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15. TEACHERS' USE OF DIFFERENTIATION STRATEGIES IN THE HONG KONG CLASSROOMS

INTRODUCTION

The 21st century has brought dynamic changes around the world. In the field of education, different revolutions and reforms have been initiated. One such reform is a growing trend toward inclusive education. Students come to class with different experiences, characteristics, abilities, beliefs, and needs. According to the Education Commission (2000), schools should diversify teaching and evaluation methods to match the individual needs and differences of students. Within the complex educational context, schools need to differentiate their curriculum to meet the needs of all students, including those with special needs, intellectual giftedness, or unique backgrounds (Ashman & Merrotsky, 2009).

Differentiation can be dynamic and flexible, with which educators can have a set of strategies from which to build a list of appropriate provisions for the individual needs of students in diverse classrooms (Smith, 2008). However, what kinds of differentiation strategies are commonly used in Hong Kong primary schools? What obstacles do teachers face when they implement such strategies? In response to these questions, the researchers conducted a preliminary study to explore these issues.

DIFFERENTIATION: CONCEPTS AND CHALLENGES

Concepts of differentiation

The concept of differentiation is not new. The differentiation movement has spotlighted the idea of meeting the needs of all students in the classroom. Differentiation involves finding multiple ways to structure a lesson so that each student is provided with an opportunity to work at a moderately challenging level. Differentiation is an organized yet flexible way of proactively adjusting teaching and learning to meet the ability level of students, while helping all students achieve maximum growth as learners (Tomlinson, 1999).

Differentiated instruction is a way of thinking about teaching and learning. According to Cooper and Tomlinson (2006), differentiated instruction works under the following assumptions:

- Students differ in their readiness to learn, in their interests, and in the way they learn.
- Student variance affects the learning process.

- Learning must happen within students, not “to” them.
- The job of teachers is to teach students and teach content.
- Each student needs and deserves a teacher who actively helps him or her to identify and build upon personal strengths, recognize and address areas of weakness, and develop a sense of self-efficacy that comes from accomplishing important goals.
- The most effective teachers use assessment information to develop and modify instructional plans so that the classroom “works” for the diverse students in it.
- Classrooms effective for academically diverse populations define “fairness” as making sure that everyone acquires what he or she needs to succeed, not as treating everyone exactly the same.

Differentiation is a term used to describe “the process of making educational expectations match individual students’ different learning needs” (Matthews & Foster, 2009). On the macro-level, suitable modifications may be made in curriculum planning, including the following:

- removing unnecessary or repetitive chunks of content;
- enhancing existing units of study by reorganizing or intensifying content; and
- connecting a unit of study to other subject areas or disciplines.

On the micro-level, teachers could adopt one or more of the following ideas when working with the program:

- using flexible grouping practices based on the strengths, interests, and weaknesses of students;
- increasing breadth (i.e., more choices and learning style variations); and
- increasing depth (i.e., different levels of content for different ability levels).

Challenges in Implementing Differentiation

Adaptive teaching in mixed-ability classrooms is a difficult task. Catering to learner diversity is a great challenge for all teachers. According to the vast literature, teachers tackle many obstacles to implementing differentiation (e.g., Fletcher-Campbell et al., 1999; Lo, Morris & Che, 2000; Schumm & Vaughn, 1995). Schumm and Vaughn (1995) listed five main obstacles to differentiation in practice:

- Planning for differentiation is time-consuming.
- Implementing different groups, procedures, and tasks while managing the whole class is difficult.
- Simplifying the curriculum or slowing the pace of instruction may compromise the progress of higher-achieving students.
- Using different tasks and resources may draw attention to students with difficulties.
- Simplifying everything and making success easy to achieve does not reflect the real world, for which the students need to be prepared to function.

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Van Tassel-Baska and Stambaugh (2005) also highlighted some impediments to curriculum differentiation: teachers' lack of knowledge of subject matter, classroom management skills, knowledge about modifying the curriculum, planning time, administrative support, and relevant pedagogical skills; their attitudes and beliefs about learning; issues regarding responding to diverse populations; and difficulties in the effective use and location of resources.

