Evaluation on

"Quality Thematic Network (QTN) on Drama in Education"
The Annual Report (2008-2009)

Submitted by

Anna Hui, Ph.D.
Assistant Professor

Esther Lay
Research Assistant

Department of Applied Social Studies
City University of Hong Kong

To

Ming Ri Institute of Arts Education

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This first year report evaluated the effect of drama education on students and teachers from kindergartens, primary schools and a special school who had taken part in the project entitled “Quality Thematic Network (QTN) on Drama in Education” (QEF) from Sept. 2008 to Dec. 2009. Special thanks are due to the participating schools and the student research assistants taking part in the study. All correspondence of the report should be addressed to Dr. Anna Hui, Dept. of Applied Social Studies, City University of Hong Kong, Tat Chee Avenue, Kowloon or annahui@cityu.edu.hk.

Abstract

In Hong Kong's recent curriculum reform, creativity has been identified as a generic skill to be nurtured in our students of all levels in the key learning areas, including arts education. The present study evaluated the effects of a drama in education project on both students and teachers. Teachers from kindergarten, primary and special schools took part in a 24-hour teacher training program on drama in education. Teachers also received support in lesson planning on drama enhanced learning to the classes they were teaching. Students were randomly drawn from these classes to form the experimental group (83 kindergarten students; 55 primary school students; 15 special learners) whereas students from the same schools but were not taught by these teachers took part in the study as the control group (20 kindergarten students, 30 primary students, 10 special learners). A total of 58 kindergarten teachers and 38 school teachers from primary and special schools completed both the pretest and posttest. Significant differences were found in the teacher-perceived dramatics characteristics in the experimental group of kindergarten students. Preschoolers who displayed more dramatics and creativity characteristics outperformed those with fewer characteristics in their verbal expression in story telling. Primary students in the drama training improved significantly in clarity of expression and creativity. Special learners also added more conversations and dialogues in their stories and offered more solutions to solve problems. Significant positive effects were also found in the creative fostering teaching technique of all groups of teachers involved in the training. They encouraged their students to become independent and cooperative learners, accepted students' ideas and provided them with try out opportunities. They also showed long term commitment to drama in education. Limitations and future directions were discussed.

中文摘要

創造力是近年教育改革下所提倡的一項共通能力，建議在各個的學習領域中，包括：藝術教育，培訓各級學生的創造力。本研究評估了戲劇教育培訓，對學生及教師的成效。幼稚園、小學及特殊學校教師透過二十四小時的戲劇教育教師培訓，然而和戲劇教育導師一起策劃以戲劇輔助教學的課程設計，並且進行試教。實驗組的學生，共 83 位幼稚園學生、55 位小學生及 15 位特殊學生隨機從參與培訓計畫的老師任教班級中抽出，而控制組的學生，有 20 位幼稚園學生、30 位小學生及 10 位特殊學生則由其他老師的同級不同班中隨機抽出。教師組則有 58 位幼稚園老師及 38 位小學及特殊學校老師參與，並且完成前、後測的問卷。結果顯示實驗組的學生，經過戲劇教學後，幼稚園老師觀察他們的戲劇特質較控制組的學生明顯地高。本身具較高戲劇特質和創意特質的幼稚園學生，他們在講故事的口語表達能力亦較戲劇特質和創意特質低的學生明顯地高。參與戲劇培訓的小學生則在口語表達清晰程度及創意方面，較控制組學生有更好表現。實驗組的特殊學生比控制組的學生，在故事中加入更多的對話元素和提供更多的解難方案。至於教師方面，戲劇教育培訓能有效提升幼稚園、小學及特殊學校教師的創意教學風格。教師更懂得鼓勵學生獨立和合作地學習，他們願意接納學生的意見和提供嘗試的機會。這些教師對在校內推行戲劇教育亦有長遠的承擔。研究的限制和未來方向亦會討論。

1. Introduction

More than a hundred of experimental studies tried to prove the existence of a relationship between drama education and academic variables over the past three decades. All of the studies held a common theme, believing that dram education can improve students' ability in other academic areas, such as achievement, oral, reading, as well as writing skills (Podlozny, 2000).

When we looked back into local situation, it can be seen that educators, policy makers and even teachers and students recognize the importance and effectiveness of art education in cultivating students' creativity and communication skills. According to the latest edition of curriculum guide on art education of Hong Kong (Curriculum Development Council, 2002):

"Arts Education helps students to develop creativity and critical thinking, nurture aesthetic sensitivity, and build up cultural awareness and effective communication. Arts education is well recognized as one of the most effective means to nurture creativity."

The document also stated that schools are encouraged to assist students in achieving the aims of Arts Education as stated above. Being educational psychologists, however, hold one more responsibility in enriching the literature on understanding the

effect as well as limitations of such implementation in the local setting. This study aimed at trying to investigate in the effect of learning through drama on students' creativity and communication skills. Teachers' feedback on the implementation of drama in education as creative practices and creativity fostering teaching style were also addressed in the study.

1.1 Learning through Drama

Arts Education is a broad subject includes visual arts, dance, music, and drama, etc. Drama can stand on its' own as a subject, but more often, it falls into one or several modules in the school curriculum of integrated arts. Drama can also be used to assist the learning of various academic subjects such as languages and mathematics. By incorporating drama strategies into the teaching and learning of these subjects, creativity was found to have enhanced and learning motivation was found to have increased. An example is the use of gesture to express abstract words in learning a second language. This kind of practice is called "learning through drama". This was the teaching strategy that was examined in this study.

1.2 Effect of drama education on students

As mentioned above, many studies aimed to examine the benefits of drama education although some have not reported great impact. In the meta-analysis conducted by Podlozny (2000), drama education was effective in raising students'

reading achievement as well as oral language. Although the results were not statistically significant, vocabulary was found to have improved. In another study conducted by Duatepe-Paksu and Ubuz (2009), it was found that instruction that was delivered in the form of drama increased achievement and attitudes of students in geometry learning. This improvement was found to be unaffected neither by gender nor by students' attitudes in the past. However, Winner and Cooper (2000) did not have a conclusive finding that arts study had a causal link to academic achievement, such as verbal and mathematical scores.

Some other demographic variables, such as the age and types of students, were also important concerns in the studies of drama education. Kardash and Wright (1986) found that younger but not older children, typical instead of special students, benefited more as indicated by the stronger relationship between drama education and the varied outcomes measured in the studies. Also, it was found that as the time of drama instruction increased, the strength of the relationship also increased. This result was supported by another study conducted by Conard (1992).

The most encouraging finding of these studies was the transfer of benefit of drama education to other academic domains. Students were not only trained to be better in handling texts or stories they had encountered or enacted before, they also out-perform their non-drama peers on new materials that they have never encountered

before (Podlozny, 2000). As early as 1986, Kardash and Wright also noticed the transfer effect. They reported in their meta-analysis study that drama education was not only positively related to reading and oral ability, but also to moral reasoning and self-esteem. This adds value to the study of drama education, due to many of its latent benefits. It is believed that besides the known direct benefits on academic domains and indirect benefits, such as creativity and communication skills, more benefits of drama education could be found through carefully-designed studies.

