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The Survey on Classroom Discussion of Middle School Students

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Abstract: Classroom discussion was an effective method to cultivate students' thinking ability, expressing ability and creativity. This study investigated the status of classroom discussion of 1228 middle school students by a self-compiled scale. The results showed that the scale of classroom discussion had good reliability and validity. In the three dimensions of the classroom discussion, the teacher support gained the highest score; the discussion topic and form gained the lowest score and the student participation was in the middle level. However, these three dimensions had not reached the satisfactory level. There were significant

differences in the three dimensions of classroom discussion between students from only child and multiple children families. Also the junior school students and high school students were significantly different in the classroom discussion.

Keywords: classroom discussion; creativity; middle school students

Introduction

The report of "learning to survive" from International Education Development Commission of UNESCO pointed out that the education could not only develop creativity but also stifle creativity (Chun Lin, Jing Wang, 2000). Even though teaching or learning creativity may seem to be a very challenging task for educators In education, it is possible to discover the creativity of an student and to eventually develop this potential(Lee Kyunghwa,2015). To cultivate creative talents, the teacher should give students the opportunity training the ability of creative thinking in the class. Classroom discussion was a kind of free discussion on an important topic prepared by the students and guided by the teachers (Chun Lin, Jing Wang, 2000). It plays a vital role in developing students-centred learning, stimulating students' speculative thinking and cultivating their cooperative spirit (Xingjiang Li, 2014). Classroom discussion provided a good chance for students to cultivate their ability of creative thinking. It was one of the teaching methods which can be easily realized in middle school classroom. This study attempted to investigate the status quo and characteristics of middle school students on classroom discussion by a self-compiled scale. It not only could provide a measurement tool for classroom discussion but also find out whether the current situation of middle school students in classroom discussion was satisfactory.

Creativity was unique to human beings, and it was a psychological trait which one brought novel, unique, feasible and applicable products by certain conditions. (Qinglin Zhang, Sternberg, Jiwei Si, Zhan Xu, 2002). The creativity in the field of education was to cultivate the students' creativity, and it was the premise. Namely it was a thinking activity which on the basis of acquired knowledge one imagined, conceived and got creative ideas, or analyzed and solved all kinds of problems which there were on solution to the formers. Classroom discussion was one of the important ways to cultivate students' creativity because its major characteristic was cultivating students' creative practice and its major form was constructing educative, creative and practical activities. Thus, classroom discussion was most suitable for cultivating the students' creative thinking (Jian Niu, 2001).

The research on classroom discussion paid more attention to the purpose, the function and the theme of the discussion. The purpose of classroom discussion

was to motivate the students' interest and curiosity in learning content, stimulate students to think, question, explain, reflect and recall (Chuanbao Jin, 2011). Discussion was an effective way to develop students' consciousness of participation. It was also beneficial to train students' language skills, enhance the mutual understanding between teachers and students and between students, and cultivate students' confidence, cooperation spirit, thinking ability and innovative ability (Mancang Liang, 2009). Classroom discussion provided a stage for students to develop their own thinking ability and display their talent. It not only benefited to their cultivation of thinking ability, but also could foster their presentation skill, participating consciousness and innovative consciousness (Jiafang Wei, Zhuying Ling, 2003).Regarding to the subject of classroom discussion, how to choose it was not optional. The topic or subject of classroom discussion should be determined by the students' common problems in the study (Tizheng Wang, 1984).

In addition, in the activities of the classroom discussion, the participation of students and teachers attracted many researchers to study. From the students' side, there were some differences between the students of different gender. The boys tended to feel happy questioning about the reading material, while the girl would resist a discussion that seemed to be hostile to them. Most boys more easily accepted the classroom debate as a learning tool, and arguing in the classroom was more suitable for boys (Xiaozhen Shi, 1997). The teacher should keep the proper silence in classroom discussion and gave enough time to wait students explaining the answer. As a teacher, it was important to remain calm and patient. When the students were thinking, teachers just wait (Chuanbao Jin, 2011).

On one hand, teachers should try to control their emotions, avoid randomly revealing the appreciation or opposing opinions to students, and trait them equally as much as possible. On the other hand, teachers should timely analyze, guide, and correct some contradictory conclusion, wrong inferences, superficial argument of the students, but they were sure to take the right way to avoid hurting the students' self-esteem and depressing students' enthusiasm to discuss. Teachers should ensure that each student participate the discussion equally, pay more attention to the students who lack enthusiasm for participation. At the same time teachers should stimulate their performance desire, give their opportunity, not demand quality, and focus on emotional support and encouragement (Baoqun Ai, 2006). The teacher should pay attention to the answer of the students who were not consistent with his own views, and it was likely that the answer is a new understanding and explanation that the teacher had not expected (Jinkuan Cheng, 1996).

