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# TEACHER DISPOSITIONS AND CLASSROOM ENVIRONMENTS WHICH SUPPORT THE TEACHING OF CREATIVE AND CRITICAL THINKING SKILLS

Review by Moo Swee Ngoh



This article briefly reviews the challenges presented by the teaching and learning of creative and critical thinking, and discusses the need for teachers to provide a classroom environment that is conducive to such learning. It also describes the teacher dispositions considered essential for creating positive learning environments, and the importance of teacher dispositions in influencing classroom interactions.

## CHALLENGES OF TEACHING AND LEARNING CREATIVE AND CRITICAL THINKING

### INTRODUCTION

Prime Minister Goh Chok Tong presented his vision of 'Thinking Schools, Learning Nation' at the Thinking Conference in June, 1997, with a clear message for Singapore to prepare for the new challenges and rapid changes taking place. To realise this vision, the Minister for Education stated in Parliament, "... we will have to begin in our schools" (ST, 31 Jul 1997).

Schools will now need to give emphasis to the development of critical and creative thinking, and problem-solving skills both in teachers and students through the curriculum and school activities. This presents new challenges to teachers and students alike, and makes new demands on their teaching and learning.

The curriculum in Singapore schools is generally presented in clearly structured forms, operating under what Glasser (1969) terms the principles of certainty (where there is a right and wrong answer for almost everything), and measurement (where learning is quantifiable). Students are used to the seemingly clear boundaries of knowledge and learning as outlined in the curriculum, and evaluation criteria.

### Perkin's Principles

Fostering and adopting critical and creative thinking requires a new orientation of the mind as the pattern of creative and critical thinking is not simple and neat. According to Perkins (1984, p. 60) it is "an interesting

mix of strategies, skills, and attitudinal factors". He suggests that creative thinking is guided by the following six general principles:

1. Creative thinking involves aesthetic as much as practical standards.  
*Teachers will need to pay attention to the aesthetic, and not only the practical, aspects of their curriculum subjects, be they mathematics, physics, or art.*
2. Creative thinking depends on attention to purpose as much as to results.  
*Assignments for students will need to be broader in scope so as to allow them to generate, or select from, different purposes.*
3. Creative thinking depends on mobility more than fluency.  
*School problems must not be narrow or convergent so that students will be able to exercise their mental mobility.*
4. Creative thinking depends on working at the edge more than at the centre of one's competence.  
*Students will need to be challenged enough so that they work to the limits of their competence in being creative.*
5. Creative thinking depends as much on being objective as on being subjective.  
*A balance between objectivity and subjectivity in creative practices will need to be maintained.*
6. Creative thinking depends more on intrinsic, rather than extrinsic motivation.  
*Schools will need to foster intrinsic motivation among students if the latter are to maintain their creative behaviour.*

## Ambiguity and Risk Taking

Teaching critical and creative thinking involves teaching students to use higher order thinking processes which require the manipulation of information rather than the reproduction of knowledge (Grant, 1988). Such higher order thinking tasks are by nature ambiguous due in part to the vagueness of evaluation criteria. These tasks also require large amounts of new learning and, therefore, carry a greater risk of failure. It is this ambiguity and risky nature that makes critical thinking tasks more difficult for teachers to manage in classrooms.

There is increased pressure on the students too. While they are expected to be self-directing in carrying out critical and creative thinking tasks, they also have to meet the demands of the teacher's learning goals. Achieving a balance between the two sets of expectations may present difficulties for them.

## THE CLASSROOM ENVIRONMENT

Classroom environments must be designed to support intellectual risk taking, and foster intrinsic motivation so that students will be creative and self-directing in their learning. Creating and managing such environments is central to the work of teachers. They have also to create the right attitudes in students towards learning, and to gain their interest and involvement. In short, teachers will need to view their management function as an **enabling** activity – establishing the conditions, and interacting with students in

ways that enhance their learning (Froyen, 1993).

Arends (1994) defines a productive learning environment as one where students have positive attitudes toward themselves and their classroom group and where they display a high degree of achievement motivation and involvement in academic tasks. Teachers are the key to establishing positive classroom environments. The classroom atmosphere they create will determine their success in integrating the class, and their effectiveness in promoting the social and intellectual learning of the students.

Teacher decisions and actions that help shape the classroom environment are influenced by their beliefs, disposition (Putnam & Burke, 1992), and teacher stance (Bauer & Sapona, 1991). As research has shown, certain dispositions and stance are seen to be essential if teachers are to be successful in creating productive learning environments in their classrooms.

## REVIEW OF RESEARCH

### Classroom environment and teacher dispositions

Putnam and Burke (1992) suggest that in order to create a productive classroom environment, teachers will need to view the classroom group as a learning community of which they are members (and leaders). Developing a classroom learning community requires teachers to possess four dispositions:

1. **Instructional leadership**, the key to which is motivating (instead of ordering and commanding) others to collaborate in shared activities;



### Instructional

2. **A developmental perspective**, viewing everyone in the community as being somewhere on a continuum of personal development, and no one is a finished product;