1.3 Other benefits of drama education

The training that students receive in the process of learning through drama is not only beneficial for their learning, it is also found to be beneficial in the development of characteristics in human kind. Drama training often encourages students in trying to understand the inner thoughts of characters. This may help students to develop thinking in another perspective (Goldstein, 2009). In the acting process, empathy was also found to have enhanced. Empathy here is defined as the ability to feel another's feelings (Bryant, 1982). Nettle (2006) found supportive evidence. It was also found that professional actors scored higher in the Empathy Quotient (Baron-Cohen & Wheelwright, 2004), which was used to measure affective empathy, than the control group. And in drama training, actors were trained to control their emotions. This ability was coined as emotion regulation in the field of psychology (Gross, 2002). In

sum, drama training is believed to enhance learners' perspective taking, empathy and emotion regulation ability, which are exactly traits that our spoiled younger generation lacks. Nevertheless, insignificant findings were found in other studies, such as Freeman, Sullivan and Fulton (2003). They could not have significant improvements in self-concept, problem behavior and social skills of Grade 3 and 4 students after taking part in a 18-week creative drama activity.

1.4 Theory of drama education

According to cognitive psychology perspective, learning would be most effective if students were constructers of their own knowledge. This is also the main theme of constructivism, in which the learner constructed their knowledge by integrating the new experience into his/her past experience. In this model, teachers have the role to help students in processes of constructing and developing their existing knowledge (Duatepe-Paksu & Ubuz, 2009). Parallel to the constructivist view, learning through drama provides students with chances to construct their own knowledge as dramatic play is closely related to children's mental activity (Piaget, 1959). During the process of plays, the concept is role-played and the story is enacted in ways as a reflection from the experiences of the individuals, instead of developed simply from being spoon-fed (Bolton, 1986). Learning through drama does not only provide students with chances for imagination, it also provides practical experiences from being

process-oriented (Duatepe-Paksu & Ubuz, 2009; Morgan & Saxton, 2001).

Apart from constructivist point of view, the humanistic theory (Rogers, 1983) can also be used to predict various benefits that drama education has on students. The student-oriented teaching approach adapted in drama education (Courtney, 1990; Wilhelm, 1998), creates a more accepting, free, and open atmosphere in classrooms. This can help to foster different ideas and behaviors that would be accepted to a higher degree when compared with what happens in a structured classroom. With the respect provided by other individuals in the classroom setting, self-actualization takes place easier and the self-esteem of students were believed to be able to be enhanced (Kitson & Spiby, 1997).

1.5 Teachers' role in drama education

Whilst the benefits of learning through drama for students were examined a lot, little has been done with the possible benefit that teacher would gain, or the difficulties they encountered during the implementation of this creative form of teaching. According to the curriculum guide of Arts Education of Hong Kong (Curriculum Development Council, 2002), teachers were responsible for students' development of creativity, critical thinking and communication skills through the teaching of art subjects. It is teachers' responsibility to make drama an interesting subject (Kitson & Spiby, 1997).While giving lesson on drama, teacher also bears a

role as a performer. It is not an easy job, as Biggs (1999) had stated, the most demanding scene for an actor is those when it requires them to act alone. It adds challenges to the job when students' creativity response has to be encouraged, but on the other hand the order of the classroom could not be sacrificed.

The place of teacher in the development of students' creativity should not be questioned (Gardner, 1993). In the study conducted by Kampylis, Berki & Saariluoma (2009), majority of both in-service and prospective teachers agreed that teachers play a role in enhancing students' creativity. However, they also felt that they were not well-prepared and confident enough in achieving this. This was coherent with the finding of Torrance and Safter (1986) in which the author stated that the teachers were "ill-equipped" in facilitating students' creativity expression. On the other study, teachers were found to value creativity on one hand, but not preferred the personality traits that often come along with creativity, which includes impulsiveness, risk taking behavior and independence of students, as revealed in teachers' self-report (Westby and Dawson , 1995). Study conducted by Fryer and Collings (1991) which involved about one thousand teachers and lecturers from England and Wales also found that the participants had diverse perception of creativity. These all maybe attributed to the little education about creativity that teachers received while they were still students (Mack, 1987). More recently, Davies, Howe, Fasciato, and Rogers (2004) expressed

the same view that teachers have a confined and stereotypic view of creativity and agreed that the attention given to creativity in teachers' education was not enough.

The discrepancy between teachers' concept and actual behavior may lead to "*inhibiting practices"* (Alencar, 2002) which maybe exhibited as stressing on the correct response, overly emphasizing on the reproduction of knowledge, underestimating students' creative potential, stressing the importance of obedience and passivity, devaluing fantasy and imagination. But it is believed that as teachers gain experience in drama teaching, these inhibiting practices will be eliminated.

The difficulties encountered definitely could not be solved alone by teachers. It requires the cooperation of many parties including school administrative, educators, government, and psychologists etc. But once the difficulties were being noticed, it is one more step closer to its solution. And the benefit for teachers should not be neglected. By incorporating dram into their teaching, it is believed that teacher-student relationship could be enhanced, due to the increased amount of communication between them. And drama is a good way to bring daily experience into classroom for teacher to give lively lesson. After all, teachers may take this chance to go through self-reflection with students and increase their own self-understanding.

2. Creativity

2.1 What is creativity?

There are many different ways to define creativity. Creativity can be understood from 4 perspectives known as the 4 P's (person, process, product and place) by Mooney (1975). Creativity can either be conceptualised as a person's ability or characteristic. It can be defined as a cognitive process in individuals to yield ideas or products which are innovative and appropriate to solve related problems. Finally, it can be applied to describe a social environment or a place which is facilitative to creative ideas and thinking to take place. Creativity is defined as novelty and appropriateness as suggested by Amabile (1996).

2.2 Developing creativity through education

Different suggestions were provided in the literature on ways to develop students' creative abilities. One of the ways to define creativity is by using the investment theory or later termed as confluence theory of creativity (Sternberg & Lubart, 1995). According to this theory, creativity results from the confluence of six distinct resources that are interrelated. These include intellectual abilities, knowledge, styles of thinking, personality, motivation, and environment. Intellectual skills include the skill to perceive problems in new ways, the ability to determine which ideas are worth their actions and the skills to persuade others of their ideas. Knowledge means being able to have enough knowledge in a certain area in order to expand the

expertise. Styles of thinking refer to ways that a person uses his/ her skills. Personalities such as willing to overcome obstacles, take risks, and tolerate uncertainty are as important as having self-efficacy in fostering creativity. Motivation that is intrinsic and task-oriented is also essential for creativity to be developed. Providing an environment that supports and rewards creativity is another important factor for creativity to develop. All these factors interact together to form the basis for the development of creative ideas. It was found that teaching techniques that stimulate both convergent and divergent thinking are important for students in developing creativity. Indirect teaching methods, such as inquiry-discovery and using a problem-solving approach is also useful for the cultivation of developing creativity, as discovery is viewed as a prerequisite for the development of creative thinking. The confluence theory has provided an integrative perspective to the study of creativity.

Another approach to develop creativity could yield evidence from the four-step model developed by Davis (1982). The four steps that are included in the model include awareness, understanding, techniques, and self-actualization. The model puts emphasis on increasing an individual's consciousness of creative thinking, which is the readiness and willingness to think creatively, as well as the usage of one's personal and standard creative thinking techniques, to cultivate and develop a creative mind.

Guilford (1950) reported that “a creative act is an instance of learning”, and that comprehensive learning must take into account of both insight and creativity. It was believed that our metacognitive abilities were related to creative thinking. This was supported by evidence found in students having more ability to gain control of what they have learnt when they were taught about the nature of his/ her own intellectual resources.

