To Foster Students’ Creativity through Classroom Teaching

Yang Huai-en
Beijing Technology and Business University

Stepping into the twenty-first century, we will meet the challenges of the knowledge-based economy and the information-based society. We often feel that the world is changing so fast that we seem to be lagged behind if we don't learn any new knowledge for only one day. We can see that the changes have taken place in our living environment, such as in working condition, life style and even the manner of people's communication. All these will have new requirements of the quality or people and the subsequent impact on the goals and mode of training or the future education. So more and more people realize the necessity of education reform. "Education must demonstrate how creative energy and inventiveness have constantly improved the context content and quality of human life." (Norwegian National Curriculum, in Hagness, 1994:11) That is, education needs foster creativity.

But to begin with, we should understand the meaning of the term creativity.

There are many meanings for this word. Paul Torrance (1970), a pioneer in the study of the creative process, suggests that creativity is the ability to produce something novel, something with the stamp of uniqueness upon it. Or we can say that creativity is the process of producing a new whole out of existing elements by arranging them into a new configuration (John and Tessa English, Creative Management in Schools, 1997). In its broadest sense, creativity includes the idea of invention, discovery, and a skill in making. No matter how creativity is defined, all agrees that it is a precious element of human intelligence and life.

Since we realize the importance on creative education, then what are the premises of creative education?

1) We should create a relaxed environment for students. This is the key element for us to carry out the creative education. The creative environment includes:

* Quick information environment: it includes quick and broad information exchange and fast network connection. This also requires the teachers be well informed and receive new technology in time.
* Democratic personal environment in which students can talk about their thoughts freely. Creativity is a kind of exploration in an uncertain field. It not only requires people to have great power or imagination but also have encourage to break through conservative or traditional ideas. So it is important to create personal environment that students can discuss democratically and express their ideas freely.
* Competitive environment: Without competition, there will be no continuous creativity. Of course, fairness is the rule of competition.
* Suitable material environment: “One can not make bricks without straw”. It is the same to creative education. We need some material support such as advanced instruments.
* Healthy social psychological environment: We know that every classroom is part of the larger social unit, so we can feel differences in social climate among the various classrooms in the various schools. Then what causes these differences among classrooms, among schools? I think it is the personality of the teachers. The teacher's behavior influences the student's behavior. So it is critical to create a healthy social psychological environment that has a high regard for knowledge.

2) The teachers should have creative thinking.
Creative education is a new field to most teachers, and we know that we won't successfully conduct the creative education without creative teaching personnel.

3) We need a proper educational system to foster creativity.

Creative education is a systematic project which includes the reformation of examination system, the transformation of education targets, the changes of education concepts and the training of creative teachers, etc.

In China, traditional education is exam-oriented. Teachers place more emphasis on basic knowledge and skill training, but neglect the cultivation of students’ creativity. So their teaching methods are always text-centered, and the students have not got enough activities involved in using their hands, eyes, mouths or social community. These cause the students to study passively. Therefore, our goals of the education reform mainly are the changes from passive learning to creative learning, from curriculum-centered learning to student-centered learning, from a relatively closed system of education to a more open, society-oriented system of education.

This revolution can be achieved through the profound changes in different aspects, such as the changes in educational concepts, the system of education, the objectives of teaching, and the methods of teaching.

But what is the most effective method under current circumstances? I think it is through the classroom teaching. We should establish a system that will facilitate the teachers to form their own creativity and bring it to full play.

As we know, the teachers can hardly exert their talent to explore student's creativity as much as they can under current education system and school administration, but since teaching takes place mostly in the classroom and almost all the students have their lessons at school, we should admit that the classroom-teaching plays an important role in the course of education. So many educators believe that the essence of a school is the classroom teaching. Then teachers will face questions of how to fully exploit students' potential, how to foster their initiative and creative ability. It will be discussed from following four aspects:

1. Teachers, as the providers of creative education, should first liberate their mind and give up some control to provide students with more autonomy.

It is well known that creative education is one of the most important and significant reforms in the course of education because first of all it is a real challenge for the teachers.

