss the ending of the story. They later decided to use “volcanic eruption” as the theme of their group creation for physical practice. From the third to the fifth week, everyone began with experiencing the feelings of hitting different musical instruments. Later, students chose the musical instrument they liked and produced a work that combined a creative accompaniment with the performance of “volcanic eruption”. Computer: Students familiarized themselves with starting DanceForms, understood each function on the DanceForms screen, and learned to operate the figure editor and complete data reading and storage. In this unit, the joint movements students designed with the figure editor were derived from their personal experiences of shaking movements in the dance lesson.

Discovery

Dance: Because there were no dance studios available in this particular school, the dance lesson was held in the class’s home room (with terrazzo flooring). When the teacher was guiding students through movement exploration, she had to alert students to pay attention to their safety and the surrounding area so that they would not hit the floor, the desks, or the chairs in the classroom. In addition, because it was the first time for students in this class to come across creative dance, they were noticeably physically shy during the first two weeks, when open and exploratory teaching was conducted. Boys and girls were rather timid when they had to work together.

As a result, their movements lacked diversity and creativity. "In terms of exercising their bodies, students focused more on their limbs than on their joints. It was a pity that they seldom bended or twisted their joints. However, some students were willing to try under the guidance of the teacher. That was something to be pleased about (Diary TA-0929)." "I love using different parts of my body to dance. It is interesting and great fun (Feedback SA301-10-5)." As the teacher provided more movement guidance and verbal advice, students were gradually able to enjoy exploring a space with their bodies.

Computer: "When operating a computer, most students were unfamiliar with the cursor, keyboard, and input of Chinese characters and English letters, so they needed the teacher at their side to help them. In addition, the English content of the programs posed a linguistic difficulty to students, so they had to practice using the system once I finished explaining and demonstrating a step (Diary TA-0915)." "Students' levels of computer skills were varied. The English version was very challenging for students, so the teacher had to offer help as much as possible (Observation OA-0915)." As such, it is evident that these two reasons were a cause of difficulty for the students. One was that these third-graders had just been exposed to a computer lesson in the previous semester. They were still unfamiliar with how to properly operate a computer, and they only had basic computer skills. The other reason was that the particular version of DanceForms used was an English version.

Examination and Adjustment

Dance: When offering guidance to students, the teacher added a wide variety of verbal advice and gestural vocabulary, encouraging students to explore more physical possibilities of dance elements. If a student had a commendable achievement, the teacher verbally praised him/her at an appropriate time. In addition, this student could be asked to share his/her movements with the class. This will build this given student's confidence and offer an opportunity for other students to appreciate and learn a new movement. "I sometimes danced very well. When the teacher praised me, I felt that I had danced even better than before (Feedback SA301-11-2)." By the end of this unit, some students had developed physical movements with diverse layers, levels, and creative shapes. This phenomenon was observed in the

physical movements of "volcanic eruption". "Today, students experienced the shaking and moving of different architectural shapes. The shapes they formed this time were a lot more solid than last time. There were a variety of layers in the shapes formed by two-person groups. Boys and girls were no longer shy about cooperating. Everybody was thinking hard to change the architectural shape of their group. Their body language was indeed more varied (Observation OA-1103)." After paired cooperation no longer became a hindrance (due to gender consciousness), every group member was able to support each other and work hand in hand to complete a dance phrase.

(Photo 1103-5595)

(Photo 1117-5645)

Computer: Students were unfamiliar with computer operation, and the English in the programs posed a large challenge to the students. As a result, the teacher adjusted her teaching of instruction sets as she proceeded. She asked students to write down on their worksheets the Chinese and English instruction sets they learned in a given class. This would serve as a point of reference when students practiced the operation. In the second teaching session, the teacher made a table that juxtaposed the Chinese and English terms of DanceForms' each window function. This table was stapled to students' exercise books so that they could refer to it under the teacher's guidance when operating DanceForms.

b. Unit 2: Power of Nature – Wind

Dance: Students learned different aspects of swinging and rotation in static and dynamic states and elements of movement with various levels of strength. To demonstrate the motion of different types of wind, they wrote 5 sentences beginning with "The wind is like…" on their worksheets and used their bodies to represent the states and shapes of wind described by words.

At the end of this unit, students were divided into the "volcanic eruption" group and the "wind" group to create two types of dance that mimic nature.

