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Curriculum reform in China: student participation in classrooms using a reformed instructional model

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ABSTRACT

This study examined how Chinese educators and teachers implement curriculum reform in mathematics classrooms, through an example of the reform in one district in China that is promoting a reformed instructional model called the DJP model. The data used in this study came from a project that followed teachers in this district for two years. By analyzing 64 classroom videos from 16 teachers, this study showed how students participated in classroom activities after using the reformed instructional model. Furthermore, the effect of teachers' attitudes on implementation of the reformed model is discussed. The results show that the DJP model had a positive effect on increasing student participation, while teachers' attitudes played a key role in this process. This study can contribute to a broader context by suggesting an efficient way to increase student participation and highlighting the important role teachers play in implementing curriculum reform.

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1. Introduction

Rapidly developing societies around the world have changed people's way of life and thinking, which has led to a higher demand for people's ability in creativity, application, communication and cooperation. To prepare students well for society, many countries are reforming their education. Through international comparison studies such as TIMSS (Trends in International Mathematics and Science Study) and PISA (Programme for International Student Assessment), more is now known about what is happening around the world, which has led to a trend of countries criticizing their own education systems and learning from other countries. Many Western countries, which have lower rankings in TIMSS and PISA, reform their education systems by learning from the higher ranked Eastern countries such as Singapore, Japan or China. At the same time, East Asian countries are reforming their education systems in order to increase student participation, group discussion and teamwork in classrooms, which are the strengths of Western classrooms. Through this kind of comparison and communication, countries around the world, no matter whether Eastern or Western, have started to share more common educational goals (Atweh & Clarkson, 2001). One of these goals is to increase student participation in classrooms.

Research has shown that students' active participation leads to better academic achievement (Astin, 1999; Maziha, 2010). Unfortunately, the fact is in China, many students at all grade levels do not actively participate in classroom activities (Kong, 2003; Zeng, 2001). While many studies have been conducted to determine the factors that influence students' willingness to participate or to gain insights into how to stimulate active participation (Abdullah, Bakar, & Mahbob, 2012; Crombie, Pyke, & Piccinin, 2003; Narayan, Heward, & Gardner, 1990), studies on the patterns and levels of student participation in classrooms

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are still lacking. Additionally, most previous studies concerned behavioral participation rather than cognitive level of participation, which is very important because a high level of cognitive participation means a high level of thinking. Aiming to contribute to these research gaps, this study was designed to investigate the behavioral and cognitive level of student participation in classrooms in China in the context of the current curriculum reform.

When discussing education in China, people always think of teacher-centered, rote learning and passive learners. However, after 15 years of reform, teachers, students and classrooms in China have changed a lot. The new mathematics curriculum standard extended the two goals of education in previous curriculum standards (basic knowledge and basic skills) to four goals (basic knowledge, basic skills, basic mathematical thinking and basic activity experience). One of the main aims of this reform is to encourage students to participate in classroom activities through various instructional strategies. In the new standard, it states: “classroom teaching and learning is a process that teachers and students actively take part in classroom activities, interact with each other and make progress together. Students are the main body of learning activities and teachers are organizers, guides and cooperators.” (Ministry of Education, 2011, p. 4).

This study takes one district, which is implementing a reformed instructional model-DJP (Dao Jiang Ping, Chinese pinyin) model, as an example of how the current curriculum reform is being implemented in Chinese mathematics classrooms. The DJP model is one of the reformed instructional models in China. It is being implemented in Longquan district, Chengdu city, Mainland China. This model views students as the masters of the classroom, while teachers are guides, organizers and cooperators, which aligns with the definition of the roles of students and teachers in the new curriculum standards. In the DJP model classrooms, students often go to the front of the class to explain concepts, theories and solutions. This model holds belief that students’ experiences as “little teachers” will increase active participation, enhance deep thinking and, most importantly, will be good for the development of students’ overall ability. These philosophies underlying the DJP model are supported by many studies. The study of Wade (1994) showed that most students like to take part in classroom activities such as group discussion, sharing ideas with peers, and presenting solutions in front of the whole class, and that they will understand the learning content better through these activities. Another study also showed that students enjoyed the experience of sharing their ideas publically to the whole class (Cao, Liao, & Wang, 2008).

It is widely accepted that teachers’ beliefs and their classroom practices are strongly related (Archer, 1999; Kim, 2007). Some researchers have even argued that teachers’ beliefs are the key factors in the success of curriculum reform. Thus without changes in teachers’ beliefs, the reform cannot be deep (Chen & Leung, 2010; Handal & Anthony, 2003). Therefore, it is natural for this study to ask the question: what is the effect of teachers’ beliefs on their implementation of the DJP model? To answer this question, this study discussed the relationship between teachers’ attitudes and the levels of student participation in their classrooms.

Overall, as very few studies on the curriculum reform in China are published in international journals, this study will contribute to introducing how China is promoting the curriculum reform and examining the effect of teachers’ attitudes on their implementation of the reform. As increasing student participation is a worldwide concern, what Chinese educators and teachers do to encourage student participation can offer suggestions to other countries.

The research questions in this study are:

1. What is the level of student participation in DJP model classrooms?
2. How do teachers’ attitudes toward the DJP model affect their implementation of this model in their classrooms?

2. DJP model

“DJP” is short for “Dao Jiang Ping”, which is the pinyin of three Chinese characters. The three Chinese characters represent the three main elements of the DJP model. “Dao” can be translated into “self-study”, which means with the guidance of learning materials, students explore the learning content before teacher’s teaching; “Jiang” can be translated into “student-teach”, which refers to students’ activities of going to the front of the class to teach their classmates; “Ping” can be translated into “peer-comment”, which refers to students’ activities of making comments on other students’ answers. Overall, the DJP model is defined as a teaching and learning model which aims to develop students’ learning ability by the activities of “self-study”, “student-teach” and “peer-comment”, with the guidance of the teacher (Wang & Wang, 2013). Details of the three elements were discussed in Section 2.2.

2.1. Background of the DJP model

The DJP model originated from, and was implemented in, Longquan district, Chengdu city (the capital city of Sichuan province), Mainland China. Several years ago, this district suffered from problems caused by traditional teacher-dominated teaching. For instance, students did not understand the mathematics content even though the teacher explained again and again; some students obtained high scores in exams but lacked in interest in studying; and most students had low creativity and communication abilities. Facing these challenges, and inspired by the current curriculum reform in China, educators and teachers in this district realized that the traditional way of teaching and learning must be changed. The reform began in one of the worst schools in this district, where students were very naughty, with most of them having no interest in studying.

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