Traditionally, the goal of a teacher in classroom education is to transmit their knowledge and knowledge on the textbooks to the students. They direct classroom activity; they give lectures, criticize or justify on the basis of their authority. So the teaching methods are simplistic and unchangeable. They neglect suitting the instruction to the student's level and pay least attention to student's personality. The students are crammed with a lot of information and knowledge and are required to follow the teacher's direction step by step. Under such circumstances, creative education can hardly be launched because it limits student's opportunity of thinking.

To foster students' creativity, teachers should, above all, liberate their minds and change their roles from dictators to directors. With this change, some courses can be specially designed. That is, the traditional courses
should be creatively transformed in order to encourage students' creative thinking and develop their creativity. The emphasis should be on the development of one's initiative, enthusiasm, and creativity. The training on creative personality, creative thinking and the development of creative skills will lead to revolutionary change in education and learning.

In this way, some teachers may worry that increasing student autonomy will lead to confusion in the classroom, rather than improving creative education. But why do they have such worries? First, because creative education has higher requirements on the teachers. The students are given more choices, instead of being told what should do or how and when to do it. This requires the teachers to have more skills, more knowledge, and more experience to meet all kinds of questions and doubts the students may ask. Second, the students are accustomed to be controlled, once they have more freedom, they sometimes can't use it properly. Therefore, teachers need to prepare lessons very well and ensure that directions are clear enough, not too complicated. They should create tasks that are linked more closely to students' personal interests. Then teachers can increase students' autonomy gradually. Because students need time to adjust, and because teachers need time to experiment and test new instructional practices, it is important not to be too ambitious, not to try too fast.

Giving up some control is difficult for most teachers. But if it can be done successfully, it can liberate the teachers as well as motivate the students.

II. To create an open and active classroom atmosphere and allow students to express their opinion freely

There a Chinese proverb goes: "One takes on the color of one's company." It tells us the importance of environment that can affect one's behavior. The inspiration of creativity can flourish in an open environment. Louisell and Descamps (1992) emphasize four features of the environment that contribute to positive learning experiences for students:

One feature is the amount of weight the teacher places on openness with feelings…. A second dimension is the way success and mistakes are regarded…. A third basic dimension is the amount of enjoyment experienced by participants, both teachers and students…. The fourth and very critical feature is how well the teacher tolerates open-ended experimentation and discovery learning along with the increased confusion and student talk that accompany it. (See J. Scott Hewit and Kathleen S. Whittier, Teaching Methods for Today's School: Collaboration and Inclusion (Mass.: Allyn and Bacon, 1997), p.214)

The environment here we talk about includes two aspects: one refers to physical environment and the other refers to emotional environment. Now, let's first see the efforts of physical environment.

The physical environment can contribute to a sense of community in a classroom. In China, almost all the classrooms are arranged with rigid rows of desks. Maybe we are still not aware that this kind of environment actually does not support cooperation and communication among students since we have accustomed to it. But when we see some materials introducing education in foreign countries, or exchange ideas with foreign teachers, we notice that they always arrange students' seating casually. The students can either cluster the desks or circular them. In this way, the students feel free and think more actively.

Since a positive physical environment has great impact on the success of the creative activities that take
place within it. What are other arrangements that the classroom can be designed?

The seating can be rearranged. Different seating can be arranged depending on the different instructional strategy being implemented. For example, the students can cluster in groups when having cooperative learning. It will be helpful for them to discuss. But in a writing lesson, the students had better seated individually.

Moreover, some display space can be given to students. It is important for students to build displays throughout the classroom to reflect their learning. Some displays can be used to provide information about schedules, assignments or something else; others can be examples of successful student work. We can imagine the feeling when we enter a classroom that is vibrant, colorful, filled with students’ successful projects and some plants. I think everyone who steps into such a classroom will be happy and excited. Studying in such environment, the students will be comparatively easier to act creatively.

But the physical environment is just an outside factor that can affect students' reaction while learning. And the more important aspect is emotional environment. The chief task of the teacher is to establish a classroom atmosphere in which creativity is valued. It is vital to the atmosphere of the classroom that students should not be allowed to mock one another's ideas. A sarcastic tone made by a classmate can cause the student with a creative thought to go permanently into hiding with it. Therefore the teacher needs to pay attention to all signs of the creative process at work and should try to protect the process or creating.