Creativity, according to cognitive theorists of learning, is a constructive process. That means that individuals construct their knowledge base as they think, and that we are constantly creating in our brains, which constructs our memory. Torrance’s (1979 & 1995) Incubation Model of Teaching provided a process in nurturing creative thinking and getting creative ideas in individual learners. The incubation process is the second step of Wallas’ (1926) creative process: preparation, incubation, illumination, and verification. The Incubation Model can be divided into 3 stages. The first stage is a warm-up stage called “heighthening anticipation” with objectives to arouse curiosity and the desire to know among learners. The second stage is “deepening expectations” when learners are encouraged to use various creativity-relevant strategies to relate the learning with themselves as individuals as well as their everyday experiences. The third stage is “keeping it going” is to providing opportunities to encourage learners to keep the creative thinking going by

investigating into real life problems, encouraging future projections, implementing experiments to testify hypotheses, and etc.

When the relationship of creativity and classroom environment was examined, it was found that the establishment of a "creative climate" (Davis, 1991) was important in stimulating creative thinking. According to the study, it is important to reinforce students having unusual ideas, and to accept and adapt students' ideas in the classroom whenever possible. It was also found to be important to allow enough time for students to think, so that they would be able to develop their creative ideas, as creativity does not always occur immediately.

Drama enhanced curriculum is an effective strategy to foster creativity in students. Morgan and Saxton (2001) explained that the approach of learning and teaching through drama would enhance students' reflective and adaptive skills and enable them to look into the problem from multiple dimensions. Drama education adopts an innovative approach to learning from a child-centered perspective (Bolton, 2001). Speech and drama specialists work together through the curriculum to improve communication and problem solving skills through creating drama.

2.3 Drama activities for special learners

Like students from mainstream schools, it is important for special learners to enhance their sense of selves through expressing oneself (Roy, 2007). Through drama

activities, students with special needs can gain self-esteem and improve communication skills (Jindal-Snape & Vettraino, 2007). Students can learn how to participate in imaginative-play and learn social skills through such activities. Drama can be used in empowering students and helping them develop self-advocacy, differing from traditional teaching methods. Special learners can learn about the social world and acquire appropriate emotional responses for social interactions through drama education.

2. Methodology

2.1 Participants

The study included five kindergartens and five primary schools that participated voluntarily in the drama project. The teachers received a drama training program for 24 hours and another 10 hours on-site coach supervision by a drama educator in designing a lesson enhanced with drama for their students. The teacher sample included 53 kindergarten teachers, 29 primary school teachers, and 15 special school teachers. The student sample consisted of 107 kindergarten students, 284 primary school students, and 40 special school students. Within the student sample, 107 kindergarten students, and 86 primary school students were randomly selected from the schools to participate in the story-telling test (STT) and all of the 40 special school students were invited to participate in the STT.

Owing to the outbreak of swine flu in May 2009, the post-test of primary school students was carried out from September 2009 to October 2009. This first year report included kindergarten students who had completed the pre-test in Dec. 2008 and the post-test in April 2009. The teacher participants, from both primary and secondary schools, completed the pre-test in Oct. 2008 and the post-test in May 2009. Of the selected kindergarten students, 83 were assigned to the experimental group, and 20 to the control group. A total of 58 kindergarten and primary school teachers completed both the pretest and the posttest.

2.2 Instruments

2.2.1 Students

Items adopted from Renzulli, Smith, White, Callahan and Hartmann (1976) Scales for Rating the Behavioral Characteristics of Superior Students, were used to access students' 1) Dramatics characteristics; and 2) Creativity characteristics. There were 10 items in each part Items were rated using a 6-point Likert-scale (from 1 = never to 6 = always). The questionnaire was administrated twice to compare the pre- and post-test score. For kindergarten students, teachers were responsible for filling in the form for the students based on the classroom observation of child's behavior. And only the first two parts, Dramatics characteristics and Creativity were assessed in kindergarten students by their teachers. For primary students, 2 additional subscales

were included, namely Communication characteristics (11 items) by Renzulli et al (1976), and Motivation for drama education compiled by the first author. The primary students filled in the questionnaire by themselves. Dramatics characteristic was measured by items such as “Volunteers to participate in classroom plays or skits”; Creativity was measured by items such as “Demonstrates imaginative thinking ability”; Communication skills was measured by items such as “Speaks and writes directly and to the point”; and Motivation for drama education was measured by items such as “Talks to my parents about what I have in drama enhanced class”. The reliability of the subscales as indicated by the Cronbach’s alpha were .92 and .94 in pre-test and .93 and .94 in post-test of Dramatics characteristic and Creativity respectively for kindergarten students. And for primary students, the Cronbach’s Alpha were .92, .91, .96 and .96 in pre-test of Dramatics characteristic, Creativity, Communication skills and Motivation respectively. As for special school students, the Cronbach’s Alpha were.96, .92, .85 in pre-test and .95, .94, .93 in the post-test of Dramatic characteristics, Creativity, and Positive emotional responses respectively.

2.2.2 Teachers

In measuring the effect of drama education on teachers, items adopted from Soh’s (2000) study were used. There were 45 items and every five items form a subscale. There were 9 subscales in total which were: 1) Independent learning; 2)

Cooperative learning; 3) Motivation in mastery of knowledge; 4) Suspended judgment; 5) Flexibility in thinking; 6) Self-evaluation; 7) Building on student's idea; 8) Opportunities for trial and 9) Positive coping with frustration. Items were rated in a 6-point Likert-scale (from 1 = never to 6 = always). And the questionnaire was administrated twice to give pre- and post-test scores. Example of items in subscale 1) Independent learning included "Encourage students to show what they have learned on their own"; and in 2) Cooperative learning included "Students have opportunities to share ideas and views"; and in 3) Motivation in mastery of knowledge included "Learning the basic knowledge/skills well is emphasized"; and in 4) Suspended judgment included "Get students to explore their ideas before taking a stand"; and in 5) Flexibility in thinking included "Probe students' ideas to encourage thinking"; and in 6) Self-evaluation included "Expect students to check their own work"; and in 7) Building on student's idea included "Follow up on students' suggestions"; and in 8) Opportunities for trial included "Encourage students to try out what they have learned" and in 9) Positive coping with frustration included "Students who are frustrated can come for emotional support". The reliability of the scales as indicated by Cronbach's Alpha were .87, .86, .87, .86, .84, .77, .87, .84 and .91 for pre-test and .85, .77, .84, .87, .90, .73, .81, .76 and .87 for post-test for the nine subscales for kindergarten teachers and .79, .82, .72, .77, .88, .80, .85, .87, .84 for pre-test

and .85, .80, .77, .78, .85, .81, .85, .87, .85 for post-test for the nine subscales for primary school and special school teachers respectively.

In measuring teachers' view on the concrete plan of implementation of drama education, a scale consisted of 15 items was newly developed for this study by the author. This scale listed items such as "to take part in international or non-local drama education activity or creativity competition" and "to add drama elements into current curriculum" and required teachers to respond in a 5-point Likert scale (1 = not to implement, 2 = implement within one year, 3 = implement within one to five years, 4 = implement within five to nine years, and 5 = implement not within the coming nine years). The reliability of the scales as indicated by Cronbach's Alpha were .86 for pre-test and .98 for post-test for kindergarten teachers and .72 for pre-test and .90 for post-test for primary and special school teachers.

