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**FOR ACTION RESEARCH: IMPROVING CLASSROOM PRACTICE FOR
PROFESSIONAL TEACHER DEVELOPMENT IN A
HONG KONG PRIMARY SCHOOL**

SHEUNG-KWAN LEUNG

DOCTOR OF EDUCATION

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Abstract

This dissertation is concerned with action research, exploring its effectiveness as an approach to advancing teachers' practice through continuous professional development (CPD). Since the 2000s, despite the fact that the Hong Kong Government has provided extra resources to support normal school teachers in addressing the diverse learning needs of students, they still experience stress in managing student diversity and recognize their classroom practice as inefficient (Chan et al. 2010; Pang 2012; Hong Kong Federation of Education Workers 2015, 2016). This study aims to investigate in greater depth the specific contextual problems that primary teachers face in educationally diverse classroom and to work with them to increase their teaching efficacy. Through engagement in six research cycles, two in-service teacher-participants gained support from the researcher to launch action research project for problem resolution. The findings show that collaborative action research leads to a paradigm shift in the teachers' practice from textbook-bound to differentiated teaching in which they learned to adapt curriculum contents and instructions for addressing the diverse needs of students. The study casts light on how action research empowers the teachers to change that benefits student learning. In addition, the study also provides insight in detail and considerable depth authentic to the Hong Kong teacher education context of how action research as intensive CPD can enhance teachers' capacity to offer high quality of educational provision.

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Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

Signed: _



Date: May 6, 2021.

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GLOSSARY AND ABBREVIATIONS

Abbreviation/Term	Definition/Explanation
EDB	Education Bureau (EDB) – it is one of the official departments of Hong Kong Government which is responsible for developing and implementing educational policies, overseeing regional school administration services and monitoring programmes in respect of kindergarten, primary, secondary, tertiary in public, private and international schools/institutions.
Normal schools	Normal schools – the learning environment of normal schools is for students without serious physical or mental health problems. The term is widely used in local and international schools, and commonly replaced with the words of “mainstream”, “ordinary” or “regular” by the EDB as well as public media in the community. These wordings are interchangeable as common practice in the field.
SEN	Special Educational Needs (SEN) – the term is used according to the documentation of the Hong Kong Government’s Report in 2008 - Panel on Education Subcommittee on Integrated Education. Students with SEN receive special support resources provided by the EDB for schooling. Details are noted in Chapter 1.
TCA	Theory of Communicative Actions (TCA) – it refers to Habermas’ theory in 1984 for illustrating how people in the same contextual culture use their common language to

	achieve functional purposes of dynamic actions and effects. Details are noted in Chapter 3.
TDP	Teacher Development Programme (TDP) – it refers to the in-service teacher-training programme provided by the EDB for supporting local schoolteachers’ professional development in the field.
WSA	Whole School Approach (WSA) – the term is used according to the documentation of the Hong Kong Government’s Report in 2008 - Panel on Education Subcommittee on Integrated Education. It is the approach of inclusion policy to support students with SEN for studying in normal schools. Details are noted in Chapter 1.

Chapter 1: Introduction

The heart of this study is to assist teachers to improve teaching practice in the diverse culture of Hong Kong school environment. As a lecturer of a local university, very often I have opportunities to hear front-line teachers' voices about their teaching problems in the complexity of today's classrooms. Over the years, they have been experiencing several education reforms including school-based development initiatives, inclusion policy, medium of instruction, new senior secondary academic structure and so on. They express that they find classroom practice inefficient and that they work under great pressure. In this regard, this study explores how action research is effective for enhancing teachers' capacity to address problems in everyday classroom practice so that students can learn better.

Since 2007, the Education Bureau (EDB) of Hong Kong has implemented a centralised professional teacher development programme (TDP) for equipping teachers to adopt an inclusion policy in local schools. This is an in-service teacher training programme which is outsourced to a local university. According to the EDB documentation, we (as lecturers of the university), offer this training programme to help teachers facilitate the policy of whole school approach (WSA) to include students with special educational needs (SEN) studying in normal schools (HKSAR, Report 2008 - Panel on Education Subcommittee on Integrated Education). Teachers who attend this TDP (by nomination of their school principals) learn specific knowledge and skills in curriculum adaptation and "differentiated teaching" (ibid), in which Tomlinson's differentiation model (2001, 2014) is used. Detailed background information will be laid out in the following sections.

During the past 13 years, a number of teachers have completed the TDP. However, application of differentiated teaching is not much found in field experience. As Girvan et al. (2016) comment, the one-off event of TDP is not effective for professional teacher development. Day argues that professional TDP "should result improvement"

(1997:40). Tomlinson also indicates that “A benchmark of teacher development is the point at which the teacher has become secure and comfortable with classroom management. *Fear of losing control of student behaviour* is a major obstacle for many teachers in establishing a flexible classroom” (2001:2). Yet, Hong Kong teachers find great challenges with the complexity of diverse needs of students (as normal and students with SEN learning together in the same classroom). Even though they have completed the TDP, they complain that student behaviour makes them feel stressful – Section 1.2 displays more details.

For this reason, this study aims to help Hong Kong teachers *make change* in action for practicing differentiated teaching at skill level so that they can provide “good teaching for *all* learners” (Hargreaves & Fullan 2012:6). In fact, the WSA to inclusion has been advanced since the early 2000s under recommendations first made by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1984. The following section explores its historical background.

1.1 Historical Background of WSA

The notion of WSA appeared in 1997 (ibid). The term is derived from a concept of integration of students with SEN placing into local normal schools in the 1970s. According to the “White Paper on Rehabilitation - Integrating the Disabled into the Community: A United Effort” issued in 1977 (ibid), local schools were required to provide special programmes and special classes for students with SEN under this mandatory integration policy. However, teachers serving in public normal schools had not been trained in special education at that time (Forlin 2010), and resources were also limited to support students with SEN. Yet, teachers were assigned to teach special programmes in schools and students with SEN were generally put into a separated classroom for learning. That is, they studied in a mode of separation rather than integration in normal schools.

Not until 1984, prompted by an international conference held by UNESCO, the concern about catering for students with SEN studying in normal school environment was adequately raised. Following the guidelines given by the UNESCO, the Hong Kong Government reinforced the degree of supporting students with SEN by issuing a further policy statement, the “White Paper on Rehabilitation – Equal Opportunities and Full Participation: A better Tomorrow for All” in 1995 (ibid). This official document put emphasis on improving provision for integrating students with SEN into normal schools. The working team of Rehabilitation Advisory Committee gave further advice for implementing a structural WSA policy on integration. Two years later, the government launched a 2-year pilot programme in 1997, namely, “Integration Education Programme” (IE programme) in which public normal schools would be given resource support to make their own school-based policy of WSA to initiate curriculum adaptation and differentiated teaching (HKSAR, Report 2008:3 - Panel on Education Subcommittee on Integrated Education).

In order to strengthen the quality of provision, as outlined in these key policy documents, each participating school received extra funding to recruit one resource teacher, who possessed a special education qualification, to organize remedial class and special programmes for students with SEN as diagnosed in five types of learning disabilities: intellectual disability (ID), physical disability (PD), visual impairment (VI), hearing impairment (HI) and speech and language impairment (SLI). With the gained piloting experience, the government announced that the IE programme would be implemented in all public normal schools from 1999 onwards (ibid).

Over the years, according to the government figures, 537 public normal schools (about 63% of the total number of local schools in Hong Kong) had adopted WSA in 2006. Because of the increasing demand of diverse needs of students, the IE programme has been further extended to include three more types of students with SEN as autism spectrum disorders (ASD), attention-deficit/hyperactivity disorder (ADHD) and specific learning difficulties (SLD) (ibid). Since then, the EDB has modified a new

supporting system from 2007, in which teachers attend a structural hourly-based TDP to facilitate a 3-tier resource model of WSA. More detailed explanations are displayed in Section 1.2.2.

Indeed, the WSA to IE is one of the integral parts of the government education reform geared towards school-based development provision. From 1999, the Education Department of Hong Kong (renamed as the Education Bureau, EDB in 2007) has reviewed the curriculum structure and proposed the innovative approach of a school-based initiative (SBI) for local primary and secondary schools (Education Commission 1999, 2000). Further in 2001, the government issued a reform of the 9-year school-based curriculum, namely “Learning to Learn” (Curriculum Development Council, CDC 2001) to reinforce the implementation of SBI. The reform promotes a student-centred approach which is best suited for students with diverse learning needs in the inclusive classroom. According to the EDB, the reform aims to bring student success and there should be “no loser” in schools (ibid).

However, the claim tends to be an empty slogan. Over the decades, local scholars such as Bryant et al. (2009) have commented that classroom practice remains unchanged. They describe that, throughout the years, the traditional teacher-centred approach has still been dominant in classroom in ways that teachers use textbooks and assign “heavy doses of homework” to prepare students for examination (Bryant et al. 2009:2). Their study suggests that the innovation proposed at the policy level appears to have induced little change in teaching practice. The government’s claim of “no loser” (CDC 2001) in schools is doubtful because to what extent students with different abilities (high, middle and low) are able to follow teachers’ instructions and to participate in learning activities is under-investigated. Few studies indicate students’ achievement of “learning to learn” (CDC 2001) in respect to their individual differences within the innovative school-based curriculum practice (Cheng 2009). In contrast, several findings reveal challenges related to students’ diverse learning needs that make teachers experiencing of significant pressure and inefficient teaching (Chan et al. 2010;

Pang 2012; Tang 2011; Hong Kong Federation of Education Workers, HKFEW, 2015, 2016; Hong Kong Professional Teachers' Union (HKPTU) 2018). In the following section, problems in the Hong Kong school context are identified.

1.2 Contextual Problems in the Hong Kong School Environment

1.2.1 Issue of Student Diversity

In order to implement the WSA policy, the government published a handbook titled "Catering for Student Differences - Indicators for Inclusion" (Education and Manpower Bureau, 2004, with an updated version in 2008). Schools should follow the guidelines in the handbook to develop an inclusive environment according to the three "Dimensions": "creating inclusive cultures", "producing inclusive policies" and "evolving inclusive practices" (EDB 2008:4). There is also an "Illustration" (EDB 2008:6) to convey that lessons should accommodate students' different learning needs and styles. However, in reality, teachers use a "one-size-fits-all" curriculum to teach (Yeung 2010; Wan 2016). Cowne et al. (2019) argue that this practice excludes rather than includes students to learn. Specifically, it offers only one pre-set of teaching material (without adaptation) that does not meet students' different learning profiles, interests and readiness in a "mixed-ability" classroom (Tomlinson 2001).

