

# **How Effective is a Drama-enhanced Curriculum Doing to Increase the Creativity of Preschool Children and Their Teachers?**

**Anna N. N. Hui**

Assistant Professor, Department of Applied Social Studies, City University of Hong Kong

**Ping-kuen Cheung**

Head of Liberal Arts Studies, Hong Kong Academy for Performing Arts

**Simon T. K. Wong**

Artistic Director, Ming Ri Institute for Arts Education

**Mavis W. J. He**

Instructor I, Department of Applied Social Studies, City University of Hong Kong

Email: [annahui@cityu.edu.hk](mailto: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. Kindergarten and primary teachers 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) whereas 20 students from the same schools but were not taught by these teachers took part in the study as the control group. A total of 58 kindergarten teachers and primary school teachers completed both the pre-test and post-test. Significant differences were found in the teacher-perceived dramatics characteristics in the experimental group of students. Students who displayed more dramatics and creativity characteristics outperformed those with fewer characteristics in their verbal expression in story-telling. Significant positive effects were also found in the creative fostering teaching technique 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 are discussed.

**Keywords:** Drama-enhanced Curriculum; Creativity; Preschool Education

## 1. Introduction

More than a hundred experimental studies tried to prove the existence of a relationship between drama in education and academic variables over the past three decades. All of the studies held a common theme, believing that drama-enhanced curriculum can improve students' ability in other academic areas, such as achievement, oral, reading, as well as writing skills (Brauer, 2002; Podlozny, 2000; Wagner, 1998).

Educators, policy makers, teachers and students in Hong Kong also recognize the importance and effectiveness of arts education in cultivating students' creativity and communication skills. According to the latest edition of

the curriculum guide on arts education of Hong Kong (Curriculum Development Council, 2002, p. 3):

*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, we hold one more responsibility in enriching the literature on understanding the effect as well as limitations of such implementation in the educational 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 a creative practice and creativity-fostering teaching style were also addressed in the study.

## **1.1 Learning through Drama**

Arts Education is a broad subject which 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 can be enhanced and learning motivation can be increased. An example is the use of gesture to express abstract words in learning a second language (Liu, 2002). This kind of practice is called "process drama" in foreign language classrooms (Kao, & O'Neill, 1998; Liu, 2002), "creative drama" (McCaslin, 1996), "informal improvisational drama activities" (Wagner, 2002) or "learning through drama" (Wong, 2004). In other words, this was the drama-enhanced curriculum that was examined in this study.

## **1.2 Effect of drama-enhanced curriculum on students**

As mentioned above, many studies aimed to examine the benefits of drama-enhanced curriculum. In the meta-analysis of 80 studies conducted by Podlozny (2000), it was found that, in many studies, a drama-enhanced language curriculum was effective in raising students' writing achievement, oral language development, reading readiness, written tests of story understanding, and recall of story understanding. Although the smallest effect size was found among studies of drama activities and standardized vocabulary tests, students receiving drama instruction still benefited. In another study conducted by Duatepe-Paksu and Ubuz (2009), it was found that drama enriched mathematical instruction, increased achievement and positive attitudes of students in geometry learning. This improvement was found to be unaffected either by gender or by students' attitudes in the past.

Some other demographic variables, such as the age and types of students, were also important concerns in several studies of drama-enhanced curriculum. 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-enhanced curriculum and the varied outcomes measured in the studies. Also, it was found that as the amount of time of drama instruction increased, the strength of the relationship also increased. This result was supported by another study conducted by Conard (1992). Kao and O'Neill (1998) have evidently reviewed that the use of drama in college language classrooms have positive impacts on encouraging students to take turns and enhancing student initiative. In their studies, students significantly contributed more in conversations in college classrooms of English language learning as a second language.

The most encouraging finding of these studies was the transfer of benefit of learning through drama 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-performed their non-drama peers on new

materials that they had never encountered before (Podlozny, 2000). Kardash and Wright (1986) also noticed the transfer effect. They reported in their meta-analysis study that learning through drama 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 in 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-enhanced curriculum could be found through carefully-designed studies.