And in the last part of the teacher's questionnaire, some basic demographic information was obtained. Name was used for pre- and post-test matching. Teacher's experience in general teaching and drama teaching was asked in two questions respectively. And the post they were taking at school was also under concern. They also indicated the type of school that they were working at.

2.3 Procedure

Teachers in the experimental groups participated in a 24-hour drama training

course provided by Ming Ri Institute for Arts Education, and were given training on ways to incorporate drama into their lessons. Teachers also received a 10-hour on-site coach supervision from a drama educator provided by the Institute. Students taught by teachers in the experimental groups thus were able to have their lessons with dramatic elements while students taught by teachers in the control group had lessons in the regular way.

The pre-test was conducted within the first 2 weeks after teachers received training in incorporating drama into their lessons. Teachers and students of both the experimental and control groups took part in filling out questionnaires before students were given classes with the dramatic element. Selected students also participated in the story-telling test (STT) (Hui & Lau, 2006). The post-test was conducted with similar procedures 5 months after the pre-test was conducted.

The STT was conducted by a trained research assistant who disguised herself as a volunteer from an organization called "The Story Kingdom". Each student was presented with an unseen picture and was asked to tell a story about the picture. No time limit was set and the student was asked if he or she wanted to add a title to the story in the end. Two different pictures were used separately for the pre-test and post-test. Specifically, the whole story-telling scene was first video-taped and the performance was then evaluated by two raters independently in accordance to 10

criteria, of which the first 9 criteria are the same for kindergarten and primary school students: relevancy to the story, ability to describe the story, ability to organize the story, ability to express, ability to show emotions and speak in an audible tone, ability to add in conversations, ability to include humorous elements, ability to include creative elements, and ability to identify problems and find relevant solutions. For the last criterion, kindergarten students were assessed on whether they were able to give a relevant name to their story, and primary school students were assessed on whether appropriate vocabularies were used. Each criterion was rated on a four-point scale (from 1, lowest, to 4, highest).

3. Results

3.1 Intercorrelations among Variables

The intercorrelations among the teacher-rated characteristics and the objective story telling assessments of kindergarten students were moderately strong indicating a good concurrent validity among these two measurements. In the pre-test, the teacher-rated dramatics characteristics had a moderate and strong correlation with the overall scores of the story telling, r (102) = .23, $p < .05$; and the teacher-rated creativity characteristics correlated also moderately strong with the story telling scores, r (106) = .32, $p < .01$. Similar magnitudes of positive correlations were observed again in the post-test. The dramatics characteristics had a moderately strong

positive correlation with the scores of story telling, r (102) = .28, p < .01; and the creativity characteristics correlated moderately strong with story telling, r (106) = .35, p < .01. Table 1 reported the intercorrelation coefficients among these variables.

Table 1

Intercorrelations Among Dramatic Characteristics, Creativity Characteristics and Story Telling Scores for Kindergarten Students

	1	2	3	4	5	6
1. Dramatics characteristics (Pre-test)	1	.86**	.23*	.70**	.65**	.28**
2. Creativity characteristics (Pre-test)		1	.32**	.55**	.60**	.35**
3. Story-telling Scores (Pre-test)			1	.16	.21*	.86**
4. Dramatic characteristics (Post-test)				1	.88**	.22*
5. Creativity characteristics (Post-test)					1	.25*
6. Story-telling (Post-test)						1

* p< 0.05, ** p<0.01

Among primary students, no significant associations were found among the self-reported dramatic characteristics, creativity characteristics, communication characteristics, motivational characteristics with the total scores of story telling in the pretest as reported in Table 2. However, significant correlations were observed in the post-test. Self-reported dramatic characteristics was correlated significantly and

positively with the post-test scores of story telling, r (85) = .25, p < .05. A moderately strong correlation was also found between the self-reported creativity characteristics and the post-test scores of story telling, r (85) = .22, p < .05. In the sample of primary school students, a strong and significant correlation was found between the pretest scores of story telling and the post-test scores of story telling, r (85) = .69, p < .001.

In the sample of special students as seen in Table 3, a similarly strong and positive correlation was observed between the pretest scores of story telling and the post-test scores of story telling, r (25) = .68, p < .01. No significant associations were found among the teacher-rated dramatic characteristics, creativity characteristics and positive emotional responses with either the pretest scores or the post-test scores of story telling in students with special needs.

Table 2

Intercorrelations among dramatics, creativity and motivation characteristics and story telling scores for primary school students

	1	2	3	4	5	6
1. Dramatic characteristics (Pre-test)	1	.85**	.75**	.80**	.20	.25*
2. Creativity characteristics (Pre-test)		1	.80**	.76**	.16	.22*
3. Communication Skills (Pre-test)			1	.85**	.14	.21
4. Motivation Characteristics (Pre-test)				1	.09	.20
5. Story-telling Scores (Pre-test)					1	.69**
6. Story-telling Scores (Post-test)						1

* p< 0.05, ** p<0.01

Table 3

Intercorrelations Among Dramatic Characteristics, Creativity Characteristics and Story Telling for Special School Students

	1	2	3	4	5	6	7	8
1. Dramatic characteristics (Pre-test)	1	.78**	.79**	.04	.69**	.48**	.63**	-.14
2. Creativity characteristics (Pre-test)		1	.78**	.15	.68**	.82**	.22	.14
3. Positive emotion responses (Pre-test)			1	.08	.79**	.67**	.25	.04
4. Story-telling (Pre-test)				1	-.00	.10	-.44*	.68**
5. Dramatic characteristics (Post-test)					1	.78**	.14	-.08
6. Creativity characteristics (Post-test)						1	-.16	.13
7. Positive emotion responses (Post-test)							1	-.41
8. Story-telling (Post-test)								1

* p< 0.05, ** p<0.01

3.2 Effects of drama in education on kindergarten students

Independent-samples T-test was used to examine the effects of drama in education on the teacher-perceived dramatics and creativity characteristics of participants and on the performance of story telling test. A significant difference was found in the post-test dramatics characteristics of participants from the control group (M = 3.70, SD = 0.67) and the experimental groups (M = 4.27, SD = 0.77) as perceived by their teachers, t (101) = -3.03, $p < .01$. Participants in the experimental group scored significantly higher in volunteering to participate in classroom plays or skits (M = 4.52, SD = 1.03) than those in the control group (M = 3.75, SD = 0.97), t (105) = -3.03, $p < .01$. The experimental group also got higher scores in effectively using gestures and facial expressions to communicate feelings (M = 4.28, SD = 0.80) than those in the control group (M = 3.58, SD = 0.96), t (105) = -3.30, $p < .001$. The experimental group also got higher scores in their ability to mimic the way people speak, walk and talk (M = 4.03, SD = 1.00) than those in the control group (M = 3.37, SD = 0.89), t (104) = -2.67, $p < .01$. Table 4 listed the means and standard deviations of scores on variables of kindergarten students in the experimental and control groups.