Computer: Students used the wind speed they experienced in their dance lesson and learned to change the duration of the movements they had designed. They also prolonged the movements by dint of functions such as copying, pasting, cutting, and movement reversing. Music: Students in the "wind" group played musical instruments of their choice to serve as an accompaniment to the performance of the "earthquake" group. Students in the "earthquake" group selected sentences beginning with "The wind is like…" and recited them in different tones. The recitation served as the background music of the dance performed by students in the "wind" group.

Discovery

Dance: In the third session of this unit, students in the "volcano" group and the "wind" group began to practice dancing separately. They conducted phrase connection and choreography outdoors and in the classroom respectively. "While the "volcano" group went outdoors, students in the classroom were reciting a sentence which said 'The wind is like waves'. These students were enjoying themselves when they moved their bodies. I also saw that they kept trying different levels of movements (Diary TA-1124)." "Because the room became more spacious, students had more freedom to move their bodies in a given space. This change of environment often inspired students to produce new ideas and movements in addition to their previous dance moves. They also kept asking the teacher 'Is this alright?' (Observation OA-1124)" Because the "volcano" group was making real contact with the ground outdoors, the number of students in the classroom decreased. In this way, students were allowed more freedom to exercise their bodies and to take advantage of a given space. This indicates that sufficient room for dancing can provide students with more safety and freedom when conducting physical exploration.

Computer: Because of the system renewal of school computers and a field trip, students were unable to use computers for four weeks. Although they had to familiarize themselves with the operation again, students still learned with keen interest. "The computer lesson was discontinued for nearly one month. I was afraid that the students would forget everything, so today I focused on reviewing the instruction sets I had taught them. They operated the windows on the

computer excitedly and kept playing with previously taught instruction sets. I saw that my students were able to quickly familiarize themselves with these instruction sets, so I issued a reversed instruction for the schedule (Diary TA-1124)." It was found that intriguing and novel materials can arouse more interest in learning from the students.

Music: Students in Cenglin showed a considerable degree of interest in percussion instruments. "Originally, I knew nothing about playing the drums, but in this art lesson I learned how to beat a drum. That was the most unforgettable experience for me (Feedback SA301-13-6)." In fact, the time spent on helping students experience rhythms and percussion was one session more than the scheduled duration. Because some of the musical instruments were totally unfamiliar to students, extra time was needed for practice and rhythm memorizing. "The teacher spent about ten more minutes per session on instrumental experience to enable students to get the main point of percussion. Today we proceeded to the accompaniment stage. Students had got the main point of percussion and were able to observe the movements of their performing classmates. In this way, music can harmonize with dance (Observation OA-1215)."

Language Arts: Worksheet *SA301-6-1103* and worksheet *SA301-2-1103* show the remarkable language achievements of two students' which are especially praiseworthy. The words and phrases were well chosen and indicated the writers' careful attention to details. These two students were more reserved and shy about demonstrating their physical movements, so they needed a longer period of exploration and preparation to produce a rich gestural vocabulary. However, they were delighted that they could use their bodies to deliver the meaning of their written words, crystallize their ideas in action, and even add new elements to their gestural vocabularies based on their movements and thoughts. From this example, it can be concluded that the use of guidance medium in dance education is extensive and diverse. Teachers must recognize individual differences between students and adapt their teaching methods to best suit the unique aptitudes of each individual student.

Examination and Adjustment

Dance: Two reasons resulted in the fact that the two groups only got to watch each other's performance after they finished their individual works.

The first reason was that one session was canceled due to a field trip. The teacher had to speed up to keep the lesson on schedule. The second reason was because of limited space. Students in the "volcano" and the "wind" groups had to practice dancing on the playground and in the classroom respectively. Such a lack of interaction showed that the lesson had deviated from the educational philosophy of creative dance education, which emphasizes the process itself. "The two groups of students did the last choreograph separately. I did not get to see how students in the 'wind' group combined words with dance when they did it. I could only watch this part on the video. However, it was a pity that students in the 'volcano' group did not manage to watch it at all (Diary TA-1215)." In addition, students' worksheets showed that the "volcano" group and the "wind" group could only comment on their individual experiences because they did not have the chance to see the creative process of the other group. The teacher should have tried to involve every student in creation, appreciation, and sharing within a limited time and space.

Computer: Because the lesson was behind schedule, the teacher focused on reviewing instruction sets and familiarizing students with the operation. She also asked two collaborators to help students who were less able to operate the system. Students were allowed to watch their DanceForms creations and perform movements at the same time so that a link was established between their dance moves and the gestural ideas on the computer.

c. Unit 3: I Am a Designer

Art: Students learned to make stage scenery, stone props, costumes, and invitations. They also experienced the process of sewing clothes, shaped their own future cities, and painted them.