In addition, the class size in Hong Kong mainstream schools is around 35-40 students. As Cheng (2009) argues, such large class sizes make it difficult for teachers to cater for individual differences among students. In recent surveys, approximately 90% of local teachers (94% of 241 teachers in 2015 and 88% of 380 teachers in 2016) expressed concern that they worked under great pressure because of dealing with the diverse learning needs of students (HKFEW 2015, 2016). Pang (2012) reported 1210 teachers' views on work stress in relation to students' challenging behaviours in the inclusive classroom. His findings showed that Hong Kong teachers had a high level of "Aggregated stress" (Pang 2012:127) (mean=1.95 and standard deviation (SD)=0.82)

compared with teachers in other six countries in Europe, South Africa and the United States (range of mean=1.34-2.37 and range of SD=0.72-0.88).

Moreover, 35% of Hong Kong teachers referred to three types of children with SEN as “challenging students” (Pang 2012:135). They reported these students who had autism spectrum disorders (ASD), attention-deficit/hyperactivity disorder (ADHD) and/or other emotional and behavioural problems were difficult to manage in classrooms. These types of learners demonstrated impulsive behaviour and were inattentive in class and that their academic skills were also poor. In fact, there are not merely three types but eight major types in total of children with SEN located in normal schools as previously noted (HKSAR, Report 2008 - Panel on Education Subcommittee on Integrated Education)

This situation continues with rising figures indicating the intensification of the complexity of student diversity that makes teachers feeling ill-equipped to meet the needs of those students. As in 2014, the EDB provided information about students with SEN studying in public primary and secondary schools from 2009 to 2014 (Report 2014 - Panel on Education Subcommittee on Integrated Education, Appendix 1). In 2009, 13720 pupils with SEN attended regular primary schools and 8000 students studied in mainstream secondary schools. In 2014, the figures increased to 17390 children with SEN and 16,440 teenagers studying in ordinary schools. Their enrolment had been increased by 26.7% in primary schools and by 105.5% in secondary schools respectively over a span of five years.

In the inclusive classroom, teachers have to deal with mixed-ability students, as some learn easily while others struggle to learn (Tomlinson 2001). Forlin captures that,

In Hong Kong, as teaching has become more complex and the role of a teacher in a regular classroom has dramatically changed, many regular class teachers continue to feel unprepared for inclusion (Forlin 2010:180).

She has noticed that, in recent years, the majority of teachers have been teaching students with SEN and yet they are not trained special education teachers while in their classrooms, the complicated individual differences of 30-45 students are present (Cheng 2009). Even in a reduced class of 25-30 students (Harfitt 2013), the noise and disruptive behaviours of students can affect daily teaching schedule. Phillipson (2007) remarks that when confronting students' emotional and behavioural problems, teachers will burnout easily if they are "unprepared for inclusion" (Forlin 2010:180). In consideration of this matter, what measure(s) may help teachers change? Seeking effective ways to help teachers cope with student diversity, therefore, is the key theme of this study.

1.2.2 Insufficient Support for Classroom Practice

As previously mentioned, in order to implement the inclusion policy at the classroom level, the EDB has offered teacher development programmes (TDPs) since 2007. Through the nomination of their schools, local in-service teachers have an opportunity to attend the programmes to learn effective adaptation strategies for managing student diversity in every quarter of the year. The EDB requires that by the year of 2019-2020, at least 15-25% of teachers in each school should complete the essential training (EDB Circular No. 12/2015). Moreover, since 2017, the government has added the new post of SEN coordinator (SENCO) in each school to help organise the provision of a 3-Tier supportive model for students with SEN (EDB Circular No. 9/2017).

The 3-Tier model is a whole-school approach to inclusion (EDB 2008) through which schools receive grants from the EDB every year. In Tier 1 (the bottom level), schools can make use of the school-based Capacity Enhancement Grant (CEG) to recruit more teaching staff to initiate the basic curriculum adaptation of "differentiated teaching" as EDB recommended (Report 2008: 9 - Panel on Education Subcommittee on Integrated Education). In Tier 2 and Tier 3, an additional Learning Support Grant (LSG) is given, based on the number of children with SEN in each school. That is, in Tier 2, each school provides remedial programmes for groups of pupils with SEN (at least five children in

a group), which the resource teacher who has received special education training should organise. In Tier 3, the school should design an Individual Education Programme (IEP) that every single child with SEN has an intensive learning plan facilitated by a team of specialists, such as an education psychologist and a speech therapist. Since 2014, the EDB has updated the annual LSG per SEN student in Tier 2 to HKD 13000 (US \$1666) and in Tier 3 to HKD 26000 (US \$3333) of which the ceiling in total is 1.5 million annually (US \$0.19 million) per school.

What is critical is that, over the years, numerous grants have been directed towards the 3-Tier model – so that as from 1999 to 2007, there have been 859 million dollars (U.S. \$67 million) spent in total on the IE programme (HKSAR, Report 2014:11). In addition, a number of teachers have learned the “differentiated teaching” in the TDP that the EDB has specified (HKSAR, Report 2008:9 - Panel on Education Subcommittee on Integrated Education). They have explored the principles of differentiation model that learning “content” [curriculum], “process” [instructional practice/activities] and “product” [tasks/assignments] should be modified according to students’ different “interests”, “profiles” and “readiness” (Tomlinson 2001, 2014).

However, few of the trained teachers apply the differentiated strategy to their daily classroom teaching (Forlin et al. 2010; Wan 2016). As Forlin observes, “Many regular class teachers continue to feel unprepared for inclusion” (2010:180). Moreover, Bryant et al. (2009) comment that classroom practice are still teacher-centred rather than student-centred, as promoted by the EDB for meeting the diverse needs of students in the new reform (CDC 2001). Differentiated curriculum and the adaptation of such instructional practice are still largely absent in local schools. As Chao et al. indicate, schoolteachers merely use:

the minimal strategies...thereby providing only both limited time for them [students with SEN] to complete tasks and minimal one-on-one assistance during class (2017:361).

Problems continue to exist because students with SEN only receive the “minimal” strategic arrangements (Chao et al. 2017:361) rather than the curriculum adaptation which would help them approaching the topic contents of learning. Providing “one-on-one assistance” (ibid) from teachers or helpers (either peer students or teaching assistants) to complete the classwork does not mean that, for example, students can comprehend passage of text independently or answer the questions on their own during language lessons. They may just do what they are told to do in order to complete the tasks. Rather, as students with special educational needs, they need more examples, explanations and step-by-step guiding questions to understand their lesson contents. Giving them more time, such as one or two hours, to complete the learning activities is not necessarily an effective way to instill “learning to learn” (CDC 2001).

It is ironic that we have money and qualified teachers in Hong Kong, but we do not have quality of teaching in adaptive practice of curriculum and instruction for those children with SEN– even though teachers have attended the TDPs (concerning student diversity) (Forlin 2010; Forlin et al. 2010; Wan 2016). Hence, it is crucial to help teachers seeking effective strategies for teaching students with the diverse needs in the complexity of inclusive classroom.

1.2.3 Teachers’ Low Morale

As mentioned in Section 1.1.1, Hong Kong teachers work in stressful school environments. According to Chan et al.’s (2010) findings obtained from 1710 local teachers’ questionnaires, 97.3% of them felt stressed due to students’ learning behaviour, heavy workload and education policies. Further, Pang (2012) quoted a local survey (conducted by DAB & HKFEW in 2006) involving 800 teachers’ responses that led to the discovery that 90% of them expressed great concern about significant levels of work pressure. Among them, 25% of teachers said that they worked about 71 hours per week. Cheng (2009) also found that Hong Kong teachers worked more hours per week than others in major cities of Asia. Specifically, they worked 67 hours in Hong

Kong, compared to 63 hours in Beijing, 63 hours in Macau, 55 hours in Shanghai and 50 hours in Taiwan (Cheng 2009:79).

He remarked that long working hours was the key reason that teachers resigned from their job (ibid). He also referred to Ng et al. (2003), who found that in the United Kingdom, teachers left their teaching posts because of the heavy workload of over 54 hours every week (Cheng 2009:79). Meanwhile, Tang presented qualitative research data from 23 Hong Kong teachers and specifically noted that because of the recent education reforms, lower birth rate and strong competition among schools, teachers worked very hard for survival. The heavy workload made them “feel alienated... [which was] difficult for the construction a sustainable professional identity” (Tang 2011:373). She included quotes from teachers to provide a clear depiction of their work reality:

Excerpt – long working hours:

Teachers arrive at school before 8:00am. For two days in the week...teachers need to come back before 7:40a.m. ...School hours finish at 3:00p.m. ...After school hours, teachers run extra-curricular activities...Students leave school at about 5:00p.m. Then teachers start working in the staff room...There are many meetings...Teachers can only prepare teaching at home in the evening...Many education reforms come together very quickly. We are really very busy (Ian, a novice teacher)

Excerpts – teachers’ low morale:

Every day, I work ‘like a cow’ without knowing where to go and getting ‘returns.’ It affects a lot, especially at the expense of students (Fred, a senior teacher)

There is no time to revise our teaching practices. How can we really produce quality work? How can we be happy and have job satisfaction? (Eva, a novice teacher)

Excerpt – no lesson preparation:

Every day I spend only 35 minutes in [the] classroom. Other than that, I work on a lot of other things. There is no time for me to mark assignments and prepare [for] teaching...I work very intensively. Yet I put less and less time [into] teaching (Joe, a senior teacher) (in Tang 2011:373).

As these views indicate, teachers are not satisfied with their job as they work under great pressure. In 2018, HKPTU collected 1836 teachers' views about their work stress. They found that 30% of teachers reported to have “moderately severe to severe symptoms of depression” while over 10% showed “symptoms of severe depression” (HKPTU 2018). Cheng (2009) argues that work pressure is having a negative effect on the mental health and well-being of local teachers. To support this claim, he cited findings from HKFEW (2004), HKPTU (2003) and Hong Kong Cosmo Physiotherapy (2004)—specifically, 48.6% of teachers had lost their temper, 46.6% of them were physically unwell and 50.9% of them suffered from insomnia (ibid). In fact, 37-56% of teachers considered resigning from their jobs (HKPTU 2003; HKFEW 2004). Cheng sharply pinpointed that “teachers' morale was very low” (2009:79).

Although it is unknown how many local teachers have resigned from their teaching posts because of the unfavourable school environment described, findings from developed countries have confirmed the problematic situation in the field. As Robertson described, “In many parts of the world, teaching found itself to be undesirable profession” (2012:591). In addition to reporting the dropout rate of 25% of novice teachers in United States and Australia, she contends that the global trend of education policies intensifies problems in the inclusive classroom, fails teacher

professionalism and leads to teacher burnout (ibid). As she explains, “Teachers leave as they suffer from lack of autonomy and flexibility in addressing pedagogical issues creativity” (Robertson 2012: 592). Hargreaves & Fullan (2012) also note that in the United States, “40% of K-12 teachers are currently ‘disheartened’ with their job” (2012:6).