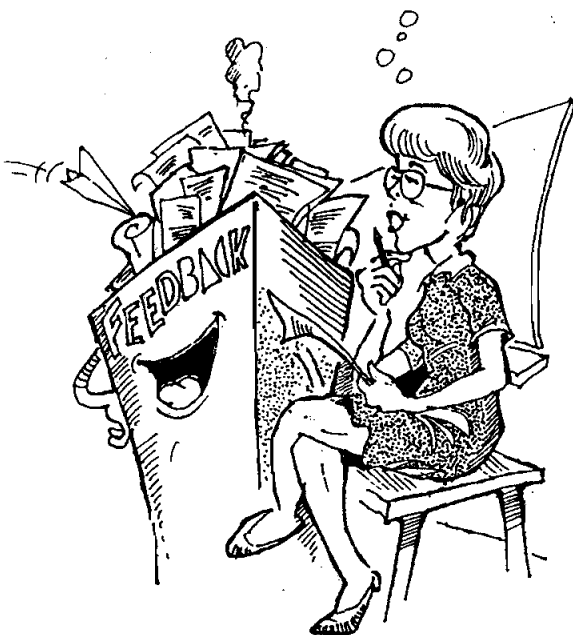
### Developmental

3. A **cooperative disposition**, teaching students the skills of cooperation, and having all members of the learning community internalize the cooperative norms in order for positive effects to occur;



**Cooperative**

4. A **reflective orientation**, which keeps teachers open to the multifaceted nature of human cognition, and enables them to see the disruptions of some forms of student behavior as problems to be understood and solved, rather than as traits to be crushed or trials to be endured.



**Reflective**

## **Classroom Interactions And Teacher Stance**

One significant dimension of the classroom environment is classroom interactions. According to Bauer and Sapona (1992) productive interactions in the classroom are related to teacher stance, which encompasses the teacher's personal posture toward self and others, as well as theoretical orientation and instructional and management techniques. The authors contend that a teacher's stance may inhibit students' opportunity to participate, which, in turn is likely to have a significant impact on student learning.

An example of the impact of teacher stance on classroom interactions given by the authors is the **reply** and **assess** behaviours of teachers described by Barnes (1982). Teachers who **reply** would make comments like, "That's one strategy" or "Could you elaborate on that?" The implication is that the teachers take the students' perceptions about the subject matter seriously though they may extend and modify it. The student and teacher are therefore in a collaborative relationship, which leads to increased student confidence in actively interacting with the subject matter.

Teachers who **assess** would make comments such as “*Well done*” or “*No, that’s not what’s in the book*”. In so doing, they distance themselves from students’ perceptions and apply external standards which may devalue the students’ construction of the task at hand.

A second example of the impact of teacher stance on classroom interactions is seen in the **task-oriented** and **role-oriented** teachers described by Froyen (1993):

**Task-oriented teachers** may be inclined to operate according to two principles which appear to dominate classroom practices: the *certainty principle* and the *measurement principle*. The *certainty principle* asserts that there is a right and wrong answer for everything. Students who can consistently give the answers that teachers want are winners in school. The *measurement principle* asserts that the products of learning should be quantifiable. Thus, students who have accumulated the most points for giving right answers are good students and have an important role in school;

**Role-oriented teachers**, on the other hand, believe that the positive relationship they have with their students will provide both

the inspiration and incentive for them to learn. Students with a sense of belonging to the class are more likely to become responsible members of the group and cooperate in its activities. Relationships with people who care enable students to risk responding to a variety of challenges and to recover from setbacks.

## CONCLUSION

As Singapore teachers gear up to meet the challenges of thinking classrooms and thinking schools, they will need to upgrade their pedagogic content knowledge and skills, and acquire a mindset of continual learning. They need also to have a new orientation towards the teacher’s management role. The goal of classroom management will have to be the creation of a classroom environment which is conducive to their students developing creative thinking and problem-solving skills. They will need to view their classroom group as a learning community of which they are both leaders and members. In addition to providing instructional leadership, they will need to possess teacher dispositions such as a developmental perspective, a cooperative disposition, and a reflective orientation

## IMPLICATIONS

As shown below, teachers who provide instructional leadership, and have a developmental perspective, a cooperative disposition, and reflective orientation are more likely to be successful in creating classroom environments that support and foster students' critical, creative and problem-solving skills (adapted from Putnam & Burke, 1992).

1. ***A teacher who views himself as the instructional leader as well as member of a learning community (ie. the class he teaches) is likely to acquire a mindset of motivating those whom he is leading, and collaborating with them in learning.***

Thus, he will be using more of the reply behaviours in classroom interactions to show his students that he welcomes and values their views and suggestions. In so doing, he invites the risk taking that underlies all learning, particularly that of learning to think critically, creatively, and innovatively.

2. ***A teacher with a developmental perspective will see himself as well as his students to be learners who are still developing and growing.***

His students are seen by him to be at a particular developmental stage at a given time, and he will assume that incremental progress and change can occur. He adopts a *problem-solving approach* to the difficulties he encounters in the teaching-learning process. By implication, teachers with a developmental perspective will be learners themselves, and are likely to be more *encouraging* and *supportive* of their students' efforts in learning. This will help create in the latter positive attitudes towards learning, and give them greater confidence in coping with the higher order thinking tasks.

3. ***A teacher with a cooperative disposition will value relationship-building.***

In his class, both between him and the students, and among the students. He will teach the skills and values of cooperation, and organize instruction with an emphasis on collaboration and cooperative learning. While he recognizes the value of competition, he does not see it as the prime motivator for all successes. He will be *role-oriented* instead of *task-oriented* in classroom interactions thus encouraging student participation, and positive student responses to challenges such as those presented in higher order thinking tasks.

**4. *Teachers with a reflective orientation are likely to have a mindset of continual learning.***

They will be introspective, reflecting on what they do, and self-evaluative. Reflective teachers welcome feedback from students and colleagues on their professional performance, and are critically self-aware. Such a disposition of the teacher will not fail to have an impact on his students, and inculcate in them a similar mindset of continual learning and reflection. Students will also learn to be *self-regulating* and *self-directing* in their learning.

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