Discovery

"Students were more cautious when they had just started painting because they were afraid of making mistakes. At this stage, they kept asking the teacher for advice. The teacher would encourage students to shed their inhibitions and draw as bravely as they could. As long as they did not waste the paints, they could use them in whatever way they liked. After hearing the teacher's words, students began to

lose their timidity and were keen on mixing different colors (Observation OA-1013).” With the “Autumn” in Vivaldi’s *The Four Seasons* playing in the background, students used their paintbrushes to draw pictures on six pieces of folio-size drawing paper. At first they painted on a small area of the paper; in the end they were able to draw on the entire paper. When students were drawing, they expressed their feelings and the content of their drawing at the same time. “When students were making cards, I found that boys splashed paints on large areas. Their color schemes were bold and lively. In contrast, girls were very particular about the neatness of outlines and colors (Diary TA-0105).” During the art lesson, boys were more open to challenges and more willing to try new things, whereas girls were more meticulous about details. In terms of creativity, boys acted on the spur of the moment, while girls took action after making careful observations.

Photo 1013-2227 Worksheets SA301-2-1013 and SA301-5-1013 showed works saturated in lyricism.

Examination and Adjustment

In the making of future cities, invitations, and costumes, painting was not the only task that took time. When students were exercising their imagination, they needed much more time to form ideas, design elements, and produce works. Therefore, when it comes to schedule planning and time management, the highest priority should be placed on students’ creations. Teachers are advised to refrain from urging students to finish everything within a short time in order not to lose the essence of creation.

d. Unit 4: Let’s Dance

Dance and Music: Students performed their choreographic works after revising, rearranging, and memorizing the dance steps. Computer: Students completed a 30-second choreographic movement by combining all of the

instruction sets they had learned and creations they had devised in their dance class. In the end, they were able to perform a choreographic work designed by the whole class, dance simultaneously with steps shown on the computer, and help the audience learn how to operate *DanceForms*. Art: Students took part in face-painting with classmates and displayed their artwork.

This unit was an integrated learning which combined the four elements of art curriculum over the semester: dance, computer, art, and music. The accomplishment exhibition was also a part of the lesson. Because students participated in dance performances, *DanceForms* operation, and demonstration of art, music, and poetry in person, they gained an extraordinary sense of accomplishment and self-confidence (Feedback SA301-1-5, Feedback SA301-3-5, Feedback SA301-6-5, Feedback SA301-8-5, Feedback SA301-10-5, Feedback SA301-11-5, and Feedback SA301-13-5).


Photo 0119032, Video 0119

Second Lesson Implementation

The researcher discovered that a lack of time and appropriate venue were two problems encountered during implementation of the first lesson. After discussing with the two collaborators, she decided to retain the 17-week lesson plan in Shigang Elementary School. However, the percussion experience activity would be canceled; the accompaniment to dance would be replaced by music of different styles; the dance experience would instead be comprised of “earthquakes” and “water”; the picture book activity would be canceled; the computer lesson would be adjusted according to students’ actual operational abilities in Shigang Elementary School; and the session in which a teacher outside of academia was invited to teach would be taken from the art lesson. In terms of venues, Shigang Elementary School had initially planned to provide the school’s auditorium. However, because another dance instructor would be teaching rhythmic

movement to first and second-graders in the auditorium, the lesson was later rescheduled to take place in a kindergarten office with wood flooring.

a. Unit 1: Power of Nature – Earthquakes

Discovery

Dance: The school's administrative oversight led to the change of venue from the playground and the kindergarten office to the auditorium. "There was a lot of direct sunlight at the playground, so most students were unwilling to touch the ground with their bodies when I guided them through physical exploration. They complained about the heat and gave up quickly after making one or two attempts. Therefore, I performed the same gestures with them. Even if they had to touch the ground, I did it with them (Diary TB-0223)." "The kindergarten office was really small. No spare space was left even when all the students stood. Students could not conduct physical exploration at all, and they were easily distracted because the environment was new to them (Observation OB-0302)." Students were unable to steadily build up their physical experiences. They were still more comfortable with forming shapes with their limbs straightened and lacked spatial concepts. The school's auditorium was large. Students from other classes often passed nearby, so it was difficult for students in this class to concentrate on the dance lesson. The teacher had to keep reminding them of the space available to them. Computer: Students in Shigang Elementary School were rather experienced in operating computers. Apart from a few students who needed the teacher's help (CB-020203, CB-030203, CB-120203, CB-170203, and CB-200203), other students could easily keep up with the pace of the schedule.