### **1.3 Theory of drama in education**

According to a cognitive psychology perspective, learning would be most effective if students were constructors of their own knowledge. This is also the main premise of constructivism, in which the learner constructs 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 (Duartepe-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 playing, the concept is role-played and the story is enacted as a reflection from the experiences of the individuals, instead of developed simply from being spoon-fed (Bolton, 1984; Davis & Lawrence, 1986). Learning through drama does not only provide students with chances for imaginative engagement, it also provides practical experiences since it is process-oriented (Duartepe-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 adopted 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 more formally structured classroom. With the respect provided by other individuals in the classroom setting, self-actualization takes place more easily and the self-esteem of students is believed to be enhanced (Kitson & Spiby, 1997).

## **1.4 Teachers' role in drama-enhanced curriculum**

Whilst the benefits of learning through drama for students has been examined a lot, little consideration has been given to the possible benefit that the teacher would gain, or the difficulties they may encounter during the implementation of this creative form of teaching. The place of the teacher in the development of students' creativity should not be questioned (Gardner, 1993). In the study conducted by Kampylis, Berki & Saariluoma (2009), the 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 consistent with the findings of Torrance and Safter (1986) in which the authors stated that the teachers were "ill-equipped" in facilitating students' creativity expression. In another study, teachers were found to value creativity on one hand, but did not appreciate the personality traits that often come along with creativity, which include impulsiveness, risk taking behavior and independence of students, as revealed in teachers' self-reports (Westby & Dawson , 1995).

A 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 may be 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 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 may be exhibited as stressing the correct response, overly emphasizing the reproduction of knowledge, underestimating students’ creative potential, stressing the importance of obedience and passivity, and devaluing fantasy and imagination. But it is believed that as teachers gain experience in drama teaching, these inhibiting practices will be eliminated.

## **2. Creativity**

### **2.1 What is creativity?**

There are many different ways to define creativity. Creativity can be understood from perspectives known as the 4 P’s (person, process, product and place) (Mooney 1975). Creativity can either be conceptualized 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). In the present research, creativity is defined as a novel and appropriate behavior demonstrated in the preschool setting. It also looks into the creativity characteristics in personality observed by teachers in the classroom. The drama-enhanced curriculum is perceived as an input offered by the classroom as a creative place. It, however, did not attempt to look into the creative process of how individual children produce the behavior but was assumed that the drama-enhanced curriculum served as a stimulation in the creative process.

### **2.2 Developing creativity through education**

Creativity, according to cognitive theorists of learning, is a constructivist 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 "heightening 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. Hui (2002) documented the successful application of the teaching model in English language learning of primary schoolchildren.

When the relationship of creativity and classroom environment was examined, it was found that the establishment of a "creative climate" (Davis, 2006) 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 may enhance students' reflective and adaptive skills and enable them to look into the problem from multiple dimensions. Drama-enhanced curriculum provides 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.



The present study examined the benefits of a drama-enhanced curriculum in preschools to young children's creativity and communication as well to the creative teaching style of teachers.

### **3. Methodology**

#### **3.1 Participants**

The study included five kindergartens that participated voluntarily in the drama project by a convenient sampling method. The teachers received a drama training program for 24 hours and another 10 hours of on-site coach supervision by a drama educator in designing a lesson enhanced with drama for their students. Appendix 1 described a thematic unit in a preschool setting. A total of 58 kindergarten teachers completed the pre-test in October, 2008 and the post-test in May 2009. Kindergarten students were randomly selected from the schools to participate in the story-telling test (STT). The STT has been used previously in Hui and Lau (2006) and adopted the consensual assessment techniques developed by Amabile (1996). It is a method of assessing children's creativity by an actual performance of a creative task and most suitable for within-group comparisons but not appropriate for individual testing and provides no standardized scores (Kaufman, Plucker, & Baer, 2009). Of the selected kindergarten students, 83 were assigned to the experimental group, and 20 to the control group.