Hong Kong teachers are also affected by the international trends of education reforms (Cheng 2009; Forlin 2010). Bryant et al. criticize that the education reforms symbolize the advancement of education system in Hong Kong but there is “lack of commitment to addressing the challenges of supporting changes at the school front line” (2009:2). Moreover, Cheng assessed that, “The challenges, difficulties, and work pressure were inevitably increased very much beyond teachers’ capacity” (2009:77). In particular, about 90% of teachers expressed their distress related to managing student diversity (HKFEW 2015, 2016). Without sufficient support, how can teachers advance the quality of education?

1.3 Aims of the Study

As discussed in Section 1.2.2, the Hong Kong Government has provided resource grants and TDP to assist teachers to cope with the challenges of student diversity. However, such measures are not practical enough to solve the contextual problems as argued. Here, relevant literature suggests that engaging teachers in action research may offer a possible solution (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Stern et al. 2014; Rauch et al. 2014). Feldman et al. (2018) note that action research has been popular for 50 years in the field. As its name suggests, it involves action-based inquiry with teachers participating in systematic cycles of reflection, re-planning of action, observation and evaluation gain effect on improving teaching practice (ibid). Townsend elicits that,

...action research has been adopted across a range of professions as a means of enhancing professional development through reflection and research informed *change* (Campbell et al. 2004; Day 1999; Koshy 2005). This established a close

relationship between action research and Schön's (1991) notion of *reflective practice* (Leith & Day 2000) (Townsend 2014: 8-9).

His emphasis on action research working through reflection and practice for change is significant. This could just be what teachers in Hong Kong need for their professional development, given the concern highlighted above in Section 1.2. Hence, the *title* of this dissertation indicates the underpinning assumption behind this study with Townsend and others, is to explore how action research, in which reflective actions (in practice) are acted out deliberately by teacher-participants, might be used to improve, i.e., change in ways that are positive, their responses to problems created by IE in today's classroom.

At this point, clarification has to be made that, firstly, this study is for in-service Hong Kong teachers, not for pre-service student-teachers who have not yet received training of the centralised professional TDP as mentioned in Section 1.2. That means the teacher-participants of this study are experienced serving teachers who have completed the said professional TDP but still find challenges with diverse needs of students in the complex environment of classroom.

Secondly, according to the literature cited before, action research is for *change* in professional practice (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Stern et al. 2014; Rauch et al. 2014). This unique form of action-based research "*differs from conventional research* in that ultimate object is the development of practice and not the production of knowledge" (Townsend 2014:8). Therefore, this study is not for outsiders to understand the problem (from the data collected) so as to draw conclusion for generating knowledge. Indeed, teacher-participants of this study are reflective practitioners who make use of the specific approach of differentiated teaching (as they have learnt in the training of the centralised TDP) to apply to their inclusive classroom for the benefit of student learning. In saying this, other means or forms to promote

teacher development, like coaching, mentoring, teachers' networks, online development and so on, are not included in this study.

For this reason, this study aims to: (a) improve classroom problems in regard to the contextual issues as noted in Section 1.2; (b) achieve the government's intended outcomes that help enhance individual teachers' professional development in respect of inclusion policy of WSA. Hargreaves and Fullan (2012) remark that professional teachers learn continuously to give feedback to their teaching (action) and to think reflectively always how to do it better (in teacher development). Based on this purpose, the following two research questions are formulated:

- (1) What change in action will the teachers make in relation to the application of differentiated teaching to address diverse learning needs of students?
- (2) What is/are the effect(s) of such the change in teacher professional development?

In describing the problems of the Hong Kong school environment (Section 1.2), it is believed that teachers need support and growth in teacher development. Many examples of action research have been reported in Western countries (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Stern et al. 2014; Rauch et al. 2014), but such research has rarely been applied to Chinese school culture regarding problems of student diversity. Thus, the significance of this study is to contribute substantial evidence of action research that improves professional practice of teachers in the complexity of Hong Kong school context that enhances the quality of student learning.

1.4 Structure of the Dissertation

This dissertation contains six chapters where the argument develops from Chapter 1. In this first chapter, the scene has been set as it describes the problematic background that causes teachers to face challenges related to the diverse learning needs of students. It discusses the unfavourable circumstances and gives reasons for conducting action

research for change. Chapter 2 presents a review of literature on the notions of action research and argues why action research is the answer for Hong Kong teachers. It not only provides examples but also establishes the basis for the theme of the study.

In alignment with the aim of the study, Chapter 3 explains the research methodology, which includes the rationale for the implementation of action research in response to the contextual problems, as articulated in Chapter 1. In addition to detailing the design of the action research and data collection, Chapter 3 discusses the positioning, ethical issues and action research validity. Chapter 4 reports the research findings of the teachers' process of change for improving the problems during the six research cycles. Chapter 5 focuses on the teacher-participants' change in action and answers the first research question (Section 5.1). Moreover, it includes a thematic analysis of how action research induces an effect on teacher development and thus provides an answer to the second research question (Section 5.2). Chapter 6 concludes this empirical study and highlights the effects of collaborative action research, such as its contribution to problem solving as well as teacher development. The limitations and recommendations are noted at the end of the chapter.

Summary of the Chapter

This chapter introduces the background of the contextual problems of student diversity, insufficient support for classroom practice and teachers' low morale, in which it gives the reasons for implementing action research to address the issues (Section 1.1 and Section 1.2). It also details the aims of the study and the two research questions (Section 1.3). Section 1.4 outlines the structure of the dissertation. As a whole, it serves as the basis of discussion for the following chapters.

Chapter 2: Review of the Literature

As stated in Chapter 1, the aim of this study is to support teachers in their ability to meet the needs of pupils with SEN in the classroom, given the preconditions of a WSA to inclusion. Having already reviewed the policy in regard to WSA adopted in Hong Kong school context, the purpose of this chapter is to review relevant literature on action research, its definitions, its characteristics and its effects on teacher development. The main concern of this study will be action research, and its potential to address the specific challenges described in Chapter 1. In other words, this chapter simultaneously constructs a basis for the conceptual framework of the research methodology outlined in Chapter 3 and the thematic analysis undertaken in Chapter 5.

2.1 Definitions of Action Research

Action research can be literally defined as research on one's own action. It is a self-regulating system for research practitioners to take actions for change. As Reason et al. explain, "Action research is an umbrella term for a variety of practical and intellectual efforts for change" (2008:696). It helps professionals to resolve problems. Feldman et al. articulate that over the past 50 years, action research has been popular in the field of education, health care services, social work and other disciplines. They promote that action research is an innovative research method and effective for "coping with the challenges and problem of practice" (Feldman et al. 2018:6).

According to Lorino, Kurt Lewin was "the father of action research" (2018:295). In the 1940s, as a psychologist, Lewin worked with a wide range of the population such as immigrants, factory workers and professional researchers in the form of action-oriented research for investigation and problem resolution. He formulated a loop of action-model which included three basic elements of: "planning", "action" and "results of action" (Lewin 1946:35-38). He described the model operated with a feedback system as: "...a spiral of steps, each of which is composed of a *circle* of planning, action and fact-finding about the result of action" (ibid). He stressed that through "fact-finding" (ibid), research practitioners learned from evaluating past actions that provided the

necessary insight to *modifying* the new actions of an “overall plan” for change (ibid). He believed that going through this process of “changing” (by actions) was the effective way for problem solving (Lewin 1946, 1958). His loop model has successfully established the concept of an action research system over the decades. Lorino (2018) mentioned that Lewin’s followers (his students and fellow researchers) shaped this concept of process of *change* and elicited that, action research provided a model for utilizing scientific methodology in improving processes of practical problem solving. It also provided a model for inducing *change* by collaborative and scientific means (Bradford et al. 1964:13).

In consideration of the above, action research is the scientific action for inquiry that comprises observation, implementation and evaluation for change. This idea of a process of change corresponds to the well-known American psychologist and educator, John Dewey. He (1938) advocated the “*theory of inquiry*” which was a process of inquiry for the “transformation of an indeterminate situation” (1938:108). According to Dewey, people within the same contextual situation take the “intelligent actions” (1947:37) of observation, adaptation and reflection to make changes for improvement. He offered this explanation, “reflection involves not simply a sequence of ideas, but a consequence – a consecutive ordering in such a way that each idea determines the next as its proper outcome, while each outcome in turn leans back on, or refers to, its predecessors” (Dewey 1933:4).

His theory of inquiry (ibid) influenced another American scholar: Schön. In 1983, Schön published his remarkable book, *The Reflective Practitioners*, to promote the idea of reflective inquiry for improving professional practice. He considers that reflection induces change in action, which helps improve professional practice. Lorino (2018) noted that Lewin’s action process system inspired Schön. His notions of “reflection-on-action” as well as “reflection-in-action” (Schön 1983) provide further explanations for action research. He specified that, “In this reflective conversation, the practitioner’s effort to solve the unformed problem yields new discoveries which call for new

reflection-in-action. The process spirals through stages of appreciation, action and reappreciation. The unique and uncertain situation comes to be understood through the attempt to change it, and changed through the attempt to understand it” (Schön 1983:132).

He informs us that reflection can bring actionable changes in practice when the practitioners come to understand the problematic situation through “reflection-in-action” (ibid). They then take action to solve a problem. Notably, in Hong Kong schools, teachers seldom have time for reflection. As described in Chapter 1, they primarily focus on finishing textbook materials and assigning a lot of homework to students (Bryant et al. 2009). They lack opportunities to reflect on their actions, to examine classroom problems and to adjust actions for improvement. That is why they need action research and Carr et al. explained that,

Action research is a form of self-reflective enquiry undertaken by participants in social (including educational) situations in order to improve the rationality and justice of (a) their own social or educational practices, (b) their understanding of these practices and (c) the situations in which these practices are carried out (Carr et al. 1986:162).

Somekh describes this as “self-reflective enquiry” (2006:14) which he identifies as the “research instrument” (ibid) which can self-account for “meaning making” through research-practitioners’ own actions. Elliot provides a further perspective on this remark, defining action research as “the study of a social situation with a view to improving the quality of action within it” (1991:69). The value of action research on this model is its capacity “to feed practical judgment” in ways that help “people to act more intelligently and skillfully” (ibid). Thus, the relationship between theory and practice shifts. As Elliot concludes, “‘theories’ are not validated independently and then applied in practice. They are validated through practice” (ibid).