Research design

On the basis of referencing the previous research literature, an open-ended questionnaire about class discussion was given out to 10 normal students and some items were collected. After classifying and consolidating these items, 3 experts discussed and modified them several times, and 25 items about classroom discussion were obtained. Using Likert five point rating table, subjects were required to judge the description of 25 items among "fully accord", "mostly accord", "generally accord", "less accord", and "do not accord". These answers were scored by using 5 points for "fully agree" down to 1 point for "do not agree". In order to test the criterion validity, the creativity of one part of subjects was also measured by Williams Creativity Assessment Packet(Williams, 1980).The scale had 50 items, the answer had three, and the subjects were asked to choose one from the three, that is "full accord", "partial accord" and "do not accord" . The score was divided positive score and reverse score. The scale measured one's creative tendency from four dimensions, which were adventure, curiosity, imagination and challenges.

Questionnaires were distributed to 1400 middle school students in Chongqing and Tianjin of China. Permission was obtained from teachers in classes. After a brief explanation of the study, prospective participants were sought. They were given the questionnaire with the assurance of anonymity and confidentiality of responses. Participants were informed that they were not under any obligation to participate and they had the right to withdraw at any point if they felt inclined to discontinue with the investigation. Participants were also informed that there were no right or wrong answers and were encouraged to be honest in their responses (Hua Zhang, Xuechun Yang, Ying Zhang & Brian John Hennessy, 2014). 1228 valid questionnaires were returned, the effective recovery rate was 87.71%. The subjects were between 11 and 20 years old, and the average age was 14.95 years (the standard deviation is 1.651). Male students were 557(45.4%), female subjects were 659(53.7%), and the missing was 12(1%). Only children are 591(48.5%), non-only children are 624(50.8%), and the missing was 8(0.7%). The junior school students are 635(51.8%), high school students are 591(48.2%), and the missing is 2(1%). The subjects who filled out the scale of Williams Creativity Assessment Packet were 522. Data were processed by AMOS17.0 and SPSS16.0.

Results

The reliability and validity of the scale of middle school students

Combining the reliability of items and content analysis for one 614 samples, 6 items were deleted. The left 19 items were divided into three dimensions including the discussion topic and form (7 items), for example, "the topic of classroom discussion always interested me"; the student participation (7 items), for example: "team members often encouraged each other to speak as much as

possible"; and teacher support (5 items), for example: "in the discussion, the teachers encouraged us to thinking and questioning others' opinions." The Cronbach's Alpha coefficients of three dimensions were respectively 0.778, 0.795, and 0.660 and the total Cronbach's Alpha coefficient of the total questionnaire was 0.893.

The reliability of another 614 samples had a good level. The Cronbach's Alpha coefficients of each dimension were also acceptable. The discussion topic and form was 0.766, the student participation was 0.788, and the teacher support was 0.798.The total Cronbach's Alpha coefficient was 0.906. Further analysis found that the total Cronbach's Alpha coefficient of the 1228 was 0.902, and the Cronbach's Alpha coefficients of junior school students almost aged from 12 to 15 was 0.891, and the Cronbach's Alpha coefficients of high school students almost aged from 15 to 18 was 0.907. It showed that the scale had a good reliability and was suitable for different ages in middle school.

The confirmatory factor analysis showed that the main indicators of fitting the model were good. The fitting index of $\chi 2/df$ was 4.594, RMR was 0.085, GFI was 0.900, TLI was 0.857, CFI was 0.876, and RMSEA was 0.077. The fitting index reached the recommended standard (Chongzeng BI, Xiting Huang, 2009), suggesting that classroom discussion scale had good construct validity.

The creativity of students was measured. The total Cronbach's Alpha coefficient of Williams Creativity Assessment Packet in this survey was 0.906. There was no significantly correlation between the topic and form, the student participation in classroom discussion and the imagination in creativity in Table 1. However, the other dimensions of classroom discussion and creativity were significantly correlated with different degrees. It showed that the scale of the classroom discussion had good criterion validity.

Table 1. The correlation coefficient between classroom discussion and creativity.

	Adventure	Curiosity	Imagination	Challenges
The discussion topic and form	0.144**	0.124**	0.053	0.092*
The student participation	0.184**	0.145**	0.068	0.140**
The teacher support	0.194**	0.181**	0.102*	0.164**

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

The characteristics of middle school students' classroom discussion

The means of the three dimensions of the classroom discussion of middle school students (N=1228) were at the lower level, including the discussion topic and form (3.36±0.84), the students participate (3.67±0.82), and the teacher support (3.78±0.82). From the current situation of classroom discussion, the teacher support was the highest level, the student participation was in the second, and the topic and the form was the lowest. It was obvious that the middle school students evaluated the objective factors relatively lower, and evaluate the

subjective environments relatively higher. There was no significant difference in the three dimensions of classroom discussion in different gender students.

Table 2. The t test of classroom discussion for the middle school students between students from only child family and multiple children families.

Classroom discussion	Means and standard deviation		t, p
	Students from only child families (n=596)	Students from multiple children families (n=624)	
The discussion topic and form	3.39±0.84	3.33±0.83	t=1.224,p=0.221
The student participation	3.73±0.83	3.61±0.82	t=2.498,p=0.013
The teacher support	3.73±0.82	3.83±0.82	t=-2.268,p=0.024

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

The means of the discussion topic and form, and the student participation of students from only child families were higher than those from multiple children families in Table 2. It was found that there was significant difference in the student participation by independent samples t test ($p<0.05$), and the student participation of students from only child families was significant higher than those from multiple children families. However, in the dimension of the teacher support, students from multiple children families were significant higher than those from only child families ($p<0.05$).