Creative thinking can also be blocked because of lack of confidence. Many of us have such experience. When a creative idea sparkles in our mind, we are always excited at first, but quickly begin to doubt our idea. We may be afraid that it will not achieve the recognition, or it basically will be a failure. It is the same to the students. Sometimes students can be their own worst enemies: they are not willing to do some practice even they know how to do it because they are afraid of being criticized if they do it incorrectly; they are afraid of being wrong.

Since a student lacks confidence in his ability, we should give him more chances to experience success because confidence comes with success. A student always thinks he is not able to solve problems or make a project, it will leads to a circle of not trying. So the best way to begin to break the cycle is to believe in oneself unconditionally.

But just as we have mentioned, teachers play an important role in the course of creative education, so the teacher's behavior can also block the student's creativity. In many of our classes, the teachers provide environments that encourage learning and dealing with existing concepts rather than inventing new ones. There is a lot of emphasis on memorization but little on creativity. If our teacher can give more chances to students to express their creative thinking, and more generous, they give students some encouraging words such as “Terrific!” “That's a creative idea” or ”You did a good job”, or some valuable suggestions, I think our teachers will find that their students are all very smart actually.

From the following chart, we can see that different teachers behavior will cause different environment, which can affect students’ creativity.

<table>
<thead>
<tr>
<th>Environment</th>
<th>Teacher’s Behavior</th>
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<tr>
<td>Controlled environment, high astrictive</td>
<td>The teacher controls the dialog; the teacher sets the stage and controls student responses. Limited instructional materials are needed.</td>
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Controlled environment, moderate to high astrictive

The teacher initiates discussions and programs questions to elicit desired responses; the teacher controls student interaction to fit discussion. Some supportive instructional materials are needed.

Open environment, moderate astrictive

The teacher initiates problems or conflict situation; the teacher often guides the problem resolution as it moves from stage to stage. A great deal of student interaction is encouraged. Students are expected to accept responsibility for problem solving. A variety of instructional materials are needed.

Open environment, low astrictive

The teacher facilitates democratic processes; students define problems and initiate methods for solving them. The teacher provides many resources and encourages students to use resources out of the classroom.


III. To foster students' creativity, curriculum reform should focus on change and adaptability.

In China teachers in primary schools and middle schools are allowed to use unified curriculum. And the subjects that the primary school students should learn are 9 to 11 and 13 in middle schools (See 李晶:《中国的基础课程改革》(*The Curriculum Reform in China*), in Abstracts of the third China US Conference on Education, 1999). But how much percentage of what they learn is valuable? We say that since we live in a rapidly changing and constantly progressing society, knowledge changes so fast. Yet our change in textbooks is so slow that the contents of the present books are always out-of-date.

Concerning on English study, we can see that even till today listening comprehension materials for English major students, either in middle schools or in universities, mostly are *Step by Step* which was first published in 1983 and has reprinted 33 (1996) times. On the one hand we have to admit that this series of books are valuable. It is good to learners to improve their ability of listening from the first step. But on the other hand we should realize that since it has been published for more than ten years, many of its news and materials are too old to suit for current affairs, without certain background knowledge some news is not easy to be understood. And also with the development of technology and knowledge, many words or expressions are created to reflect these changes, such as the terms "Euro"(a kind of currency), "netizen"(people who always surge in the Internet) and “Taikonaur” (China's first unmanned spacecraft). Only in the updated materials can we contact this new information. Therefore those old-fashioned knowledge cannot represent the latest achievements in science and culture and cannot stimulate students' active learning. For this reason, the reform on curriculum must be enforced.

Then "What are the criteria of good curriculum ?"

Firstly, the curriculum should be based more upon process and less upon content. The knowledge explosion has made it impossible to give any student all the knowledge he requires, rather, because of this explosion, it becomes increasingly difficult to determine what knowledge is
important and how it should be taught. Processes, such as problem solving, discovery, experimentation, and evaluation, need to be transmitted to the student. If the student is capable of handling these types of processes, then he will be able to gain the knowledge he needs, when he needs it for a particular task.

Secondly, there should be greater independence on the part of each learner in building his own program. The challenge of the 21st century indicates and even demands that students be given the opportunity to build programs to meet their own particular needs, interests, and abilities.

Thirdly, there should be much greater awareness of the importance of vocational and technical education. Vocational preparation is extremely important since many people will change vocations three or four times during their life span. The emphasis in vocational education programs must encourage students to be flexible and adaptable.