In line with the problematic situation of Hong Kong, if the government intends to improve the “quality of action” (ibid) of local teachers, action research is recommended. As the above scholars suggest, it is the effective way to empower teachers to make change for problem resolution. For a further exploration of the concept of action research, its characteristics are discussed in Section 2.2.

2.2 Characteristics of Action Research

Action research is a unique research paradigm with distinctive characteristics, detailed in the sub-sections below.

2.2.1 Reflection-Based Inquiry

Reflection is the basis for action research inquiry. Practitioners who engage in action research take a process of reflection in which they give feedback to their actions. While they practice this reflective action for evaluation, they investigate their problems within the context of real situation. Schön elaborated that, “When someone reflects-in-action, he becomes a researcher in the practice context...he frames a problematic situation. He does not separate thinking from doing, ratiocinating his way to a decision which he must later convert to action. Because his experimenting is a kind of action, implementation is built into his inquiry” (1983:68).

Influenced by Dewey, Schön believes that inquiry takes place because practitioners decide to conduct experiments to solve problems in which they employ critical thinking that involves “searching, hunting, enquiring” (Dewey1933:12). These reflective actions are not limited to account for the taken actions as “reflection-on-action” (Schön 1983). Rather, Schön conveys that reflection begins within the process of action, which is “*reflection-in-action*” (ibid). According to him, practitioners think *intuitively* to connect some ideas with the “theories-in-use” in which they make new discoveries and decisions for change (Farrell 2013:36). This “reflection-in-action” not only deepens their understanding of the situational problem but also leads to “a dialogue of thinking

and doing” within the process of practicing (Schön 1983:31). Wellington categorises reflective dialogue and practice as having three modes: a) “reflection as an instrument to direct or control practice” (technical mode); b) “reflection to inform practice” (deliberative mode) and c) “reflection to transform practice” (dialectical mode) (1996:308). Without reflection, action research cannot proceed because reflective “thinking and doing” (Schön 1983) leads to the transformation of practice. Farrell emphasises that action research helps enhance the quality of teaching and learning. As he stated, reflection enables teachers “to be on guard against blindly following routine and by acting more deliberately about what they [teachers] will teach, why they teach it, when they will teach it, and what the impact of their teaching was” (Farrell 2013:133).

Therefore, supporting Hong Kong teachers’ engagement in continuous reflection-based inquiry can help them avoid *blindly following* the set textbook materials to prepare students for exams (Bryant et al. 2009; Yeung 2010). It will enable them to change their classroom teaching methods to better cater for students’ diverse needs. Reflection is an important component of change and a key aspect of the process system of action research (Lewin 1958).

2.2.2 Spiral Form of the System

The second characteristic of action research as we will shortly see is the on-going cycles of actions in spiral form. As noted in Section 2.1, Lewin’s system of change consists of “a spiral of steps, each of which is composed of a circle of planning, action and fact-finding about the result of action” (1958:201). Kemmis refers to a series of actions: “planning, acting, observing, reflecting, replanning, further action, further observation, and further reflection” (1985:156). Figure 1 illustrates the cyclical actions as below:

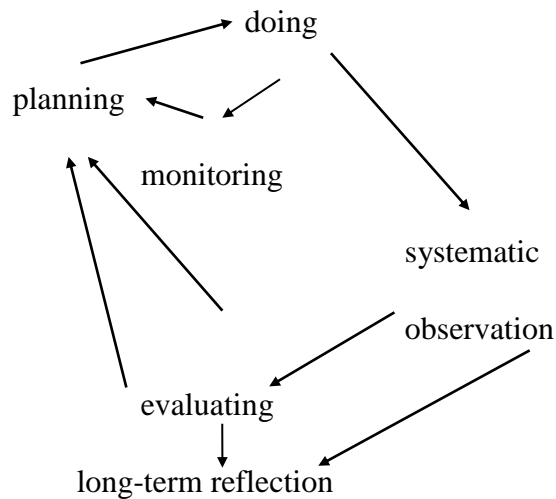


Figure 1: The action research spiral (from Griffiths 1990:43)

As shown in the above diagram, where a longitudinal spiral of action research is undertaken over an extended period of time this runs through “a cyclical process” for problem resolution (Hagevik et al. 2012:675). Armstrong argues that systematic action research continues “in a never ending process” (1991:58) until achieving the goal of the research. The continuous running of the spirals is depicted in Figure 2. In this case, as a small-scale study conducted by an individual researcher, this extended form of action research is not particularly suitable.

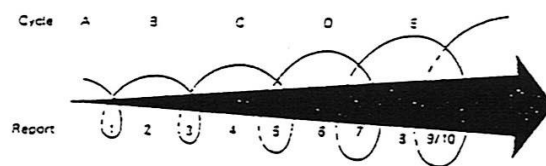


Figure 2: An image of the on-going cycles of action research

(from Whitehead and Lomax 1987:181)

Apart from the above horizontal running of the spirals, Armstrong presents another form of downward moving of the spirals as follows:

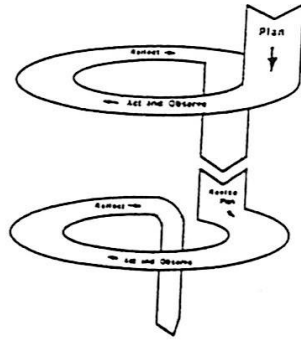


Figure 3: The downward moving of the spirals (from Armstrong 1991:58)

Lewis et al. captured this systematic concept of moving spirals and reported their 6-year longitudinal action research in 2009. What they did was about a school-based project of lesson study in an American suburban school: Highlands Elementary School (with about 400 K-5 pupils). Altrichter and Posch identify that lesson study is “a form of “institutionalised action research” (2014:20), which helps build up research culture for professional teacher development. Their research team applied such the downward spirals of action research to improve learning and teaching in the subjects of Mathematics, Science and Language of Arts.

From 2000 to 2006, teachers of the school formed groups (of 3-6 persons) to participate in an annual research study. In addition to class observation, group reflection and the co-planning of actions, the school principal updated the action research data every month to re-plan actions “for the year-long lesson study work” (2009:2). Their reports showed evidence of teachers’ improved and deeper understanding of their teaching practice. However, information about the *research goal* of each group and the adjustment of the *re-planned actions* each month was absent in the report. In other words, the evidence shown for *change in action* within each cycle of the spiral system did not clearly explain how the principal and the teachers made prompt actions to address problems in each month throughout the year of the research period.

Although the downward spirals (ibid) aid in illustrating the idea of an in-depth investigation of action research, an upward direction portrays its functions more preciously. This is because besides understanding the problem more deeply, action research also helps inspire insights to initiate change for improving practice (Elliot 1991). As Schön explains, “the process of spirals” runs through “stages of appreciation, action and reappreciation” (1983:132). Moreover, Lesjak notes that careful and steady reflective actions can aspire “the new mode” of a changing pattern (2014:80). With the stable and observable improvement, the effects of actions lead to enlightenment, hope and vision within the research period of cycles. Figure 4 (below) depicts the spirals for higher levels of achievement.

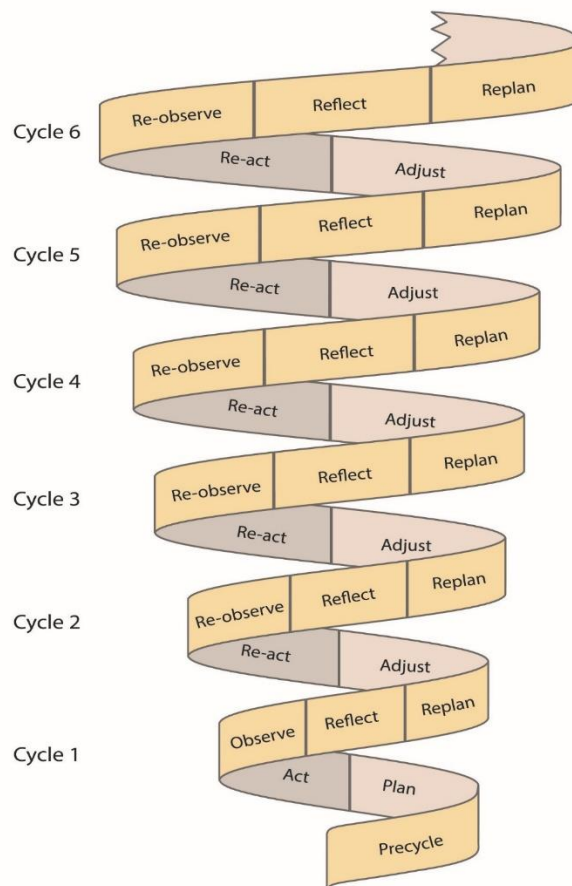


Figure 4: The upward spirals - illustrating that action research aims at reaching a higher level of achievement

Hagevik et al. (2012) shared their enlightenment of positive outcomes of the upward spirals of action research. They argued that even the student-teachers who had limited teaching experience could gain insights to improve their teaching practice through action research. In order to get started the research effectively, they designed a 3-stage plan for implementation. In Stage 1 (preparation stage), they offered training to prepare 20 student-teachers for engaging into the study at the beginning of the first semester of the year. In Stage 2, the student-teachers tried out the action plan as a teaching practice during four to six weeks, from January to February. In Stage 3, as scheduled in March-April, they evaluated their teaching experience “by reflecting on the data, revisiting beliefs and theory, and planning informed future actions” (Hagevik et al. 2012:678). They found these student-teachers gained a rewarding learning experience and were able to more critically “reflect upon and examine their beliefs about teaching and learning and many gained insights...in their thinking” (2012:682).

Their achievement illustrated the upward direction of action research spirals from the collaborative research team. Unfortunately, their research project stopped at Stage 3 of the year (in April) and the re-planning of action was not implemented for further tryout. Nevertheless, within the teaching practice in Stage 2, these pre-service teachers were able to reflect, to observe and to adapt teaching methods they mentioned in the report. However, Hagevik et al. (2012) did *not* describe their *change in action* on a daily or weekly basis during the teaching period in January-February. Their report was not clear and detailed enough to present the concept of “reflection-in-action” (Schön 1983).

In Hong Kong, Chan Wai-sing (2009) also produced a longitudinal study of action research for his doctoral degree programme in education. The study was carried out, stage-by-stage, within one academic school year in a local secondary school. Although he presented an overall effect of action research, he did *not* show the immediate *actions* taken week by week or cycle by cycle for *change*. Even in higher education setting, Wong (2009), who led a research team working in separate stages from September 2007 to May 2008 at University of Ambrose University College at Calgary of Canada,

did not explain clearly about *change in action* of the faculty members in reporting their action research outcomes.