However, are these challenges faced by Hong Kong primary schools? How is differentiation practiced in these schools? Studies on the practice of differentiation in Hong Kong primary schools are limited. The present exploratory study aims to explore the differentiation strategies used in Hong Kong primary schools. The authors play the role of external teacher educator in providing professional support to schools. Thus, the aim is to draw some implications to support the practice of differentiation in Hong Kong classrooms.

DATA COLLECTION

School Context

The study was conducted in two local subsidized primary schools. School A has been established for over 60 years, and School B for 50 years. School A has 20 classes and 41 teachers, whereas School B has 11 classes and 22 teachers.

Participants

School A. Twenty-six completed questionnaires were received from School A, a response rate of 63.4%. Of the respondents, 79% were female. More than 77% were over 31 years old. Most of the teachers (80%) had received a bachelor's or master's degree. More than 80% of the teachers had been teaching for more than six years. Less than half had received special education training (34.6%) and gifted education training (15.4%).

School B. Twenty-one completed questionnaires were received from School B, a response rate of 95.5%. Female teachers accounted for 66.7% of the respondents. More than 80% were over 31 years old. Most of the teachers (95%) had received a bachelor's or master's degree. Over 90% of the teachers had been teaching for more than six years. Quite a few had received special education training (19%) and gifted education training (14.3%).

Instrumentation

This quantitative study modified and used the questionnaire by Chan (2001) because the questionnaire design is based on the Hong Kong context. The questionnaire has three parts. Part one includes 35 examples of differentiation strategies covering

curriculum changes, teaching methods, teaching materials, learning environment, and assessment or grading procedures. A rating scale of 0 (never) to 5 (always) was used for each item asking the frequency of the use of differentiation strategies of the respondents. Part two includes four open-ended questions asking teachers to list the obstacles, concerns, and support received during the implementation of differentiation strategies. Part three inquires about the demographics of the respondents. The questionnaires were administered to Schools A and B in April and August 2011, respectively.

DATA ANALYSIS

Data collected from the questionnaires were analyzed through SPSS. Mean ratings and standard deviations were calculated from the raw data in the study. The self-reported strategies were then ranked in descending order of frequency of usage under five broad categories (Table 1). ANOVA was used to examine the correlation between the frequency of the use of differentiation strategies of teachers and their demographics. Data from the open-ended questions were analyzed through content analysis. Factors identified as obstacles to differentiation were then grouped under the same categories.

RESULTS AND DISCUSSION

Frequency of Using Differentiation Strategies

As for the categorization of differentiation strategies, within the total sample of teachers from both schools, the most commonly used strategies fall under “changes to class organization or grouping” and “adapting the teaching approach” (see Table 1).

Overall, the differentiation strategies of “seating a student with poor attention near the teacher,” “deliberately assigning a student with difficulties to a peer for assistance,” “displaying students’ work in class to motivate lower-ability students,” “making use of students’ own interests as part of the lesson,” and “using computer-aided teaching and learning” had higher than 4.0 as the mean degree of frequency. In other words, these strategies are frequently used in the classroom.

More specifically, teachers from both schools reported that they frequently used the strategies of “deliberately assigning a student with difficulties to a peer for assistance,” and “carefully planning the sequence of lesson content from easy to difficult” (an average rating higher than 4.0 for each strategy).

However, the frequency ratings of the most commonly used strategies in the two schools have some differences. For School A, the differentiation strategies of “using cooperative group work,” “carefully planning the sequence of lesson content from easy to difficult,” “displaying students’ work in class to motivate lower-ability students,” “making use of students’ own interests as part of the lesson,” and “tailoring curriculum content to match students’ abilities” are likely to be more common.