#### **3.2 Instruments**

##### **3.2.1 Students**

Items adopted from Renzulli, Smith, White, Callahan and Hartmann (1976) Scales for Rating the Behavioral Characteristics of Superior Students, were used to assess 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

completed by teachers for each student twice to compare the pre- and post-test score, based on the classroom observation of child's behavior and only the first two parts, Dramatic characteristics and Creativity were assessed in kindergarten students by their teachers. Dramatic 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"; and Communication skills was measured by items such as "Speaks and writes directly and to the point". 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 Dramatic characteristic and Creativity characteristics respectively for kindergarten students.

### **3.2.2 Teachers**

In measuring the effect of drama training on improving teachers' creative teaching style, 45 items adopted from Soh's (2000) study were used. 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). The questionnaire was administered twice to teachers 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”. In measuring teachers’ view on the concrete plan of implementation of drama in education, a scale consisted of 15 items was newly developed for this study by the authors. 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.

In the last part of the teacher’s questionnaire, some basic demographic information was obtained, including teaching experience in general teaching and drama teaching, administrative position and type of school. Names were used for pre- and post-test matching.

### **3.3 Procedure**

Teachers in the experimental groups participated in a 24-hour drama training course provided by an arts institute, and were given training on ways to incorporate drama into the curriculum. 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 experience 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 two 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). The post-test was conducted with similar procedures five months after the pre-test was conducted.

The STT was conducted by a trained research assistant who presented 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. Appendix 2 described the two children’s books used in the study. The two story books used in the study were *One pizza, one penny* written by a Taiwanese author Hao (1998) and the Chinese version of *Fourteen mice go on a picnic* originally written by a Japanese author Iwamura (1985/1994). 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. The whole story-telling test was first video-taped and the performance was then evaluated by two raters independently in accordance to 10 criteria: understanding of topic, 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, ability to identify problems and find relevant solutions, and ability to give a relevant name to their story. Each criterion was rated on a four-point scale (from 1, lowest, to 4, highest).

## 4. Results

### 4.1 Intercorrelations among Variables

The intercorrelations among the teacher-rated characteristics and the objective story-telling assessments 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,  $r(106) = .32, p < .01$ . A correlation between .20 and .50 indicated a moderate relationship. Similar magnitudes of positive correlations were observed again in the post-test. A correlation significant at a level of  $p < .01$  means that it is only less than 1% that this result occurring by chance. 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 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

\*  $p < 0.05$  which means that there are 5 chances out of 100 that the results occurred by chance;

\*\*  $p < 0.01$  which means that there is 1 chance out of 100 that the results occurred by chance;

\*\*\*  $p < .001$  which means that there is 1 chance out of 1000 that the results occurred by chance

## 4.2 Effects of drama-enhanced curriculum on kindergarten students

An 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 the 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 2 listed the means and standard deviations of scores on variables of kindergarten students in the experimental and control groups.

Table 2. Mean scores of teacher-perceived dramatic characteristics of kindergarten students in experimental and control groups

	Experimental group ( $n=87$ )		Control group ( $n=20$ )		$t$
	$M$	$SD$	$M$	$SD$	
Overall Scores of Dramatic characteristics (Post-test)	4.27	0.77	3.70	0.67	-3.03**
<b>Dramatic Characteristics</b>					
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**

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

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-enhanced curriculum 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. 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 3 reported the means and standard deviations of kindergarten students in various groups.

**Table 3. Mean scores of story-telling of kindergarten students in high dramatics and low dramatics groups**

	High dramatics group ( $n=58$ )		Low dramatics group ( $n=44$ )		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
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***
<b>Story-telling Dimensions</b>					
1. Understanding of the topic	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 seven 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 4 reported the means and standard deviations of the kindergarten students in various groups.

**Table 4. Mean scores of story-telling of kindergarten students in high creativity and low creativity groups**

	High creativity group ( $n=57$ )		Low creativity group ( $n=49$ )		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
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***
<b>Story-telling Dimensions</b>					
1. Understanding of the topic	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 ( $M = 3.56$ ,  $SD = 0.84$ ),  $t(103) = -5.48$ ,  $p < .001$ .

### 4.3 Effects of drama training on 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 5 reported the scores on Creative Fostering Teacher Index of kindergarten teachers.