Examination and Adjustment

During the second week, the teacher reported problems about the venue to the school authorities. After making sure the class was to take place in the auditorium, she negotiated with the other class, and that class agreed to move to another venue. In this way, students were less likely to be distracted. In addition, to keep the class in order, the teacher used chairs to mark the confines of the dance area, reminded students of the class rules at the beginning of each lesson (Diary TB-0302, Observation OB0302, Diary

TB-0309, Diary TB-0316, and Observation OB-0316), and asked her assistants to help maintain order. By the end of this unit, there were still no noticeable improvements in the students' ability to concentrate or physical exploration. As a result, the teacher opted to spend more time on movement exploration. The teaching goal for the theme of earthquakes was to enable Shigang students to form architectural shapes of different layers and levels.

b. Unit 2: Power of Nature – Water

Dance: Accompanied by three different types of music, students used their bodies to feel the different textures of water's three states: light gas, firm solid, and smooth liquid. They also cooperated with others to design and perform physical movements that represent swirls and springs. After the whole class experienced and appreciated the performance as a group, the teacher divided them into two performing groups: "three states of water" and "swirls". Computer: Students learned to change the duration of a designed movement, reverse it, copy it, paste it, cut it, and prolong the duration of a movement. After they finished the movement editing, they performed their creations with their own bodies.

Discovery

Dance: Emphasis of light gas was placed on stamping and jumping steps, which were exercising movements provided by the teacher. In comparison, solid and liquid required students' innovative demonstration. Because these were subjects familiar to students, they were able to fully grasp concepts of the three states in their movement performance. It could be observed that students' performance of gentle movements was exceptional. However, in terms of creative physical shapes, while some students could understand the application of dance elements, other students were unable to exercise their imagination and dance freely (Observation OB0420, Observation OB-0518, Diary TB-0420, Diary TB-0427, Photo 04209924, and Photo 05110292). Computer: Students were becoming more and more familiar with computer operation. They had designed three shapes of water's three states in their dance lesson. Now they could draw these shapes with *DanceForms* and continue with the choreographic movements (Diary TB-0427, CB-010427, CB-040427~CB-0100427, and CB-210427~ CB-260427).

Students believed that *DanceForms* helped them exercise their imagination, learn dance steps, and discover the limitations of their bodies (Feedback SB304-1-3, Feedback SB304-3-3, Feedback SB304-5-3, Feedback SB304-6-3, Feedback SB304-8-3, Feedback SB304-13-3, Feedback SB304-14-3, Feedback SB304-16-3, Feedback SB304-19-3, and Feedback SB304-25-3).

Examination and Adjustment

Through these dance and computer lessons, the teacher discovered that Shigang students were used to completing their works by learning from previous movements. As a result, there was some repetition of standard gestures. Looking back on students' past physical experiences, the teacher found that they merely imitated dance steps in a mechanical manner. This differs from creative dance, which values discovery as a way of learning. In response to this situation, the teacher decided to guide students through movements and provide them with visual images to stimulate their imagination. In addition, the teacher used guiding mediums such as contextual dialogues, props, and music to bring out more creativity in the students.

c. Unit 3: I Am a Designer

The teacher learned a lot from discoveries and examinations while implementing the first lesson. As a result, the art lesson in Shigang Elementary School was smoothly conducted and completed on schedule. During the session in which students painted stage scenery, students in the "three states of water" group did the dancing while those in the "swirls" group drew what they saw and felt. The "three states of water" group had the chance to draw later on, and vice versa. Through the appreciation of dance works, students drew their feelings on the canvas and integrated their learning experiences. To students, the activity of work production in the art lesson was impressive. They also thought they had learned a lot (Feedback SB304-3-5, Feedback SB304-11-5, Feedback SB304-12-5, Feedback SB304-3-5, Feedback SB304-16-5, Feedback SB304-20-5, Feedback SB304-23-5, and Feedback SB304-26-5).

d. Unit 4: Let's Dance

Students performed their dance and computer works in the school's auditorium in the last week after revision, rearrangement, dance step memorizing, and practice. Through the integrated learning of art curriculum, students developed a deeper understanding and love of it. They were all rather excited and impressed on the day they performed their works (Diary TB-0630, Observation OB-0630, Video 0630, Feedback SB304-8-5, Feedback SB304-13-5, Feedback SB304-18-5, and Feedback SB304-24-5).