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Table 1. Self-reported use of differentiation strategies of teachers in both schools (N = 47)

<i>Categories</i>	<i>School A</i>		<i>School B</i>		<i>Overall</i>	
	<i>(N=26)</i>		<i>(N=21)</i>		<i>(N=47)</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
I. Changes to class organization or grouping	3.97	0.44	4.00	0.39	3.99	0.42
1.1 Seating a student with poor attention near the teacher	4.23	0.86	4.24	0.83	4.23	0.84
1.2 Encouraging peer tutoring in class	3.38	0.75	3.71	0.78	3.53	0.78
1.3 Deliberately assigning a student with difficulties to a peer for assistance	4.04	0.92	4.38	0.59	4.19	0.80
1.4 Using cooperative group work	4.08	0.74	3.81	0.81	3.96	0.78
1.5 Displaying students' work in class to motivate lower-ability students	4.19	0.85	3.86	0.79	4.04	0.83
1.6 Using ability grouping within the class	3.92	0.93	3.95	0.97	3.94	0.94
II. Adapting curriculum content	3.80	0.65	3.88	0.56	3.83	0.60
2.1 Making use of students' own interests as part of lesson	4.15	0.78	3.86	0.79	4.02	0.79
2.2 Using graded worksheets and assignments	3.73	0.92	4.14	0.85	3.91	0.90
2.3 Carefully planning sequence of lesson content from easy to difficult	4.46	0.65	3.95	0.80	4.23	0.76
2.4 Tailoring curriculum content to match students' abilities	4.00	0.75	3.81	0.81	3.91	0.78
2.5 Reducing the amount to be studied by some students	3.23	1.03	3.00	1.10	3.13	1.06
2.6 Providing extension work for abler students	3.54	1.17	3.67	0.80	3.60	1.01
2.7 Setting differentiated tasks for different groups within the class	3.46	0.95	3.57	0.75	3.51	0.86
III. Adapting teaching approach	3.94	0.52	3.96	0.50	3.95	0.51
3.1 Dividing lesson to smaller steps and teaching at a slower pace for some students	3.62	0.80	3.76	0.70	3.68	0.75
3.2 Re-teaching or revising information more often for certain students	3.88	0.77	4.05	0.80	3.96	0.78
3.3 Providing more practice examples for some students (for homework or during lesson)	3.88	0.71	4.00	0.71	3.94	0.70
3.4 Providing additional guidance to ensure task completion	3.85	0.73	3.71	0.90	3.79	0.81
3.5 Using computer-aided teaching and learning	4.46	0.65	4.10	0.94	4.30	0.81

(Continued)

Table 1. Self-reported use of differentiation strategies of teachers in both schools (N = 47) (Continued)

Categories	School A (N=26)		School B (N=21)		Overall (N=47)	
	Mean	SD	Mean	SD	Mean	SD
IV. Modifying materials and resources						
4.1 Simplifying language of printed instructional materials	3.31	0.97	3.33	0.97	3.32	0.96
4.2 Pre-teaching difficult vocabulary in textbook for class or homework	3.88	0.86	3.81	1.03	3.85	0.93
4.3 Enlarging print size in handout notes	3.23	0.99	3.19	0.87	3.21	0.93
4.4 Designing different teaching materials for less able students	3.35	0.69	3.24	0.94	3.30	0.81
4.5 Providing two or more levels in graded worksheets or assignments	3.19	0.75	4.10	0.89	3.60	0.92
4.6 Using more challenging textbooks for abler students	2.77	1.03	2.95	1.28	2.85	1.14
4.7 Using textbooks of different readability levels in the classroom	2.27	1.04	2.33	1.15	2.30	1.08
V. Modifying assessment and grading methods	2.79	0.63	2.86	0.68	2.82	0.65
5.1 Tolerating a lower level of neatness for some students' bookwork	3.23	1.07	3.29	1.01	3.26	1.03
5.2 Allowing some students longer time to complete assignments	3.46	0.90	3.67	1.06	3.55	0.97
5.3 Providing direct guidance to some students during assessment tasks	3.15	1.16	3.05	1.02	3.11	1.09
5.4 Grading students' work according to effort and quality of product	3.85	0.83	3.76	0.89	3.81	0.85
5.5 Requiring some students to complete less work or do easier work for assessment	2.85	1.22	3.05	1.43	2.94	1.31
5.6 Allowing some students to answer examinations orally rather than in writing	1.62	0.98	1.52	0.93	1.57	0.95
5.7 Allowing some students not to take examinations	1.38	0.85	1.38	0.74	1.38	0.80

However, “using graded worksheets and assignments,” “providing two or more levels in graded worksheets or assignments,” “re-teaching or revising information more often for certain students,” and “providing more practice examples for some students (for homework or during lesson)” are more common in School B. These differences may be related to the mandatory extra graded worksheets routinely provided to students by School B teachers to cater to individual differences.