Indeed, there are numerous projects of action research in the field, but most studies have reported on the one-off spiral of “reflection-on-action” (Schön 1983). Only a few studies have shown how teachers have thought *intuitively* to make prompt responses or changes within the process of teaching. As mentioned in Section 2.2.1, intuition is important for change. According to Schön (1983), practitioners are able to think and to make decisions for immediate change within the practising moment of “*reflection-in-action*” (ibid).

As such, this study intends to display a full-loop of action research with the continuous upward spirals, like the one illustrated in Figure 4, to demonstrate the positive effect of “reflection-on-action” as well as “reflection-in-action” (ibid). Reports of the teacher-practitioners’ change in action will be clearly presented (in Chapter 4) cycle by cycle within the research period.

2.2.3 Collaborative Participation

Action research is also distinct from other research methods due to its involvement of partner(s) to participate in the study. As the practitioners alone may not be fully aware of their engaged situations, in order to widen the profile of observations and reflections, it is necessary to work with research practitioners as “co-researchers” (Lomax 1995: 51). These “critical friends” (Day et al. 1993:18) who take part in the reflection-based inquiry share moments of elation, stress and/or difficulties during the process of action research. Hanlon describes the sharing moment between practitioners and researchers as a counseling process in which, through reflections, they work together to “try out appropriate actions” (1991:219) for adjustments. Greenwood et al. describe that,

Action research is participatory because action research aims to alter the initial situation of the group, organization, or community in the direction of a more

self-managing, liberated, and sustainable state. What is defined as a liberated state varies from one practitioner to another...people together establish the action research agenda, generate the knowledge necessary to transform the situation, and put the results to work. Action research is a participatory process in which every one involved takes some responsibility (2007:6).

Therefore, within collaborative action research, practitioners and co-researchers define problems, set goals and reach consensus for actions. As Reason et al. state, “Co-researchers test practices and gather evidence; in reflection stages they make sense together and plan further actions” (2008:1). For instance, Goodnough (2001) conducted collaborative action research with science teachers in an elementary school. She postulated that action research served as the “vehicle for teacher development” (2001:37) because she could obtain a positive effect from the collaborative research team. Further, Farrell (2013) invited three English teachers who were Canadian to participate into a two-year project of collaborative action research. As he concluded, “All three teachers said that they felt that while writing [their reflections], they had a heightened sense of awareness of what they do every day and gave them clarity to see their successes and failures in and out of the classroom” (2013:153). Lewis et al. (2009), as mentioned in Section 2.2.2, formed an action research team in an elementary school for a collaboration lesson study. Moreover, Wong (2009) launched an action research team that involved six faculty members who worked collaboratively for best practices in their university from 2006 to 2008. Further, Hagevik et al. (2012) recruited 20 student-teachers for a collaborative project to enhance their teaching practice. Over the years, a variety of successful action research projects have applied its participatory collaboration work to improve professional practice. (Altrichter et al. 2008; Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Stern et al. 2014; Rauch et al. 2014).

2.2.4 Functional Use

According to Day (1995), action research exhibits functional use for self-evaluation. It arouses awareness of a knowledge system, explores reasons for motivation, fosters a critical mind, assesses the quality of teaching and generates educational theories. People perform action research due to experiencing a problem that occurs in their daily practice (Reason et al. 2008). Feldman et al. (2018) specify that action research is for supporting practitioners to deal with challenges. They reflect that with the past fifty years of research experience, professionals in different kinds of disciplines have recognized its functional use. In particular, they assert that, “teachers are able to do this successfully and can achieve remarkable results” (Feldman et al. 2018:6).

As noted in Chapter 1, the problem of student diversity makes Hong Kong teachers feel under great pressure. It negatively affects their well-being and leads to low morale. Teachers using action research simply aim at improving their classroom practice (McNiff et al. 2011). Through continuous reflective inquiry (Dewey 1938), they come to know-what (practice) and know-why (theory) for problem solving as well as to create a “new theory of practice” (McNiff et al. 2005:4) and/or “to generate new knowledge, which feeds into new theory” (McNiff et al. 2011:14).

To implement such the useful action research, researchers need to prepare carefully for the action plan as pitfalls sometimes are noticeable. First, it is about the time factor. Action research is *not* the *one-off* survey nor interview to collect views from serving teachers, nor even a single class visit of lesson observation. It is a scientific research activity in the long-run that operates with a series of experimental actions engaged in several rounds of the research spirals (see Section 2.2.1 and Section 2.2.2). Doing action research is time consuming. The researchers have to organize the action plan with the school principals and teachers precisely according to their school calendar, teaching schedules as well as the subject-scheme of work within the academic year in order to make sure that the research spirals can keep running to complete the scheduled period of time. In field experience, under some circumstances, action research projects are interrupted by ad hoc school events,

unexpected diseases or bad weather. In that case, data cannot be collected as planned and it might risk to be ended with no effects.

Second, for action research aiming at improving professional practice, it requires committed actions of the research-participants. In collaborative action research, for instance, teachers and researchers have to commit themselves for continuous investigations, interventions and evaluations (Section 2.2.3). Making changes for improvement is not easy in field experience. Effectiveness of doing action research depends upon the committed efforts among the co-researchers to deal with difficulties, such as limited resources. Therefore, good rapport building within the research team is crucial for achieving the designated goals of problem solving. Without mutual understanding or insufficient communication, it is hard to get a positive outcome. For doing action research, it is challenging.

Yet, carrying out action research is a learning process in teacher development. As Elliot affirms, “It [action research] unifies inquiry, the improvement of performance and the development of persons in their professional role” (1991: 52). That is the reason why action research is selected to increase Hong Kong teachers’ capacity to deal with the challenge of student diversity, to improve their classroom practice and to sustain their personal growth and professional development in a complex school environment (Greenwood et al. 2007). Throughout the years, the functional use of action research for teacher development has been noted in relevant literature. In the next Section 2.3, this topic is explored in detail.

2.3 Professional Teacher Development

According to Farrell (2013), the notion of teacher professional development has led to extensive discussions in the field for several decades. In most universities over the world, programmes for professional teacher development are generally designed for initial teacher training (ITT) in respect to pedagogical knowledge and skills acquisition

(Joyce et al. 1980; Bolam 1987). Goodlad (1990) noted that the ITT programmes had the following aims:

1. to prepare teachers to enculturate the young into a political democracy;
2. to provide teachers with the necessary intellectual tools and subject-matter knowledge;
3. to insure that teachers have a solid initial grounding in pedagogy;
4. to develop in teachers the beginning levels of the knowledge and skills

Required to run our schools.

(in Fullan 1992:115).

For pre-service teachers, gaining pedagogical knowledge and skills from ITT programmes is essential because they need the basic qualifications for teaching. In England, when the General Teaching Council (GTC) for England existed, it made statements concerning teacher learning, promoting the value of continuous professional development (CPD). The Council stated that teachers after entering into teaching career have responsibility for their own continuous professional development in ways that,

they [teachers] reflect on their own practice, develop their skills, knowledge and expertise, and adapt their teaching appropriately to take account of evidence about effective practice and new technology (GTC 2006:3).

The GTC recognized formally the need for teachers to remain updated constantly in their professional knowledge and understanding in order to better serve the community. As noted in Chapter 1, the contextual problem of student diversity exists in our Hong Kong community. We need professional teachers to deliver good quality of teaching and contribute their knowledge and experience to curriculum development for school effectiveness (Cheng 1997, 2000, 2009; Day 1985, 1990, 1994; Elliott 1991; Fullan 1992, 1993; Hargreaves 1994; Hopkins 1989). However, Robertson (2012) asserts that the inclusion policy making teacher deprofessionalism. She comments that the issue of student diversity has caused 25% of novice teachers (those with fewer than five years

of teaching experience) to resign from their teaching career in the United States and Australia (Robertson 2012). In addition, Hargreaves & Fullan (2012) indicate that 40% of K-12 American teachers are “disheartened”.

In Hong Kong, recent surveys reveal that teachers have considered to leave their teaching career because their mental health has deteriorated (Tang 2011; Pang 2012; HKPTU 2018). This problematic situation informs us that teachers lack support and they seem to have no learning of how to teach efficiently in such the dilemma of inclusive classroom. Indeed, her saying echoes Fessler’s (1995:179) argument that teachers may choose “Career Exit” due to the unfavourable “environmental condition” (ibid). He proposes that teachers may experience different stages of their career cycle in which there is a dynamic force influencing their career cycle. In Figure 5, an illustration of the dynamic flow model is provided.

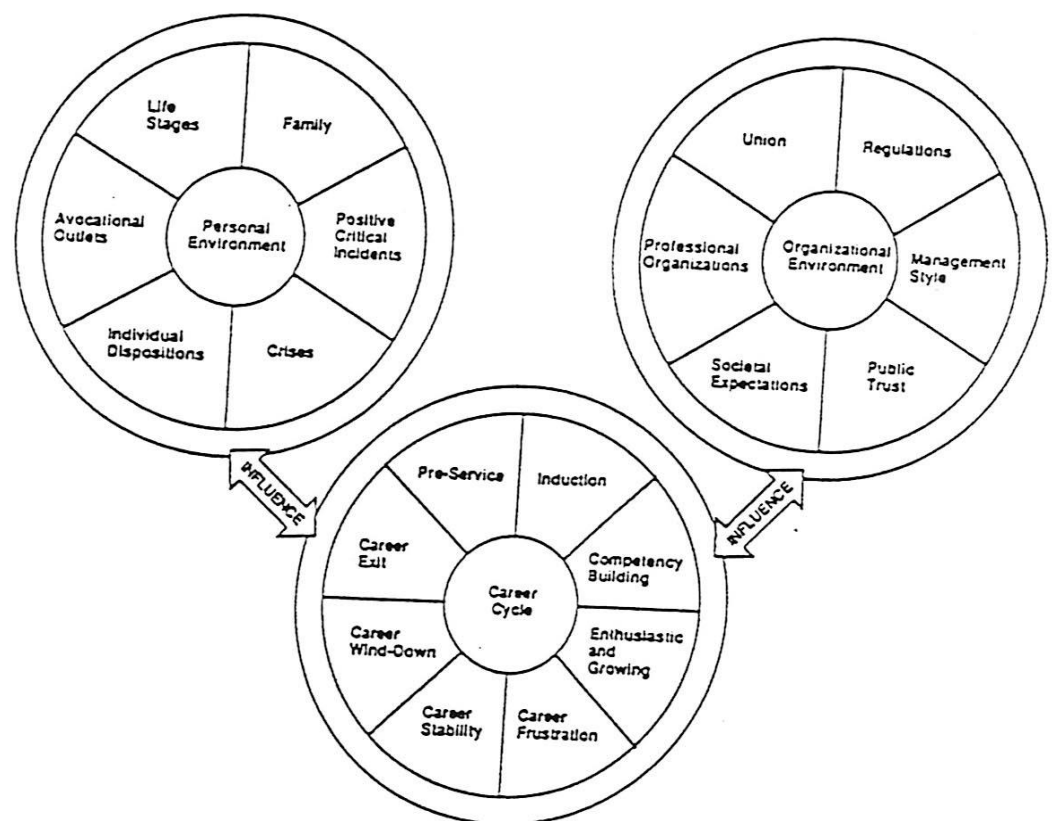


Figure 5: Dynamics of the Teacher Career Cycle (in Fessler 1995:180)