Table 4

Mean scores of teacher-perceived dramatic characteristics of kindergarten students in experimental and control groups

	Experimental group (N=87)		Control group (N=20)		
	M	*SD*	*M*	*SD*	*t*
Overall Scores of Dramatic characteristics (Post-test)	4.27	0.77	3.70	0.67	-3.03**
Dramatic Characteristics					
1. Volunteers to participate in classroom play or skits	4.52	1.03	3.75	0.97	-3.03**
2. Easily tells a story or gives an account of some experience	4.29	0.96	3.95	1.00	-1.40
3. Effectively uses gestures and facial expressions to communicate feelings	4.28	0.80	3.58	0.96	-3.31***
4. Is adept at role-playing, improvising, acting out situations "on the spot"	3.84	1.11	3.50	0.95	-1.27
5. Can readily identify himself or herself with the moods and motivations of characters.	4.07	1.12	3.70	0.73	-1.41
6. Handles body with ease and pose for his or her particular age.	4.74	0.96	4.60	1.23	-0.54
7. Creates original plays or makes up plays from stories.	3.02	1.37	3.35	0.81	1.02
8. Commands and holds the attention of a group when speaking.	3.88	0.97	3.65	0.99	-0.96
9. Is able to evoke emotional responses from listeners – can get people to laugh, frown, feel tense, etc.	3.77	1.17	3.63	0.96	-0.48
10. Can imitate others – is able to mimic the way people speak, walk, gesture	4.03	1.01	3.37	0.90	-2.67**

** p<0.01, *** p < .001

No significant differences were found among their scores of creativity characteristics and the scores of story telling test in the two groups. No significant gender or age effects were also found in the participants' scores of dramatics characteristics and creativity characteristics, nor in their story telling performance.

To further examine the effects of drama in education in different groups of participants, mean-split methods of using their pre-test scores of dramatics characteristics and creativity characteristics were used to classify them into low/high groups of dramatics characteristics and low/high groups of creativity characteristics. Participants whose pre-test dramatics characteristics lower than 3.99 belonged to the low dramatics group and those above were assigned into the high dramatics group. Participants who had their pre-test creativity characteristics scores lower than 3.75 were classified as the low creativity group and those above as high creativity group.

Significant differences were found in these groups of participants as seen in Table 5. In the story telling test, the high dramatics group (M = 19.59, SD = 4.23) scored significantly higher than the low dramatics group (M = = 17.88, SD = 3.85), t (100) = -2.11, $p < .05$. Participants in the high dramatics group were higher in understanding the topic of the story, t (100) = -2.37, $p < .05$; provided significantly more details, t (100) = -3.59, $p < .001$; expressed more clearly, t (100) = -2.09, $p < .05$; and showed a lot of expression and emotion, t (100) = -2.02, $p < .05$.

Table 5

Mean scores of story-telling of kindergarten students in high dramatics and low dramatics groups

	High dramatics group (N=58)		Low dramatics group (N=44)		
	M	*SD*	*M*	*SD*	*t*
Overall Scores of Dramatic characteristics (Post-test)	4.49	0.55	3.68	0.82	-5.94***
Overall Scores of Creativity characteristics (Post-test)	4.28	0.66	3.56	0.87	-4.77***
Story-telling Dimensions					
1. Relevancy to the story	2.58	0.52	2.32	0.58	-2.37*
2. Detailed description of the story	2.52	0.50	2.14	0.56	-3.59***
3. Story includes the beginning, middle, and end	2.21	0.67	1.98	0.63	-1.76
4. Speaks clearly and distinctly	3.13	0.57	2.89	0.60	-2.09*
5. Story relevantly named	1.77	0.83	1.92	0.82	0.93
6. Audible voice with lots of expression and emotion	2.30	0.73	2.02	0.65	-2.02*
7. Conversations and dialogues added into story	1.26	0.61	1.18	0.52	-0.67
8. Story with humorous elements that was able to hold the audience's interest	1.27	0.54	1.13	0.34	-1.53
9. Story with creative elements that was able to hold the audience's interest	1.40	0.56	1.27	0.49	-1.17
10. Problem is presented in story and a logical solution was given	1.17	0.47	1.03	0.17	-1.85

* p< 0.05, ** p<0.01, *** p < .001

Similar gains were also recorded among the high creativity groups in their story telling performance. The high creativity group outperformed significantly than the low creativity group in 7 aspects in the story telling test. They showed a higher understanding in the topic as presented in the picture, t (104) = -3.54, $p < .001$; provided a clear story with all important details, t (104) = -4.21, $p < .001$; told the story with a clear structure of beginning, middle and ending, t (104) = -2.52, $p < .05$; spoke clearly and distinctly, t (104) = -2.94, $p < .01$; told the story with an audible voice and showed a lot of expression and emotion, t (104) = -2.28, $p < .05$; added more dialogues for the characters, t (104) = -2.35, $p < .05$; and displayed more creative elements, t (104) = -2.27, $p < .05$. Table 6 reported the means and standard deviations of the kindergarten students in various groups.

Table 6

Mean scores of story-telling of kindergarten students in high creativity and low creativity groups

	High creativity group (N=57)		Low creativity group (N=49)		
	M	SD	M	SD	*t*
Overall Scores of Dramatic characteristics (Post-test)	4.47	0.61	3.81	0.82	-4.58***
Overall Scores of Creativity characteristics (Post-test)	4.35	0.64	3.56	0.84	-5.48***
Story-telling Dimensions					
1. Relevancy to the story	2.63	0.48	2.27	0.59	-3.54***
2. Detailed description of the story	2.56	0.46	2.13	0.58	-4.21***
3. Story includes the beginning, middle, and end	2.25	0.71	1.93	0.56	-2.52**
4. Speaks clearly and distinctly	3.18	0.57	2.86	0.57	-2.94**
5. Story relevantly named	1.87	0.93	1.80	0.71	-0.45
6. Audible voice with lots of expression and emotion	2.32	0.75	2.02	0.60	-2.28*
7. Conversations and dialogues added into story	1.33	0.72	1.08	0.24	-2.35*
8. Story with humorous elements that was able to hold the audience's interest	1.25	0.52	1.14	0.38	-1.24
9. Story with creative elements that was able to hold the audience's interest	1.46	0.61	1.22	0.40	-2.27*
10. Problem is presented in story and a logical solution was given	1.17	0.48	1.04	0.17	-1.76

* p< 0.05, ** p<0.01, *** p < .001

Significant group differences were also found in the dramatics characteristics and the creativity characteristics of the high dramatics group and the low dramatics group as perceived by their teachers in the post-test. The high dramatics group scored significantly higher (M = 4.49, SD = 0.55) in the dramatics characteristics than the low dramatics group (M = 3.68, SD = 0.82), t (97) = -5.94, p < .001. The high dramatics group also got significantly higher scores (M = 4.28, SD = 0.66) in the creativity characteristics than the low dramatics group (M = 3.55, SD = 0.87), t (99) = -4.77, p < .001.

Similar pattern of group differences were reported in the dramatics characteristics and the creativity characteristics of the high creativity group and the low creativity group as perceived by their teachers in the post-test. The high creativity group scored significantly higher (M = 4.47, SD = 0.61) in dramatics characteristics than the low creativity group (M = 3.81, SD = 0.82), t (100) = -4.58, p < .001. The high creativity group also got significantly higher scores (M = 4.35, SD = 0.64) in the creativity characteristics than the low creativity group (M = 3.56, SD = 0.84), t (103) = -5.48, p < .001.

3.3 Effects of drama in education on primary school students

Participants in the experimental group had significant increases in clear oral expression and creative elements as presented in Table 7. Their pretest score of clear

oral expression (M = 3.60, SD = 0.55) was increased to their post test score of clear oral expression (M = 3.76, SD = 0.40), t (54) = -2.51, $p < .05$. Their post-test score of creative elements (M = 2.05, SD = 0.85) was significantly higher than their pretest score of creative elements (M = 1.77, SD = 0.87), t (54) = -2.57, $p < .05$. However, their pretest scores of humorous elements (M = 1.59, SD = 0.87) was significantly lower than their pretest score of humorous elements (M = 1.15, SD = 0.36), t (54) = -3.94, $p < .05$.