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Table 2. ANOVA between frequency of use of differentiated strategies and teacher training in gifted education

		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Category I:	Between Groups	0.005	1	0.005	0.027	0.871
Changes to class organization or grouping	Within Groups	7.551	43	0.176		
	Total	7.556	44			
Category II:	Between Groups	1.588	1	1.588	4.521	0.039
Adapting curriculum content	Within Groups	15.102	43	0.351		
	Total	16.689	44			
Category III:	Between Groups	0.414	1	0.414	1.594	0.214
Adapting teaching approach	Within Groups	11.172	43	0.260		
	Total	11.586	44			
Category IV:	Between Groups	0.000	1	0.000	0.000	0.986
Modifying materials and resources	Within Groups	12.265	43	0.285		
	Total	12.265	44			
Category V:	Between Groups	0.105	1	0.105	0.240	0.627
Modifying assessment and grading methods	Within Groups	18.799	43	0.437		
	Total	18.904	44			

Interestingly, the least frequently used strategies in both schools are those related to modifying assessment and grading methods, which allows some students to be assessed quite differently from others, a result consistent with Chan et al. (2002). The resistance to varying assessment methods may reflect the traditionally heavy emphasis on public examinations in the Hong Kong education system, as well as the concern of teachers about the equity of assessment systems among students. Thus, the readiness and willingness of teachers to exchange the fairly traditional, teacher-centered, and textbook-driven instructional approach for a more diversified and student-centered differentiation practice is a crucial matter.

ANOVA was employed to examine the correlation between the use of differentiated strategies and the demographics of the respondents (Table 2). Significant differences were found between the adaptation of curriculum content and teacher training in gifted education. These differences may be related to the nature of gifted education, as considerable attention is paid to the learning profiles of students (i.e., interests, abilities, and learning styles) and to instructional design (i.e., according to content, process, or product) in practicing differentiation for gifted children (Tomlinson et al., 2006).

Perceived Obstacles, Concerns, and Support in Practicing Differentiation

The teachers in this study were asked to list the factors they perceived as obstacles and concerns when implementing differentiation. Tables 3 and 4 indicate the pooled results from all the respondents of Schools A and B, organized into naturally occurring categories. The response ratings of School B were higher than those of School A. The most common obstacles to and concerns about differentiation were the lack of school support and the wide diversity of students. The findings of this study are consistent with previous findings (e.g., Schumm & Vaughn, 1995; Chan et al., 2002).

The teachers in the current study emphasized that more administrative support should be given to put the idea into practice. Some teachers wrote:

There are large learning differences among the students. It is difficult to develop the learning potential of higher-ability ones. There is not enough time as we need to prepare materials for weaker students. (T2, School A)

There is limited time to co-plan the lessons and prepare the teaching materials. There should be agreement among different school members if there's any

Table 3. Perceived obstacles and concerns of School A teachers regarding differentiation (N=26)

<i>Major obstacles and concerns</i>	<i>Total responses</i>	<i>%</i>
Lack of support within school	5	19.2
Implementation problems caused by a wide range of student abilities	4	15.3
Limited time for planning and preparation	3	11.5
Implementation made difficult by large class size	3	11.5
Incentives reduced by teachers' already heavy workload	3	11.5
Rigid curriculum and syllabus	2	7.7
Students' negative reactions to differentiation	2	7.7
Teachers' lack of skills in differentiation	1	3.8
Teachers' lack of motivation for differentiation	1	3.8

Table 4. Perceived obstacles and concerns of School B teachers regarding differentiation (N=21)

<i>Major obstacles and concerns</i>	<i>Total responses</i>	<i>%</i>
Lack of support within school	8	38.1
Implementation problems caused by wide range of student abilities	5	23.8
Teachers' lack of skills in differentiation	5	23.8
Limited time for planning and preparation	3	14.3
Classroom management problems during group work	3	14.3
Students' negative reactions to differentiation	2	9.5
Teachers' lack of motivation for differentiation	2	9.5
Rigid curriculum and assessment policies	1	4.8

change in assessment methods. Temporarily, no one initiates such ideas. (T25, School A)