These environmental factors include both personal and organizational factors that may have positive interactions but may negatively interfere with teachers' career cycle. He considers that there are "alternative career options experienced by teachers at various stages" (Fessler 1995:176). The stages include: Pre-service, Induction, Competency building, Enthusiastic and growing, Career frustration, Career stability, Career wind-down, Career exit (ibid). This "Career exit" correspondingly presents a way out of "Extinction" in Hall's model (1992) in Figure 6. Although Hall describes the cycle as an organisational life cycle, the model could apply to teachers' personal career cycle as we can see the "Crisis Period" (ibid) occurred in the figure shown below:

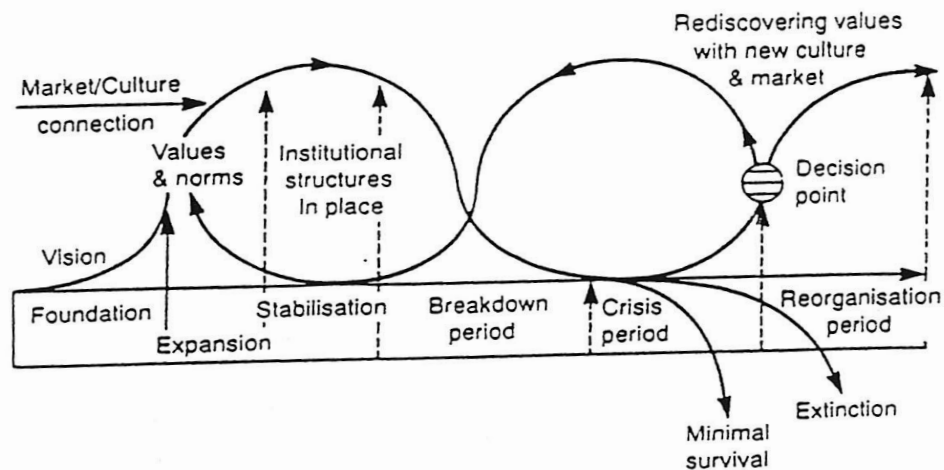


Figure 6: Hall's organisational life cycle (in Day et. al.1993:48)

This up-flow and down-flow motions illustrate the inter-related factors of macro and micro influences on working cycles. Farrell (2013) reminds us that this kind of inter-related flowing cycle is identified after the 1990s in literature. Before that period of time, scholars would like to postulate a developmental progression which was "linear in nature" (Farrell 2013:19). That said, before the 1990s discussion on teacher career cycle was central to skill development from stages to stages (ibid). This study, however,

is concerned about the critical period of contextual problem of student diversity (in Hong Kong school environment) as the dynamic force of factor (as the figure shown above) influencing teachers' choice of survival or withdrawal rather than the progression stages of teacher career development in history.

For this reason, reviews on the linear progressive cycles, concerning competency-based development of teacher before the 1990s are briefly cited. For example, Fuller displayed a model of four stages of teacher development as: "Pre-teaching", "Early concerns about survival", "Teaching situations" and "Concerns about pupils" (in Fuller et al. 1975). In the first phase of the model, Fuller et al. described that student-teachers and new graduates were concerned about instructional practices as they experienced the substantial changing stage from "Pre-teaching" to the second phase of "Early concern about survival" in which they came to realise the complexity of actual classroom practice (ibid). In the third stage, "Teaching situations", teachers were aware of their self-efficacy. In the fourth stage, "Concerns about pupils", teachers focused more on student learning (ibid).

His model has influenced certain scholars who have shown an interest in this area as well as in adult learning (Katz 1972; Gregorc 1973; Ryan et al. 1979; Feiman et al. 1981; Burden 1982; Leithwood 1990; Oja 1989). For instance, Elliot (1993) described that Dreyfus (1981) suggested a competency development of "Experiential Professional Learning", in which learners developed their skills in four phases: first, from "novice to advanced beginner"; second, from "advanced beginner to competent"; third, from "competent to proficient"; and fourth, from "proficiency to expertise" (Elliot 1993:75-76). On other hand, Leithwood identified five stages of the career cycle with different skills developed spontaneously in the aspect of professional expertise: (1) "launching the career"; (2) "stabilising: developing mature commitment"; (3) "new challenges and concerns"; (4) "reaching a professional plateau"; and (5) "preparing for retirement: focusing" (in Day et al. 1993:44). Bolam (1990:153) also labelled five stages as: the preparatory stage, the appointment stage, the induction stage, the in-

service stage, and the transitional stage. Kremer-Hayon & Fessler (1991) classified nine stages of career cycle: pre-service, induction, competency, building, enthusiasm and growth, career frustration, stability and stagnation, career wind-down, career exit (in Day 1997:40).

As listed above, Day argued that these linear progressive models were “*over simplistic and impractical*” (1997:41) for describing teacher development from one stage to another. He believes that teachers learn by experiencing substantial “dynamic” and “multidimensional” situations (ibid). Additionally, Van Manen comments that tact develops from internalised norms and knowledge and is then expressed in actions, such as in “interactive teaching-learning situations” (1995:41). That said teachers need continuous learning within the ever-changing school environment. This is the focus of this study - how teachers learn through action research for improving the situational problems in today’s inclusive classroom.

2.3.1 Teachers as Learners

With reference to Fullan, professional teacher development underpins a concept of “teacher-as-learner” (1995:262). He emphasizes that in-service experienced teachers need to learn continuously as the “change” agents. He elicits that, “Teachers are no longer just in the conservation business; they are in the change business” (1995:257). Teacher learning involves building up their vision through self-reflection, action-based inquiry, mastery of knowledge and skills with collaboration with others to improve teaching practice (ibid). He conceives that teacher development is life-long learning. That is, professional teachers learn continuously throughout their career life for how to teach better in this “unpredictable” social environment. He stresses that,

professional development must be reconceptualized as continuous learning, highly integrated with the moral task of making a difference in the lives of diverse students under conditions of somewhat chaotic complexity (Fullan 1995:257).

In this concern, Altrichter and Posch (2014) point out that teacher learning roots in reflection. In particular, they place emphasis on promoting action research for professional teacher development. It is because action research empowers teachers to yield “constructive view of learning and formative feedback” to their teaching (2014:8). Farrell also indicates that teachers after years of teaching need to “step back to consider their own personal professional development” (2013:18). In this regard, he maps out areas of: “subject-matter knowledge, pedagogical expertise, self-awareness, understanding of learners, understanding of curriculum and materials, and career advancement” for professional development (2013:18-19). Particularly, the areas of understanding of learners, curriculum and teaching materials (ibid) are exactly the contents of teacher training programme that Hong Kong teachers need to learn in the centralized TDP as argued Chapter 1.

Current Issue

As outlined in Chapter 1, since 2008, the Hong Kong Government has held teacher development programme (TDP) for teacher learning how to cater for students with SEN. However, over the years, the problematic situations have still been prevailing in local schools. Although Chao et al. (2017) found that after attending the centralised TDP, teachers regarded their self-efficacy in applying the learned strategies to their classrooms as positive, the majority (about 90%) of local teachers still felt distressed when managing student diversity in normal schools (HKFEW 2015, 2016). In fact, Chao et al.’s claim that teacher efficacy has a positive effect is debatable. They reviewed questionnaires from 322 teachers who completed a five-day centralised TDP in 2013-2014. The teacher-participants were asked to complete a pre-test questionnaire on Monday (Day 1) and a post-test questionnaire on Friday (Day 5), the last day of TDP. The teachers indicated their “perceived self-efficacy” (in terms of teaching and learning and classroom management) by choosing the range from 1 to 9 levels (Chao et al. 2017:364). According to Chao et al., teachers’ “confidence in teaching students with SEN were significantly improved following the training programme” (ibid). However, their claimed effect on the increased self-efficacy of teachers was based on

anticipation rather than action. It was because these 322 teachers had not yet been back to their schools for teaching but were asked to evaluate the “impact” on application skills at practical level (ibid). Their so-called “confidence” (ibid) did not bring out any observable changes in try-out actions. Without practising, how can teachers reflect on their efficacy when teaching children with SEN in ordinary classroom?

In contrast, Bruce et al. (2008) provided a good example of how to prove teacher efficacy in teacher development. As they explained, “Over several years of research, we develop[ed] and tested a model of teacher change in which teacher efficacy is the central mediator between experience and action” (Bruce et al. 2008:348). In other words, teacher efficacy relates to teachers’ actions and some observable and/or measurable changes that teachers can experience. It is not based on anticipation; rather, it involves “a series of activities and relationships that influence how teachers judge their capacity to impact student learning and achievement, set goals and persist in meeting those goals” (ibid). According to Bruce et al. (2008), “teachers with high efficacy” are more likely to make changes that improve student learning.

However, Chao et al. asked teachers to judge their self-efficacy based on *presumptions with no actions and no evidence*, from level 1 to level 9, on the last day (Day 5) of TDP. If Chao et al. intended to investigate whether or not teacher efficacy increased after the TDP, why not they collected the data when teachers had returned to their schools? If they did so, it certainly would have been hard for them to get the return of teachers’ questionnaires. It is understandable that teachers are too busy to offer responses as they have heavy workload every day (Tang 2011; Pang 2012). That is the point Girvan et al. argue that the traditional TDPs are so informative that cannot help teachers effectively make changes to their practice. As they state, “Professional development which actively engages the learner within their own professional context is more beneficial than passive attendance” (Girvan et al. 2016:132). Teachers need the opportunity to practise reflective change through actions (ibid). Indeed, this is what Dewey believes that teachers reconstruct their experience as “learning by doing” (1938:77). Moreover,

Lesjak (2014) conveys that learning comes from the process of change while teachers do something new for improvement. Hence, action research provides room for teachers to reflect, to plan and to adapt teaching practice. As Lesjak explains,

In this context Action Learning is a custom-fit form of learning, directly related to the relevant action; it requires careful supervision on one hand, and a slow and steady leading of the participants towards the new mode of perception and solving of problems on their own – a change of pattern (2014:80).