In the control group of primary school students, a similar significant decrease was observed in relevancy to the story and a similar increase in creative elements. The pretest score of relevancy to the story (M = 3.65, SD = 0.40) was lowered to their post test score of relevancy to the story (M = 3.40, SD = 0.24), t (29) = 4.01, $p < .01$. The post-test score of creative elements (M = 2.32, SD = 0.71) was significantly higher than their pretest score of creative elements (M = 1.80, SD = 0.85), t (29) = -3.90, $p < .01$.

Table 7

Mean scores of story-telling of primary school students in control and experimental groups

	Control Group (N=30)					Experimental Group (N=55)				
	Pre-test		Post-test			Pre-test		Post-test		
	Mean	SD	Mean	SD	*t*	Mean	SD	Mean	SD	*t*
Overall Scores of Story-telling characteristics	26.78	5.01	26.87	3.68	0.11	25.03	5.84	25.65	3.80	1.17
1. Relevancy to the story	3.65	0.40	3.40	0.24	-4.01**	3.20	0.49	3.31	0.38	1.81
2. Detailed description of the story	3.08	0.66	3.17	0.42	0.78	2.91	0.59	2.95	0.43	0.68
3. Story includes the beginning, middle, and end	3.42	0.76	3.33	0.74	-0.54	3.28	0.84	3.23	0.66	-0.59
4. Speaks clearly and distinctly	3.70	0.43	3.83	0.36	1.44	3.60	0.55	3.76	0.40	2.51*
5. Story relevantly named	2.97	0.41	2.97	0.29	0.00	2.65	0.86	2.75	0.48	1.03
6. Audible voice with lots of expression and emotion	3.17	0.55	3.02	0.61	-1.47	2.83	0.81	3.00	0.51	1.72
7. Conversations and dialogues added into story	1.90	1.29	2.05	1.09	0.69	1.75	1.23	1.79	0.93	0.21
8. Story with humorous elements that was able to hold the audience's interest	1.48	0.71	1.20	0.47	-1.83	1.59	0.87	1.15	0.36	-3.94*
9. Story with creative elements that was able to hold the audience's interest	1.80	0.85	2.32	0.71	3.90**	1.77	0.87	2.05	0.85	2.57*
10. Problem is presented in story and a logical solution was given	1.60	1.07	1.58	0.84	0.08	1.45	0.88	1.66	0.86	1.87

* $p < 0.05$, ** $p < 0.01$

3.4 Effects of drama in education on students from a special school

Among the story telling variables as shown in Table 8, the experimental group scored significantly higher in their post-test scores of conversations and dialogues added into the story (M = 1.80, SD = 1.05) than their pretest score of conversations and dialogues (M = 1.00, SD = 0.00), t (14) = -2.95, p < .05. Significant increase had also been recorded in the post-test score of problem solving (M = 1.40, SD = 0.54) from their pretest score of problem solving (M = 1.00, SD = 0.00), t (14) = -2.86, p < .05. However, their relevancy to the story was significantly lower in the post-test (M = 2.10, SD = 0.88) than their pretest score of relevancy to the story (M = 2.57, SD = 0.56), t (14) = 3.42, p < .01.

Significant differences were found in the teacher-rated positive emotional responses between participants in the experimental group and the control group. This indicated that participants in the experimental group had their teachers rating them as higher in positive emotional responses than participants in the control group. To further examine this effect, participants whose scores of positive emotional responses were higher than the mean were grouped into the high group and those below the mean were categorized into the low group. Table 9 presented the comparison of their pretest and post-test scores. Among the low group participants, a significant difference was found in the conversations and dialogues added into the story in the pretest score of

conversations and dialogues added into the story (M = 1.25, SD = 0.71) and their post test score of conversations and dialogues (M = 2.31, SD = 1.19), t (7) = -3.07, $p < .05$. Similar significant increase was also found in the high group. In the high group, the pretest score of conversation and dialogues added into the story (M = 1.13, SD = 0.52) had been increased to the post-test score (M = 1.80, SD = 1.03), t (14) = -2.81, $p < .01$. There was another significant increase recorded from the pretest scores of creative elements (M = 1.20, SD = 0.32) to the post-test scores of creative elements (M = 1.67, SD = 0.70), t (14) = -2.29, $p < .05$. The pretest score of problem solving (M = 1.00, SD = 0) was increased significant to the post-test score of problem solving (M = 1.50, SD = 0.60), t (14) = -3.24, $p < .01$.

In the control, significant increases had been observed in added conversations and creative elements. Participants' pretest score of conversations and dialogues added (M = 1.40, SD = 0.84) was increased to and their post test score of conversations and dialogues (M = 2.20, SD = 1.11), t (9) = -3.36, $p < .01$. The pretest score of creative elements (M = 1.15, SD = 0.34) was also increased to their post test score of creative elements (M = 1.70, SD = 0.75), t (9) = -2.70, $p < .05$.

Table 8
Mean scores of story-telling of special school students in control and experimental groups

	Control Group (N=10)					Experimental Group (N=15)				
	Pre-test		Post-test			Pre-test		Post-test		
	Mean	SD	Mean	SD	*t*	Mean	SD	Mean	SD	*t*
1. Relevancy to the story	2.30	0.75	2.30	0.67	0.00	2.57	0.56	2.07	0.88	3.42**
2. Detailed description of the story	2.05	0.72	2.20	0.67	-0.90	2.22	0.59	2.10	0.81	0.72
3. Story includes the beginning, middle, and end	1.75	0.89	1.80	0.67	-0.26	1.87	0.67	1.57	0.62	1.72
4. Speaks clearly and distinctly	2.65	1.06	2.60	0.61	0.21	3.00	0.80	2.67	0.77	2.00
5. Story relevantly named	2.05	1.19	2.40	0.77	-1.02	1.93	1.02	2.23	0.86	-1.15
6. Audible voice with lots of expression and emotion	2.00	0.88	1.9	0.84	0.51	2.43	0.62	2.13	0.79	1.60
7. Conversations and dialogues added into story	1.40	0.84	2.20	1.11	-3.36**	1.00	0.00	1.80	1.05	-2.95*
8. Story with humorous elements that was able to hold the audience's interest	1.11	0.32	1.11	0.32	0.00	1.13	0.52	1.27	0.42	-0.12
9. Story with creative elements that was able to hold the audience's interest	1.15	0.34	1.70	0.75	-2.70*	1.23	0.32	1.60	0.74	-1.75
10. Problem is presented in story and a logical solution was given	1.25	0.79	1.70	0.54	-1.65	1.00	0.00	1.40	0.54	-2.86*

* p< 0.05, ** p<0.01

Table 9

Mean scores of story-telling of special school students in high positive emotional response and low positive emotional response groups