Fourthly, principals and schools should have greater flexibility in curricular planning. The schools and the principals within them should be given a greater degree of liberty in developing or arranging the curriculum.

IV. Changing the teaching style from text-centered to student-centered is the way to foster students' creativity.


Two teachers will teach the same content in different ways because of their different teaching styles. For example, in an English class one of the assignments is to recite the new words. One teacher may ask the students to recite all these words after class, and next time he gives a quiz to the students. The other teacher may exam the assignment with a game. He asks student A defines a new word with his own words and then this student can call student B to give the correct answer. If student B doesn't know the word or he gives a wrong answer, student A then tells student B the correct one. But as penalty, student B should make a sentence with this word. In this example, the ways that these two teachers use reflect their different teaching style.

Typically, there are two kinds of teaching styles: text-centered and student-entered. Now most Chinese teachers are text-centered style. They are knowledgeable in the subject matter they teach and have high expectations of students. What they teach basically depends on textbooks, and therefore the assignments are taken directly from the texts. Thus we often see such situation in the class: students are always busy writing down the teacher's lecture content because their examination will be based on these notes. Under such circumstance, the students hardly have chances, or we could say hardly have time to think independently, needless to say creative thinking.

So it is necessary to change our teaching style to student-centered. The role of the student-centered teacher is as facilitator, not as expert or the central figure in the learning process. Curriculum is planned and delivered on the basis of students' readiness, interests, and developmental needs. In fact in the student-centered classroom what often takes place is the teacher and the students discuss one problem together and then they get shared decision. Students find this type of teachers more approachable than other teachers and usually can establish a comfortable relationship. Teachers consistently encourage independent thinking, critical
questioning, and risk taking among all students. In the meanwhile, students can learn as much from their classmates as they do from the teacher or the textbook.

Following are some principles of student-centered teaching (See Ciaran Sugrue Complexities of Teaching: Child-centered Perspectives (Washington DC, the Falmer Press, 1997)):
1. Full and harmonious development of the students

Because students "are complex human beings... with physical, emotional, intellectual and spiritual needs..." it is necessary to "cater for... [their] full and harmonious development..." (The Primary Teacher’s Handbooks, Ireland, p.13). So our curriculum should be more desirable and interesting. The subjects such as music, art and science are taken to be significant to the students. Creativity will not be developed without a broad knowledge basis.

2. Respect for individual difference

The Primary Teacher’s Handbooks (Ireland, p.13) declares that “because each child is an individual” he or she must “be valued.” For themselves and this necessitates provision of “variety of opportunities”, thus enabling learners to develop at their “own rate” and to their “fullest capacity”.

For example, although it is true that challenging tasks are generally more interesting, students who have a long history of failure, or who lack self-confidence initially may need tasks that they can complete easily, and they need more praise for their efforts. The teacher can give them more difficult problems or tasks slowly so that they can do quite well by and by.

Students also vary in their goals of learning, so the same goal structure will affect some students positively and others negatively. Students who learn slowly may hope the teacher can teach knowledge step by step. But those who are very smart may hope the teacher just tell them learning methods and ideas, they can learn these things by themselves very quickly and very well. Since these students all study in the same classroom, the teacher should give them different assignment according to their characters

3. More activities and discoveries

Students are more creative and attentive when actively involved in the learning process. Since the class is centered on the students, their feeling of the role in the classroom teaching is important.

Active learning is a useful way to foster students' creativity. It is especially effective in educating young children because it not only keeps students interested in the lesson, but also helps them to learn more information. During active learning, students may face some difficulties or create some new ideas. The teacher should encourage them to solve the problems or discover new information according to their knowledge. A research shows that when people are engaged in doing something rather than just listening and watching they actually learn better. (See J. Peterson, discussing Active Learning Over dinner, (Iowa, 1996)).

There are many ways to implement active learning in the classroom. Some are very simple, for example, a teacher might ask questions to students, or use a strategy. Other ways to implement active learning are to provide students with long-term learning experiences, or group activities.

Active learning has been proven successful in many different classrooms. This type of learning helps students to learn and apply knowledge. It also fosters students’ creativity gradually. By implementing active learning in more classrooms students will be more enthusiastic about learning.

What have mentioned above is mainly about how to foster students' creativity through the classroom-teaching channels. But since creative teaching is a reform on traditional education system, it of course will meet with many obstacles that might prevent it from further development.