Materials should be modified and designed with different levels. There should be some reference teaching plans for us in implementing differentiation. (T21, School B)

We need administrative support to provide time and space for teachers to do differentiation. Teachers also need to have professional development and sharing about good practices in differentiation. (T9, School B)

Many teachers tend to resist differentiation because they perceive it to be highly time-consuming. Planning thoughtful differentiated units and lessons does take longer than presenting a one-size-fits-all curriculum (Herberg-Davis, 2009). The school should give more support to teachers as they adopt differentiation strategies through thoughtful planning. Some recommendations are discussed below.

Interestingly, School B teachers did not cite "limited time for planning and preparation" and "incentives reduced by teachers' already heavy workload" as obstacles to implementing differentiation strategies, but did consider "classroom management problems during group work" as such. This result may be due to the differences in existing areas of concern in the school context.

DISCUSSION AND IMPLICATIONS

Meeting the diverse needs of students in the general education classroom is a crucial concern for education professionals. The vast literature shows that although many teachers recognize the need to cater to learner diversity, they still find difficulty in implementing differentiation by adopting curriculum and content, modifying instruction, or varying assessment methods. The teacher-respondents in this preliminary study reported a fairly frequent use of only a few basic differentiation strategies. These teachers also observed that they need more support to implement differentiation strategies.

For effective differentiation, different stakeholders should work collaboratively to address the issue. First, effective differentiation relies on the attitudes and beliefs of teachers about differentiation. Teachers should identify and understand the needs of their students. They should be aware that students differ in the way they learn and that the best teachers are actively responsive to these differences. They should know what works best for their students. As facilitators of learning, teachers should be knowledgeable and reflective regarding the flexible use of different differentiation strategies. They should have the skill and will to conduct multiple tasks simultaneously at least some of the time, and should be able to use time, space, groupings, tasks, and so on flexibly rather than according to the one-size-fits-all perspective (Tomlinson et al., 2006). Professional development is crucial to teacher success in effectively differentiating instruction for students. Differentiation in an academic year is not achieved through a single day of professional development. Differentiation is a

long-term goal that requires constant refinement, new information, and continued assessment to chart its effectiveness (Tomlinson et al., 2006). Therefore, continuous professional growth and opportunity for inquiry are necessary elements to foster within the context and culture of a school.

According to the present study, differentiation in practice has some obstacles. The emphasis on “teaching to the test” standardizes expectations for the curriculum rather than allowing the differentiation of the curriculum. The emphasis on prescribed curriculum and pacing charts that define what is to be taught and when inhibits opportunities to vary the curriculum and pacing necessary for differentiation. The emphasis on the belief that equity in education is met by teaching whole-class or large-group lessons inhibits opportunities for small group and independent learning, which are crucial to the differentiation of curriculum and instruction.

Therefore, schools should provide adequate support to put differentiation into practice. School leaders should ensure an organizational change and a leadership that create a supportive school climate. A collaborative culture should be fostered to support differentiation in practice. A continuum of curriculum planning and development of differentiated strategies through ongoing discussions among different stakeholders should be implemented. The effectiveness of the curriculum, instruction, resources, and other services in supporting differentiation should be evaluated occasionally. Teachers should be encouraged and supported to participate in continuous professional development, and should be given time, resources, and space to implement the change. Effective communication should be promoted between schools and parents for them to share the vision for differentiation. Parents should be well informed about school policies and should collaborate with the school to put differentiation into practice.

LIMITATIONS

Several limitations must be acknowledged in this study. First, the questionnaires required self-reporting from the teachers. The self-reported use of differentiation strategies of the teachers may not accurately reflect their actual use. The data in [Tables 1, 3, and 4](#) should be regarded as the estimated actual usage of the various differentiation strategies. Second, the study was conducted only in two primary schools in Hong Kong. The sample sizes were not large, and thus, the findings may not be generalized to other countries or necessarily apply to all teachers in Hong Kong schools.

Despite these limitations, some findings of this study are consistent with similar investigations of teacher practices in other countries. Further research is suggested to explore the issue of differentiation practice in Hong Kong.

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