From the art curriculum, which combines computer, dance, visual arts, and music in the two curricular areas of "Arts and Humanities" and "Science and Technology", it was found that the second lesson implementation of the creative dance lesson helped students understand the diversity of dance steps from their experience of dance elements. Students also had fun in self-creation and group cooperation. When they were stuck in a movement creation, they could use *DanceForms* as a visual tool to give them ideas by means of the figures' 3D movements. In addition, because students learned to perform dances with their bodies and had kinesthetic experiences with *DanceForms*, they could turn their feelings into works of visual art.

A richly integrated art curriculum provides students with various ways of intelligence development and learning. Every student is able to realize and apply their interests and talents in different fields. What they receive is a meaningful experience of artistic integration.

Conclusion and Suggestions

This study is an action research and is aimed at discussing whether an integrated art curriculum which combines "creative dance" and *DanceForms* can offer students a learning experience of integrated art, stimulate their movement creativity with creative dance, and improve their ability to use the choreography software *DanceForms*. Results were evaluated after lesson planning, lesson implementation, observation, video recording, feedback, and performances. Conclusions and suggestions are as follows:

Conclusions

Creative dance lives up to the spirit of integrated pedagogy.

This study implemented an integrated curriculum which combined creative dance and *DanceForms* in the “Arts and Humanities” and “Science and Technology” courses of elementary schools. This curriculum offered a chance for learners to learn creation, expression, and appreciation. Learners also became familiar with dance elements and the choreography software *DanceForms* to achieve the lesson goals of exploration, performance, appreciation,comprehension,implementation, application, and understanding the interactive relationship between personal life and technology. Creative dance teaching provides a process for learners to conduct physical exploration, improve awareness, and gradually develop individual creative vocabulary for the body. In addition, *DanceForms* gives learners visual gestural ideas so that they can incorporate musical accompaniment into their creations based on the movements they know. Such an integrated pedagogical model will help learners to develop multiple skills, integrate different learning experiences, and broaden their artistic perspectives. Therefore, it comes close to the concept of integration in the Grade 1-9 Curriculum.

DanceForms can be a tool for movement transformation and gestural idea expression.

DanceForms offers students lacking experience in creativity or those who are physically shy a way of expressing personal gestural ideas through computers. It can also serve as a tool for transforming visual images into gestural ideas. By means of sketching movements, *DanceForms* helps students expand their gestural vocabulary and inspire them to add new elements to it. Students can even understand their physical and gestural possibilities through their experience of transforming visual images into movements. As a result, *DanceForms* can serve as a technological tool for storing gestural ideas and providing visual guidance in dance teaching.

Integrated curriculum provides multiple ways of evaluating students.

This study is comprised of four learning elements: dance, *DanceForms*, art, and music. Worksheets were designed to tackle physical performance, writing, painting, and artistic works so that learners could record and show in different ways a given course content and their opinions on it. In addition, instructors were able to clearly understand learners' learning conditions in terms of cognition, emotions, and skills. With multiple ways of evaluation, instructors could assess learners in the respects of physical performance, *DanceForms* operational skills, artistic works, and music application. Learners' performance and learning conditions could also be understood.

Suggestions

Schedule Planning

Art education is characterized by multifacetedness and diversification. In the learning of art curriculum, time is necessary for exploration, understanding, thinking, and creating. Only when time is sufficient can one truly experience and understand the essence of art. The researcher suggests that an art curriculum should contain at least two consecutive sessions each week in order to provide teachers with enough time for guidance, activities, sharing, and appreciation. Another advantage is that problems resulting from an excessive number of students can be mitigated.

Appropriate Venue

In terms of facilities, lessons of performing arts need an appropriate, safe, comfortable, and professional art classroom for the use of teachers and students. "Arts and Humanities" lessons in the Grade 1-9 Curriculum have been implemented for several years, but we have yet to see this problem taken seriously by authorities in any related educational units. I would like to advise educational authorities to understand the needs of performing arts, provide a professional art classroom for each school, and install safe and appropriate flooring so as to extend the performing arts teaching of "Arts and Humanities" in the Grade 1-9 Curriculum to more schools.

Effective Use of Performing Arts Resources

Attempts to provide performing arts programs at school often encounter difficult situations in which either no trained performing arts teachers are available or teachers are not qualified to teach performing arts and do not know where to seek help. With regards to availability of specialized teachers, school authorities can inquire about performing arts teachers, dance training, and artistic activities at nearby universities and colleges with dance departments. In addition, many art groups in Taiwan visit campuses in the countryside on tour or offer teaching assistance as resident art groups. Through the assistance of professional performing arts teachers or art groups in the teaching of performing arts, school teachers can act as collaborators to improve their expertise, artistic knowledge, and ability to teach performing arts.

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