In that regard, conducting action research does make sense to lead teacher change in learning how to deal with the problem of student diversity in today's classroom. As Feldman et al. specify (2018), over the past fifty years, teachers in the field have successfully demonstrated using action research for teacher development. Teachers learn effectively to improve their practice not through passively attending the TDP but through actively participating in action research (Girvan et al. 2016).

2.3.2 Parameters of Professional Teacher Development

According to Evans (2002), the dimensions of professional teacher development can be referred to two elements: attitudinal development and functional development. She determines that both elements involve reflective change in action of teachers. Her meaning of attitudinal development is about motivational and intellectual knowledge development (ibid). The functional development, on the other hand, is about teaching process of “doing” (ibid). These two dimensions are indeed related to three areas of knowledge, attitude and practice. As Day remarked, the parameters of professional development can be described as below:

It is the process by which, alone and with others, teachers *review, renew and extend their commitment as change agents* to the moral purposes of teaching; and by which they acquire and develop critically the knowledge, skills, planning and practice with children, young people and colleagues through each phase of their teaching lives (Day 1999:4).

These three aspects of knowledge, skills (practice) and attitude are important for Hong Kong teachers' professional development. Back to the issue of contextual problem of student diversity (as explained in Chapter 1), teachers learning the approach of differentiated teaching is essential. That is why the EDB has been facilitating the centralized professional TDP for teachers' learning about this approach for thirteen years. However, only attending the TDP is not effective enough to improve teaching at practice level (Girvan et al. 2016). That said, it is believed that through action research, getting teachers to know-what and to know-how to apply differentiated teaching to classroom practice for problem solving is the resolution (Altrichter et al. 2008; Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Stern et al. 2014; Rauch et al. 2014).

As argued before, action research can make a difference in yielding meaningful change for improving teaching practice in professional teacher development (ibid). Goodnough deems that action research is like “a vehicle for teacher development” (2001:37). It is, as Townsend ascertains, an effective means for “enhancing professional development through reflection and research informed change” (2014:8). Thus, the paragraphs below explore how this study attempts to enhance professional teacher development in terms of *knowledge*, *skills* and *attitude* as the aspects discussed above. Meanwhile, effect of the “informed change” (ibid) on professional teacher development will be critically analysed in parallel to these three parameters in Chapter 5. In fact, our government correspondingly defines these three aspects as the core dimensions of continuous professional development (CPD). It specifies that the aim of facilitating CPD is “to equip the teaching profession with the necessary knowledge, skills, values and attitudes for meeting the challenges of the new era” (Committee on Professional Development of Teachers and Principals, EDB 2015:22). Therefore, the contents of these three parameters in regard to solving the problem of student diversity (described in Chapter 1) are detailed in the sections that follow.

2.3.2.1 Knowledge (Differentiated Teaching)

Differentiated teaching is an approach that teachers adjust lesson contents, modify teaching materials and vary different tasks and activities to meet different learning needs of students (Tomlinson 1998, 2001, 2014; Lawrence-Brown 2004, Byers 2004). With reference to Tomlinson, “Differentiation is a model designed to guide teaching that provides equity of access to excellence for every student” (2014:27). She believes that every student has ability to learn and individual differences of students found in real classroom is normal (ibid). Since the late 1990s, she has published books and research reports, contributing to a differentiation model in the field. During the years, she has demonstrated several school-based projects leading school administrators and teachers learning how to facilitate differentiated teaching to benefit student learning.

For this reason, teachers of Hong Kong attending the centralized TDP have opportunity to study this knowledge (principles and examples of differentiated teaching) according to the government documentation (see Chapter 1). Her differentiation model reflects a belief that human beings are different (Tomlinson 1998, 2001, 2014). She emphasizes that teacher learning how different students learning in different ways is crucial for establishing an inclusive environment for all learners. She articulates that differentiation contains three ways of variations in contents/curriculum, teaching process and learning products (tasks/activities) (ibid). Differentiated teaching can only takes place when teachers are able to see students’ individual differences in their learning profiles, interests and readiness (ibid).

Having said that, what teachers need to do in differentiated teaching is to modify the one-size-fits-all curriculum by varying tasks and activities to best fit diverse needs of students studying in the same classroom. This approach is vital for teacher development. In her earlier publication, she argued that the “hallmark” (Tomlinson 2001:9) of professional teaching was concerned with how teachers exhibited a high quality, multi-approach to respond to students’ different learning profiles, interests and readiness in the “mixed-ability” classroom (ibid). She remarked that,

A benchmark of teacher development is the point that at which the teacher has become secure and comfortable with classroom management. Fear of losing control of student behaviour is a major obstacle for many teachers in establishing a flexible classroom. Teachers who differentiate instruction quickly point out that, if anything, they exert more leadership in their classrooms, not less (Tomlinson 2001:2).

What she considers about benchmarking the teacher development is in relation to how well teachers can use the approach of differentiated teaching to get student learning effectively in a good manageable way. This is actually what Hong Kong teachers need to achieve and the purpose of this study (as argued in Chapter 1). Over the years, Tomlinson and her fellow researchers have demonstrated how to develop the school-based development projects. Specifically, they suggest differentiating curriculum contents and instruction as well as facilitating various kinds of “avenues” for students to approach the process of learning (Tomlinson et al. 1998; Tomlinson 2001). In 2008, they gave examples of two different schools in which they practised the principle of differentiation for teacher development. They found that teachers in the elementary and high schools were able to learn making “change in classroom instruction that benefitted a broad range of student in their schools” (Tomlinson et al. 2008:77). She determines that differentiation is an effective means to include all learners with different abilities learning together (Tomlinson 2001, 2014).

In 2011, Vassiliki et al. used Tomlinson’s differentiated principle to conduct qualitative research on students’ learning of English in Athens. Their study involved six sections of differentiated teaching in an inclusive classroom where pupils in Primary 4 were the second language learners. They developed two levels of creative writing tasks as one for the six children with SEN and the other for normal pupils. They were glad to find “the effectiveness of differentiated teaching in helping students with SEN cope with their learning difficulties” (2011:73). In addition, they noticed that children with SEN became confident in learning and “began to eliminate their negative feelings about their performance” (ibid). Their positive research experience serves as evidence of the

positive effect of differentiation. In addition to setting different levels of teaching goals, Byers (2004) suggested that differentiation also applied to the structure of curriculum, the sequence of instruction, learning paces and grouping. This approach of differentiation is crucial in the inclusive classroom as Lawrence-Brown articulated,

Differentiated instruction is as important for students who find school easy as it is for those who find it difficult. All students benefit from the availability of a variety of methods and supports and an appropriate balance of challenge and success (2004:37).

Suleymanov (2015) also indicated that curriculum adaptation was essential for catering for the diverse needs of student learning. He presented a curriculum model in which differentiated teaching effectively increased children's confidence in their learning ability. He referred to the United Nations' Salamanca Statement (1994) that supported the idea of giving extra "instructional support" (ibid) to children with SEN to learn the curriculum in normal schools as a means to accelerate the student-learning pace. He emphasised that "while making one step in learning, a child makes two steps in development" (Suleymanov 2015:85). Thus, the concept of differentiation is cardinal for teacher development.

Unfortunately, Hong Kong teachers tend to be textbook bound. Shaver describes this particular teaching style as "heavily dependent on textbook content and structure" (2010:182). It is the common practice for teachers in Hong Kong to use the pre-set materials available in textbooks as well as e-books every day. In addition, the publishers of these books supply extra exercises to prepare students for examinations. Local scholars comment that "teaching has remained teacher-centred, didactic and non-interactive" (Carless 2007:596) and exam-oriented (Mok 2006; Yeung 2010). Teachers are unlikely to adapt curriculum and instruction in response to student learning needs. As noted in Chapter 1, about 90% of local teachers found it difficult to teach students with SEN in normal classroom and among them, 79% attended the centralised TDPs (HKFEW 2015, 2016). This information validates Girvan et al.'s (2016) claim that

traditional TDPs are not a practical solution to classroom problem. It is because teachers have not yet realized that there is *no-one-size-fits-all* curriculum that can fit the diverse learning needs of students. Even though teachers have learned the taught adaptive strategies (from the centralised TDPs), they have not yet taken actions for change. Hence, developing teachers' focus on *change in action* – the perception of adopting differentiated teaching (Tomlinson 2014; Lawrence-Brown 2004) – is the key content of teacher development.

2.3.2.2 Skills

Instructional Practice

In the psychomotor domain, the focus is on assisting teachers with their application of learned teaching skills in the classroom at the practical level. In the context of inclusive classroom, teachers' application of adaptive strategies is the solution for managing student academic and behavioural problems (Tomlinson 2014; Houtveen et al. 2001; Lawrence-Brown 2004; Knight 2009). Houtveen et al. specify that “instruction, classroom management factors, and motivation” are the “important parts of adaptive instruction” (2001:393). Thus, teacher learning to modify the “curriculum content and sequence of instruction” (ibid) is the key aspect of technical skills in teacher development. Cooper et al. (2017) articulate that teacher learning to facilitate consistent classroom routines, to prepare interesting learning tasks and to give constructive feedback and effective instructions are the basis for improving classroom efficiency. Scott (2016) advocates that teachers' effective instructions can arouse students' interest in learning. If teachers provide students with a positive learning experience, students will have more confidence in learning (ibid). As mentioned previously, differentiating the curriculum objectives as high, middle and low according to the difficulty levels of teaching contents can foster student learning success (Tomlinson et al. 1998, 2008; Houtveen et al. 2001; Lawrence-Brown 2004; Knight 2009). Furthermore, teachers need to learn to break down “complex tasks into teachable subcomponents” (Kritikos et al. 2018:131) and to design several small steps for the completion of the assigned task (Shawer 2010).

Unfortunately, as mentioned in Section 2.3.2.1, teachers of Hong Kong are textbook-bound and their classroom practice is still teacher-centred (Bryant et al. 2009; Carless 2007). Even though the majority of teachers have learned about adaptive strategies from the centralised TDPs, they rarely adjust their instructional practice. As such, they continue to face problem of students' diverse needs in ordinary classroom (HKFEW 2015, 2016). According to Dewey (1933), learning begins with one's experience of doing. Teachers should be given the opportunity to try out what they have learned so that they can increase their capacity to put "practical knowledge in action" (Shawer 2010:182). Thus, TDPs should go beyond giving teachers information (Girvan et al. 2016). Rather, they should engage teachers in the process of identifying student learning needs and making changes to curriculum to better cater for students' different abilities (Houvtien et al. 2001:393-394). This relates to Dewey's perspective of the learning process of "reconstruction of experience" (1838:77). In 2010, Shawer conducted an empirical study of teachers' actions to examine curriculum approaches and the effects on teacher professional development (2010:173). Ten teachers who taught English for L2 (second language) learners participated in this research project on curriculum adaptation and enactment. During three months of the tryout, the teachers learned through the process of adapting textbook materials for meeting different needs of international college students. Shawer summarised some of their reflections:

I make the mistakes, if I just adhere to the textbook, because some lessons in [the textbook] wouldn't interest the students...I adapt material, topics...and specific tasks...I supplemented a lot...used other textbooks and materials...I skip parts and adapt the textbook material and activities...we've had lessons using videos... (Curriculum-developers) (2010:177-178).