One of the biggest difficulties is how to assess creative education. “Assessment is a fundamental part of the teaching / learning process with important potential benefits to both teachers and students.” (Richard C. Sprinthall, Norman A. Sprinthall, and Sharon N. Oja, Educational Psychology: A Development Approach, 7th
ed., (Mc Graw-Hill Companies, 1998)). The teachers often need to assess students' knowledge and skills in order to make informed decisions in the classroom. They need to know whether what has been taught has also been learned and how well it has been learned.

But current examination system that is mainly paper-and-pencil assessment is not suitable for creative education. Creative education is more likely to lead to creativity among students. It often leads to higher creativity scores, but at the same time it also leads to lower scores on standardized achievement tests because this kind of tests is based on the textbooks. So if we can't solve this problem properly, creative education can hardly be successful.

But can we say it will be fine even when we find a reasonable assessment? The answer is "NO". Different students have different degrees of motivation to learn in different aspects of the school curriculum, so creative education will have different effect on them. Some students are motivated intrinsically — by factors within themselves or inherent in the task they are performing. Other students are motivated extrinsically — by factors external to themselves and unrelated to the task they are performing.(See Jeanne Ellis Ormrod, Educational Psychology: Developing Learners, 2nd ed. (N.J.: Prentice-Hall, 1998)p. 476)

Intrinsically students engage in assignments willingly and are eager to learn classroom materials. They attempt to get the maximum benefit from it. As a result, they welcome creative education very much. In contrast, extrinsically motivated students may be only interested in performing easy tasks and minimal classroom requirements. They will do whatever they need to do to get a passing grade, but they probably won't do much more than that. So they don't care what kind of education method the teacher conducts and creative education may have little efforts among them.

There is another situation that blocks creative education. That is student's knowledge level. In the same classroom, some students learn very well, but at the same time, there are some students who have poor knowledge basis. Then the teacher is in a dilemma because one of the requirements of creative education to the students is having sound knowledge. If they continue their creative teaching, those students who lack in knowledge will feel hard to follow the teacher's direction, and this may cause them to be lagged behind further. But if the teacher abandons creative education, it also seems unfair to the top students.

Therefore, it is still a long way to go to bring creative education into full play.

Along with the knowledge-based economy, a more competitive, rapidly changing and constantly progressing world has emerged. It has set up new objectives and requirements for the development of Chinese education. To foster and develop students' creativity is becoming the major theme of the Chinese educational reform and the strategy to deal with the challenges of the new century.

In this paper I mainly discusses how to foster students' creativity through the classroom-teaching channels. Generally speaking, fostering students' creativity can be developed from the following aspects(See 《学生创造力的培养》 (The fostering of students Creative Ability), in Abstracts of the Third China-US Conference on Education,1999):

* Trigger the students' motivation and curiosity about science. Teachers should be ready to discover students' shining points and provide them with more autonomy. Both motivation and curiosity are initial for students to undertake continuously the scientific exploration, and at the same time they can promote the students to solve problems creatively.

* The basic condition for fostering students' creative ability is a good study environment and creative atmosphere. Try to create an open and active classroom atmosphere, allow students to express their unique opinion and ask questions freely, and give them the right to freely choose learning resources and approaches.
* Teach according to the student's level. Encourage them to select certain subjects according to their own level and interests. Try to bring the student's initiatives into full play.
* Teachers should focus on the training of student's self-study ability. The homework given to the students can be more difficult. To accomplish the assignment requires the students to use comprehensively the knowledge they have learned and think independently.
* Allow students to take part in the practice of scientific research and technology exploration. Encourage senior students to do some scientific research. The students should accomplish the task within a set time. This will force students to work hard, refer to many different resources and use their brain actively and independently. In this way, we could train the students' practical ability of thinking creatively and doing scientific exploration independently.

But the development of creative education is not smooth sailing because not only teachers but also students are all accustomed to our traditional education system. They have to face the obstacles in the course of educational reform: our current assessment system is not fit for creative education; differences of students' motivation and knowledge level hinder the development of creative education.


Therefore school education on the one hand should teach the students modern scientific knowledge, on the other hand should realize the importance of the fostering students' ability of thinking independently and creativity because fostering the students' creativity is the working aim and direction for schools and our nation.

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