**Table 5. Mean scores on Creative Fostering Teacher Index of kindergarten teachers**

	Pre-test ( $n=58$ )			Post-test ( $n=58$ )			$t$
	$\alpha$	$M$	$SD$	$\alpha$	$M$	$SD$	
Creative Fostering Teacher Index							
1. Independent learning	.87	4.56	0.88	.85	4.78	0.56	-2.13*
2. Cooperative learning	.86	4.75	0.85	.77	4.93	0.61	-1.99*
3. Motivation in mastery of knowledge	.87	4.57	0.79	.84	4.61	0.65	-0.42
4. Suspended judgement	.86	4.46	0.82	.87	4.65	0.57	-1.86
5. Flexibility in thinking	.84	4.49	0.87	.90	4.68	0.59	-1.80
6. Self-evaluation	.77	4.41	0.86	.73	4.60	0.70	-1.96*
7. Student's idea	.87	4.79	0.72	.81	4.93	0.54	-1.98*
8. Opportunities for trial	.84	4.75	0.78	.76	4.95	0.57	-2.11*
9. Positive coping	.91	4.84	0.81	.87	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 hoped they would be subsidized to enroll in drama in education course, and incorporating drama elements into the curriculum. Table 6 lists the means and standard deviations of creative practices in kindergartens.

Table 6. Means scores of creative practices in kindergartens

	Pre-test (n=41)		Post-test (n=41)		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
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**

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

## 5. Discussion

Integrating drama into the formal school curriculum is a recent attempt in 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-enhanced curriculum has been effective in raising verbal skills in students of various levels from American schools (Podlozny, 2000) and in learning geometry in mathematics in Turkish secondary school students (Duatpe-Paksu & Ubuz, 2009). Kindergarten students and teachers taking part in the present study have benefited from the drama instruction in different ways:

Teachers perceived that students in the experimental group have displayed more dramatic 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.

This study indicates that the effect of drama instruction is more profound in individuals who have displayed higher dramatic 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.

Generally speaking, drama instruction in language classrooms has traditionally been an effective strategy (Wright, 2001). Drama provides a

context for students to use 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 (1984) 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 emphatizing 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; Kamylyis, 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 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 adopted drama instruction voluntarily 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 creative teaching style. 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 suggest 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 groups of preschool children and school children at other grade levels. The backgrounds of the participating kindergartens are mainly for those kindergartens which are eager to take part in creative and drama projects. The teachers are willing and volunteered 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 controlling on confounding factors, such

as vocabulary and cognitive ability of children which may exert impact on children's expression in the form of story-telling. The third limitation is on the explanatory power of a transfer from drama learning to academic achievement. Future studies on how participants integrate what they experience in drama with their academic, social and interpersonal knowledge may be worthwhile pursuing. Also children's vocabulary and cognitive level may be controlled.

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## Appendix 1

In an experimental class composed of 3- and 4-years old young children, the theme on “egg” was selected based on a children’s book entitled *The snake has stolen my egg* written by a Taiwanese author Li Zhiyung as seen in Photo 1.



Photo 1: The Story Book *The snake has eaten my egg*

Children read about the story and dramatized it with self-designed props, such as animal hats and paper puppets indicating different characters in the story as seen in Photo 2. A small theatre was set up in the classroom and children could improvise the story by themselves in their free time.



Photo 2: The props made by the children and the small theatre in the classroom

此為上文摘要中譯

# 戲劇教學能有效提升學前兒童和教育工作者的創造力嗎？

許娜娜

香港城市大學應用社會科學系助理教授

張秉權

香港演藝學院人文學科系主任

王添強

明日藝術教育機構藝術總監

何競

香港城市大學應用社會科學系一級導師

電郵：[annahui@cityu.edu.hk](mailto:annahui@cityu.edu.hk)

## 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。幼稚園及小學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 人是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，共 20 人則由其他老師的同級不同班中隨機抽出。教師組則有 58 位小學及幼稚園老師參與，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，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。至於教師方面，戲劇教育培訓能有效提升教師的創意教學風

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。

**關鍵詞：**戲劇化課程、創造力、學前教育