	Low Positive Emotional Response Group (N=10)					High Positive Emotional Response Group (N=15)				
	Pre-test		Post-test			Pre-test		Post-test		
	Mean	SD	Mean	SD	*t*	Mean	SD	Mean	SD	*t*
Overall Positive Emotional Response	19.88	5.36	20.88	6.29	-0.47	17.63	4.26	18.73	6.16	-1.19
1. Relevancy to the story	2.69	0.46	2.31	0.70	1.82	2.43	0.70	2.10	0.89	2.47*
2. Detailed description of the story	2.31	0.59	2.25	0.60	0.31	2.13	0.67	2.10	0.85	0.25
3. Story includes the beginning, middle, and end	2.06	1.02	1.88	0.74	0.70	1.77	0.59	1.60	0.60	0.96
4. Speaks clearly and distinctly	2.94	0.94	2.63	0.74	1.17	2.83	0.94	2.67	0.72	1.16
5. Story relevantly named	2.31	1.07	2.76	0.65	-1.08	1.93	1.08	2.13	0.81	-0.78
6. Audible voice with lots of expression and emotion	2.38	0.64	2.06	0.90	1.00	2.20	0.73	2.03	0.81	1.16
7. Conversations and dialogues added into story	1.25	0.71	2.31	1.19	-3.07*	1.13	0.52	1.80	1.03	-2.81
8. Story with humorous elements that was able to hold the audience's interest	1.38	0.74	1.25	0.46	0.36	1.00	0.00	1.13	0.30	-1.74*
9. Story with creative elements that was able to hold the audience's interest	1.25	0.38	1.75	0.85	-1.87	1.20	0.32	1.67	0.70	-2.29
10. Problem is presented in story and a logical solution was given	1.31	0.88	1.69	0.46	-1.21	1.00	0.00	1.50	0.60	-3.24*

* $p < 0.05$

3.5 Effects of drama in education on kindergarten teachers

Paired-samples T-test was conducted to examine the effects of participation in drama in education project among kindergarten teachers. The pre-test scores and the post-test scores of the 9 dimensions of the Creative Fostering Teacher Index were compared. Significant improvements were found in 5 dimensions. The teacher participants scored significant gains in the fostering independent learning, t (57) = -2.13, $p < .05$; cooperative learning, t (57) = -1.99, $p < .05$; encouraging self evaluation among students, t (57) = -1.96, $p < .05$; building on students' ideas, t (57) = -1.98, $p < .05$; and providing opportunities for trial, t (57) = -2.11, $p < .05$. Table 10 reported the scores on Creative Fostering Teacher Index of kindergarten teachers.

Table 10

Mean scores on Creative Fostering Teacher Index of kindergarten teachers

	Pre-test (N=58)		Post-test (N=58)		
	M	SD	M	SD	*t*
Dimensions of Creative Fostering Teacher Index					
1. Independent learning	4.56	0.88	4.78	0.56	-2.13*
2. Cooperative learning	4.75	0.85	4.93	0.61	-1.99*
3. Motivation in mastery of knowledge	4.57	0.79	4.61	0.65	-0.42
4. Suspended judgement	4.46	0.82	4.65	0.57	-1.86
5. Flexibility in thinking	4.49	0.87	4.68	0.59	-1.80
6. Self-evaluation	4.41	0.86	4.60	0.70	-1.96*
7. Student's idea	4.79	0.72	4.93	0.54	-1.98*
8. Opportunities for trial	4.75	0.78	4.95	0.57	-2.11*
9. Positive coping	4.84	0.81	4.96	0.61	-1.25

p < .05, ** p < .01, *** p < .001

The teacher participants also indicated significantly more commitment in implementing creativity and drama related activities in their curriculum and school development. Table indicated the mean scores of these creative and drama practices. Teachers were more active in participating in local and international drama competitions. They planned to invite different people to give talks in schools, and encouraged students to take part in drama activities. In 5 to 9 years time, teachers would be subsidized to enroll in drama in education course, and incorporating drama elements into the curriculum. Table 11 listed the means and standard deviations of creative practices in kindergartens.

Table 11

Means scores of creative practices in kindergartens

	Pre-test (N=41)		Post-test (N=41)		
	M	SD	M	SD	*t*
1. Talks for parents	2.82	0.64	2.90	0.85	-0.53
2. Local drama competitions	2.78	0.53	3.08	0.94	-1.96*
3. International drama competitions	1.92	1.09	3.14	1.03	-4.72***
4. Inviting different people related to the field of drama to hold talks	2.62	0.55	3.43	1.39	-4.20***
5. Encourage students to engage in drama in non-teaching hours	2.65	0.67	3.30	1.24	-3.46***
6. Subsidize teachers to enroll in drama related courses	2.62	0.59	3.26	1.19	-3.76***
7. School environment being multi-dimensional	2.80	0.63	3.29	1.25	-2.40*
8. Enhance play activities and teaching materials	2.73	0.72	3.40	1.24	-3.54***
9. Flexible breaks	2.61	0.73	3.47	1.50	-3.65***
10. Drama classes for students	2.67	0.72	3.67	1.55	-3.70***
11. Encourage teachers to put drama into education	2.68	0.69	3.40	1.37	-3.38***
12. Increase the flexibility of teaching syllabus	2.62	0.63	3.56	1.41	-4.37***
13. Using less workbooks	2.75	0.55	3.19	1.24	-2.21*
14.Using a multi-dimensional way of evaluating the performance of students	2.68	0.58	3.57	1.41	-4.15***
15. Incorporating drama into education	2.61	0.59	3.24	1.30	-3.33**

$p < .05$, ** $p < .01$, *** $p < .001$

3.6 Effects of drama in education on primary and special school teachers

Regarding the changes in the creative teaching style of teachers in the primary and special schools, significant differences were found in the subscale of providing opportunities for trial for students and the subscale of positive coping with students' frustrations with learning in the pretest and post-test. Table 12 presented the results. The pretest score of opportunities for trial (M = 4.48, SD = 0.65) was increased to the post-test score of opportunities for trial (M = 4.81, SD = 0.62), t (20) = -2.20, p < .05. The pretest score of positive coping with students' frustration in learning (M = 4.40, SD = 0.84) was increased to the post-test score of positive coping with students' frustration in learning (M = 4.74, SD = 0.71), t (20) = -2.10, p < .05.

Table 12

Mean scores on Creative Fostering Teacher Index of primary and special school teachers

	Pre-test (N=38)		Post-test (N=21)		
	Mean	SD	Mean	SD	*t*
Creative Fostering Teacher Index					
1. Independent learning	4.78	0.69	4.85	0.70	-0.30
2. Cooperative learning	4.50	0.63	4.75	0.59	-1.38
3. Motivation in mastery of knowledge	4.29	0.76	4.57	0.71	-1.73
4. Suspended judgment	4.70	0.65	4.93	0.67	-1.58
5. Flexibility in thinking	4.21	0.73	4.51	0.69	-1.73
6. Self-evaluation	4.30	0.72	4.62	0.57	-1.74
7. Student's idea	4.18	0.78	4.45	0.58	-1.57
8. Opportunities for trial	4.48	0.65	4.81	0.62	-2.20*
9. Positive coping	4.40	0.84	4.74	0.71	-2.10*

* p< 0.05

Table 13 presented the pre and post-test scores of creative practices reported by the teachers in primary and special schools. With reference to creative practice in primary and special schools, significant increases had been noted in all the creative practices as reported by teachers, including organizing talks for parents on drama in education, encouraging students to take part in local drama competitions and enhancing play activities and drama classes for students. Teachers had reported that they would envisage drama would be incorporated in education and there should be increased flexibility of teaching syllabus. Multi-dimensional ways of evaluating student performance should also be encouraged in the long run.