Table 3.The t test of classroom discussion between junior school students and high school students.

Classroom discussion	Means and standard deviation		t, p
	Junior school students (n=635)	High school students (n=591)	
The discussion topic and form	3.54±0.78	3.17±0.85	t=7.793,p=0.000
The student participation	3.78±0.81	3.55±0.83	t=4.798,p=0.000
The teacher support	3.89±0.82	3.66±0.81	t=4.981,p=0.000

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

From Table 3, the means of all three dimensions of classroom discussion for junior school students were higher than high school students, and there were significant differences between them ($p<0.05$). The junior school students evaluated the discussion topic and form, the student participation and the teacher support higher than high school students.

Discussion

General characteristic of classroom discussion

The structure of classroom discussion included objective factor and subjective factor. Objective factor referred to the content and way of classroom discussion, was also named the discussion topic and form; subjective content was about the participant, namely the student participation and the teacher support. From the results of this survey, the middle school students evaluated the classroom discussion not so highly, which showed that there was still a lot of room for improvement in the classroom discussion. Regarding to the discussion topic and form, it should be targeted, typical, challenging and open, thus the purpose of learning and mastering knowledge could be achieved (Kunling Fu, 2013). And it was necessary to take more flexible and novel form in classroom discussion.

In the classroom discussion taking the student as the center, the student participation should be very important, however the middle school students evaluated this lower than the teacher supports. The activity of classroom teaching was not only the bilateral activity between the teachers and students, but also the multilateral activity between students. The advantages of classroom teaching activity for students' individual development is that the interaction and mutual influence of the learning community. It should be said that in most occasions, good cooperation between students is better than personal efforts (Guoping Wu, 2000). In classroom discussion, the student was in the main position, the communication between students and the encouragement from each other would play the effect on the classroom discussion activities.

Middle school students evaluated the teacher support the highest, which showed that the idea of cultivating students' comprehensive quality had been recognized by many teachers, and they put the idea into action and supported students' exploratory behaviors. Students were the center of classroom discussion, teachers were a guide, partner, sharer, and teachers should teach them how to master the cooperative learning method and the necessary cooperative skills (Kunling Fu, 2013). The relationship between teachers and students in classroom discussion was equal, and teachers and students listened to each other, they were also questioners and responders. Only in this way, students could speak freely, said the doubt and got it on their thinking in a relaxed, equal, free atmosphere of dialogue teaching, (Cuirong Yang, ChengJun Zhou, HongTao Wei, 2013). In the course of the classroom discussion, the teacher could not easily interrupt and evaluate, but guided them timely according to the rhythm of discussion, maintained a warm and harmonious learning environment (Rui Li, 2012). Teachers also accepted students to question and supported students with different ideas, encouraged students to participate in classroom discussions, thus, students in the classroom would be more eager to speak, put forward different questions and viewpoints (Yackel & Cobb, 1996). Another finding about it was meaningful. Students were more prone to

elaborate their contributions, more easily engaged in discussion topics aligned with their interests, and resolved conflicts if they were in peer-led discussions than teacher-led discussions (Jeong-bin ea al., 2015).

Group differences in classroom discussion

The mean of the student participation for students from only child families in classroom discussion was significant higher than those from multiple children families. It may be related to the family environment of the only child. In the only child families, they had no brothers and sisters and lacked of peers and communication in peers in most time. When the class carried out such activities, the only child had the opportunity for discussing with peers, and perceived more student participation, peer encouragement and so on. In the dimension of teacher support, the students from multiple children families were significantly higher than students from multiple children families. Because of family environment, students from multiple children families might get less parents concern and opportunities for communication, compared with students from only child families, they lack the interaction with the elders. Thus in classroom discussion activities, various supports from teachers gained their much more recognition.

The junior school students were significantly higher than the high school students in all three dimensions of classroom discussion. It demonstrated that the junior students recognize the classroom discussion higher than the high school students. In the high school classroom, the classroom discussion was conducted less and less, especially for the high grade students. Their pressure of college entrance examination not only made them difficult to carry out regular classroom discussion, but also have less time to participate the classroom discussion fully. The classroom discussion was helpful to the development of divergent thinking. Students in the multilateral communication dared to express their unique views, which were conducive to the cultivation of innovative consciousness (Guoping Wu, 2000). But at this time, the classroom discussion gave way to exam oriented education, and this problem should deserve concerns.

Conclusion

This study had the following conclusions. Firstly, the classroom discussion scale had good reliability and validity, which could be used to measure students' classroom discussion. Secondly, the classroom discussion of middle school students did not reach the ideal level, the discussion topic and form was the lowest, followed by the student participation, and the teacher support was the highest. Thirdly, there were significant differences in the student participation and the teacher support between students from only child families and multiple children families. In all three dimension of classroom discussion, junior school

students and high school students were significantly different. There was no difference in the classroom discussion between different gender students.

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