Table 13

Means scores of creative practices in primary schools and special schools

	Pre-test (N=15)		Post-test (N=15)		
	Mean	SD	Mean	SD	*t*
1. Talks for parents	3.07	0.27	3.17	0.73	-2.86*
2. Local drama competitions	2.87	0.35	3.93	0.80	-4.68***
3. International drama competitions	1.07	0.26	3.87	0.74	-14.00***
4. Inviting different people related to the field of drama to hold talks	3.00	0.00	4.87	0.83	-8.67***
5. Encourage students to engage in drama in non-teaching hours	3.00	0.38	4.67	0.82	-6.61***
6. Subsidize teachers to enroll in drama related courses	2.93	0.26	4.53	0.64	-9.80***
7. School environment being multi-dimensional	3.08	0.28	4.69	0.63	-8.95***
8. Enhance play activities and teaching materials	3.00	0.38	4.73	0.70	-7.60***
9. Flexible breaks	2.73	0.70	5.00	0.66	-9.13***
10. Drama classes for students	2.80	0.56	5.33	0.62	-9.91***
11. Encourage teachers to put drama into education	2.87	0.35	5300	0.54	-16.00***
12. Increase the flexibility of teaching syllabus	2.87	0.64	5.20	0.56	-10.04***
13. Using less workbooks	2.93	0.60	4.40	0.74	-6.21***
14.Using a multi-dimensional way of evaluating the performance of students	2.93	0.60	5.13	0.52	-11.00***
15. Incorporating drama into education	2.88	0.34	4.69	0.60	-11.07***

* p< 0.05, ** p<0.01, *** p < .001

4. Discussion

Integrating drama education into the formal school curriculum is a recent attempt in the educational reform in Hong Kong. Previous studies have shown that drama instruction has enhanced creativity performance in objective assessments and their communicative ability in story telling among Hong Kong primary schoolchildren (Hui & Lau, 2006), drama education was effective in raising verbal skills in students of various levels from different countries (Podlozny, 2000) and in learning geometry in mathematics in Turkish secondary school students (Duatepe-Paksu & Ubuz, 2009). Kindergarten and primary students and their teachers, as well as their counterparts in special schools taking part in the present study have been benefited from the drama instruction in different ways.

Kindergarten teachers have perceived that students in the experimental group have displayed more dramatics characteristics. They are more willing to volunteer to participate in classroom plays or skits. They can easily tell a story and use both verbal and body languages to communicate their feelings. They are also good at identifying themselves with the moods and motivations of the characters in reading stories. It is evident by the teachers that learning through drama is effective in enhancing empathetic understanding and verbal skills of kindergarten children. This finding is consistent with the meta-analysis conducted by Podlozny (2000) indicating that drama

instruction enhanced oral language development of students of all population, including kindergarten children.

Primary school students who have received drama enhanced curriculum have scored significantly higher in clarity in expression and creative elements when compared with those who have not. Students with special needs in drama enhanced classes also have added more conversations and dialogues in their stories and they have suggested more solutions to solve a problem than their counterparts in the control group.

The effect of drama instruction is more profound in individuals who have displayed higher dramatics and creativity characteristics as assessed by their teachers. The positive gains reported in the performance of story telling among the high dramatics and high creativity groups in their abilities in understanding the theme of the story, providing more details and more creative elements by including dialogues and conversations among characters. They are also more capable and confident in controlling their voices to express their emotions and feelings in story telling. Learning through drama is actually a preferred learning style and drama instruction a favorable teaching strategy for these groups of students in particular.

Moreover, special students who have been rated by teachers as having more positive affect have benefited more from the drama enhanced curriculum by

generating more humorous elements and solutions to solve a problem in the story telling task. Drama instruction has also been effective in enhancing creativity and humor among special learners.

Generally speaking, drama instruction in language classrooms has traditionally been an effective strategy (Wright, 2001). Drama provides a context for students to use the language spontaneously, serves as an effective medium to practice reflective thinking, as well as a strategy to enhance growth in understanding of abstract concepts and human experiences (Verriour, 2001). Morgan and Saxton (2001), and Bolton (1979) commented that drama provided "a different order of experience" for teachers to plan their curriculum in which thinking/feeling has become a major concern. Morgan and Saxton (2001) have further developed a taxonomy of personal engagement in learning through drama. The various processes include interest, engaging, committing, internalizing, demonstrating, and evaluating. Drama is an effective way to encourage students to be attending, displaying eye contacts, listening attentively and reacting with supportive non-verbal responses. It is a good way to engage students to participate actively, identify with the characters and gaining satisfaction through engagement. The third process of committing is requiring students to accept limits and responsibilities and emphathizing with the roles.

Previous studies on teacher perception on creativity education commonly

reported that teachers often agree that teachers play a significant role in fostering creativity in students but they usually feel inadequate and incompetent in achieving the creative goals in lessons (Fryer & Collings,1991; Kampylis, Berki & Saariluoma, 2009). The discrepancy in assigning importance to creativity education and lack of confidence in implementing a creative curriculum may be accounted by lack of training received when being students (Mack, 1987) and the limited and stereotypic view of creativity and relevant strategies (Davies, Howe, Fasciato, & Rogers, 2004). A key factor in enhancing teacher competence on implementing creativity education is equipping teachers with concepts and strategies of creativity. Drama can be an effective medium to enhance teachers' personal creativity and teaching style for creativity because drama is educational (Wright, 2001).

The drama instruction training offered to teachers by Ming Ri Institute of Arts Education aims at equipping teachers with knowledge and skills to be able to create drama with children in the classroom. They know and apply the teaching strategies and the form of drama. According to Wright (1984), teachers should be able to: "(1) form appropriate playable dramatic action for the group; (2) facilitate individual and group involvement in the drama; (3) guide individuals within the group towards understanding of the drama just created" (p.20). Teachers in the project adopt drama instruction in designing teaching and learning activities for students in their preschool

curriculum.

Teachers participating in drama instruction have also demonstrated positive gains in their development towards a teacher fostering creativity. Drama instruction has encouraged teachers to foster independent and cooperative learning among students. The drama experience has enhanced students' self evaluation and expressed their ideas in a constructive way in the classroom. Teachers have also increased in providing opportunities for students to have a trial on their suggested ideas.

Engaging teachers in drama activities and drama instruction has strengthened their commitment to both creative and drama education. After the teacher training experience and classroom try out of lesson enhanced with drama, teachers have endorsed the practice of integrating drama elements in curriculum and school planning. The drama instruction has brought positive effects on providing optimal learning experience for children by allowing more flexibility in the teaching syllabus, using fewer workbooks, and adopting a multi-dimensional way to evaluate student performance.

However, there are a couple of limitations of the present study. The first is on the generalizability of the findings to other preschool and primary school children and special learners in other school settings. The backgrounds of the participating kindergartens, primary schools and the special school are mainly for those institutions

which are eager to take part in creative and drama projects. The teachers are willing and voluntary to attend drama training for their professional development. Their students are mainly from lower to middle income families. Their experience and exposure to drama and creative activities may influence the effect of the drama in education project. Individual characteristics, such as dramatics and creativity characteristics, may also affect the learning effect of drama enhanced learning. The second limitation is on lack of explanatory power of the transfer from drama learning to academic achievement. Future studies on how participants integrate what they experience in drama with their academic knowledge and with their social and interpersonal knowledge may be worthwhile pursuing.

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