What makes sense to cater for the diverse needs of students is that teachers will modify their teaching materials. One teacher explained that the following did not benefit student learning: "[I could] *go into the classroom and say, 'Open your books at page ten' and everybody does, and I can sit at the front and have a bit of a sleep or whatever... [but] just using the book doesn't benefit anybody*" (ibid). Instead, they

learned to skip difficult tasks and to replace other appropriate teaching materials at hand.

Classroom Management

In Hong Kong, children in English lessons are also L2 learners as they are native Cantonese speakers. Hansen et al. indicate that children may not respond properly to teachers' instructions in L2 classroom and "this can create challenges in classroom management" (2017:627). It is because L2 children have limited English vocabularies for communication (Macaro 2001). As Phillipson (2007) noted, teaching Chinese children with SEN in the context of local normal classroom is challenging, especially in regard to those students with emotional and behavioural disorders (EBD), autism (ASD) and attention-deficit and hyper-activity (ADHD). Teachers need to pay extra effort of scaffolding as well as technical skills such as cuing to assist students' learning of English. According to Salend, it is useful to apply the strategy of cuing for children with SEN so that they can decode difficult words. As she explained, "Cuing can help student read difficult or unfamiliar words...For example, if a student had difficulty decoding the word store, a vocabulary cue, such as 'You go to buy things at a _____', might elicit the correct response" (1998:321).

Apart from English learning, children in Hong Kong also find difficult to decode Chinese words. As Ho (2007) remarked, pupils with specific learning disabilities (dyslexia) may find difficult to capture the shapes of the Chinese words. He stated that, "The Chinese character is composed of strokes and components in a square configuration, which make the visual processing nonlinear and more complex" (Ho 2007:370). Even though there are merely two parts of combination of the structure of a single word, pupils with SEN might not be able to decode the simple combinations of the AB pattern of the Chinese character – for there are also more complex patterns in a single word (ibid). For example, the word 「 江 」 consists of the two-part combination of left and right as part A, on the left-hand side, indicating the meaning of water and part B, on the right-hand side, indicating the sound of the word. Additionally,

there are other patterns of upper (A) and lower (B), e.g. 「芽」 and outside (A) and inside (B), e.g. 「關」.

At this point, using the technique of visual cuing (Salend 1988, 2005) to highlight either Part A or Part B in colour or to enlarge the size of the part can help children with SEN to more easily capture the shape and to decode the structure of each Chinese word. As such, teachers need to design, for instance, a step-by-step worksheet for the needs of low achievers because one-set-fits-all curriculum materials that can cater for high, middle, low and students with SEN in an ordinary classroom do not exist (Tomlinson et al. 1998, 2008; Houtveen et al. 2001; Lawrence-Brown 2004 ; Knight 2009).

Teachers who demonstrate effective instructional practice not only nourish students' confidence in learning but also improve their behaviour (Scott 2016; Cooper et al. 2017). In regard to the *improved* behaviour of students, Hansen et al. specified four observable criteria:

increased rates of student-on-task behaviour, improved use of teacher praise, decreased use of teacher reprimands, and improved behaviour of student identified as at risk for emotional and behaviour disorder (2017:630).

If teachers of Hong Kong can learn through the modification of instructional practice, student-challenging behaviour may reduce and lead them success in learning (Scott 2016; Cooper et al. 2017). For better classroom management, Delceva (2014) considers that it is the matter of how appropriate the techniques the teacher can use to stimulate classroom-learning atmosphere in order to get students participated in the planned tasks and activities for achievement. Such the technical skills can be enhanced by the continuous reflection because this is the learning process in which teachers can “define the decision to be made, the ends to be achieved, the means which may be chosen” (Schön 1983:40). In developing psychomotor skills, Levin, Dewey and Schön believe that the full loop of action system of planning, acting, reflecting and re-planning which

is the basis for change in professional development (Lorino 2018). Implementing action research certainly is a good choice to assist teachers learning from doing.

2.3.2.3 Attitude

As mentioned in Chapter 1, scholars have noted that Hong Kong teachers' low morale (Cheng 2009; Pang 2012; Tang 2011). Teachers have reflected that they feel stressful to teach in the inclusive classroom (HKFEW 2015, 2016). They need support to cope with challenges associated with the diverse learning needs of students. In order to help teachers improve their teaching practice, understanding their problems and assisting them to adopt the differentiation approach (Girvan et al. 2016; Tomlinson et al. 1998, 2008; Houtveen et al. 2001; Lawrence-Brown 2004; Knight 2009). Therefore, peer support in collaborative action research helps strengthen their confidence and contributes to a positive attitude in regard to make changes (Altrichter et al. 2008; Farrell 2013). In Farrell's research, he formed a team of three English teachers for collaboration work. He pointed out that the team of action research enabled teachers to learn from one another by getting "positive feedback, emotional support, and empathy" (Farrell 2013:132). He considers that teachers burnout easily because they routinely deal with a complex environment in the classroom alone. When engaged in the action research team, teachers can "overcome any feelings of isolation and produce a more collaborative mentality" (Farrell 2013:133). It is crucial for teachers to have an opportunity to be listened to and to get empathic understanding of their insufficient and problematic teaching (Girvan et al. 2016). According to Bruce et al. (2008), teachers who are dissatisfied with their teaching performance are motivated to learn for the sake of change. As Lesjak mentions, "Learning requires emotional involvement of the participants during the relevant learning and research process" (2014:80). Thus, through action research, teachers commit their efforts and "emotional involvement" (ibid) in the ongoing reflective cycles. They have the opportunity to reflect on their feelings, to share ideas and to take actions for change with the support of the team. As one of the English teachers in Farrell's research team shared,

I think this experience has given me the confidence, skills and motivation to continue this type of PD [professional development] in the future and to enjoy my teaching in this new phase of my career that I feel is coming up (Farrell 2013:132).

The above teacher's enlightenment demonstrates the success of action research that has brought her the meaningful experience of teacher development. Research shows that teachers who have successful teaching experiences contribute to "high rates of student success" (Cooper et al. 2017:103). From Farrell's perspective, action research is undoubtedly the effective way to attain teacher empowerment - that strengthens their hearts to encounter challenges in the complex environment of classroom teaching. If the intention is to decrease the dropout rate of 25% of servicing teachers in the field (Robertson 2012), why not apply collaborative action research to reduce the possibility of their "career exit" (Fessler 1995)? When teachers enjoy teaching, they will have the drive to learn more through professional development - as the point shared by the teacher above (ibid). Farrell also notes that action research helps "increase morale and ultimately lead to more job satisfaction" (Farrell 2013:133). Teachers of Hong Kong need to be empowered with the uplift spirit to teach students with the diverse learning needs in their classroom. Therefore, it is vital to arouse their motivation and positive attitude for change in the affective domain of teacher professional development.

Summary of the Chapter

This chapter explores the notions of action research (Section 2.1), its characteristics (Section 2.2) and effects on teacher development based on findings and the concept of teachers-as-learners in relevant literature (Section 2.3). It discusses current issues and the parameters of three aspects of knowledge, skills and attitude in professional teacher development. The argument regarding what teachers lack is not the resource support from the government (as described in Chapter 1). It is an opportunity to promote action

research for change (Dewey 1938; Schön 1983). Hence, the concept of teacher learning through practising serves as the ground for this empirical study.

Chapter 3: Design of the Inquiry

This chapter justifies the qualitative action research approach taken to explore its potential for improving the practice of differentiated instruction by teachers in a Hong Kong primary school setting. Contents include a qualitative research methodology in Section 3.1, and research method of how to use observations and action research cycles as the primary means for data collection in Section 3.2. Process of setting up the theoretical framework for data analysis is explained in Section 3.3. Having justified at the design stage potential limitations of this research design in Section 3.4, the chapter concludes with a discussion of how ethical issues posed by the study and how these were addressed in Section 3.5.

3.1 Rationale for Research Methodology

3.1.1 Pragmatist Positioning

As literature reviewed in Chapter 2 indicates, action research is established as an effective strategy for problem resolution and professional development in teaching (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Moghaddam 2007; Nijihawan 2017; Rauch et al. 2014; Reason et al. 2008; Stern et al. 2014). Hence, the over-arching concern of this study was to see how far teachers who were engaged in an action research project could develop their practice in two respects: professional knowledge (cognitive development, i.e., knowing more about possible strategies that might improve their responses to pupils' needs); and feeling more positive about the challenges posed by accommodating a wide range of special educational needs in mainstream classrooms, thus raising their morale.

This project, common to others in the action research tradition, is positioned philosophically within the tradition of 'pragmatism'. This distinctively places most emphasis in research design on the intended practical effects or outcomes of a proposed investigation, rather than on a *priori* concerns with epistemology and ontology as might

be the case in more conventionally situated qualitative work within an interpretive paradigm. As Peirce maintained, at the heart of social science should be a concern to

Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object (1878:135).

From a pragmatist perspective, ontologically speaking the world we inhabit is inherently uncertain, dynamic rather than static, requiring inquiry to be conducted in a practical way (Peirce 1878; James 1904; Dewey 1931). As Dewey explains,

Thinking begins in what may fairly enough be called a forked-road situation, ... which is ambiguous, which presents a dilemma, which *proposes* alternatives... (1910:11)

By putting that sense of (inevitable) uncertainty to one side and continuing carefully but deliberately to find a stand-point from which the dilemma may nonetheless be considered systematically, to “*survey* additional facts” in Dewey’s own words (ibid) the pragmatist researcher may gain a more commanding view of the situation, in order to “*decide* how the facts stand related to one another”.

The three underlined and italicized action-verbs (*propose*, *survey* and *decide*) highlighted above are key to Dewey’s more expanded theory of research as inquiry (1938), and these are critical underlying principles of this study. This study begins with the dilemma and follows a through and systematic experiment comprising a *process of actions*. From this, a provisional and contingent understanding is reached which can underpin the identification of a practical resolution, in this case how through action research teachers can be better prepared to include students with SEN in their lessons. As James comments, pragmatic inquiry “presents us with concretized objects” (1950:504).

In more detail, it then follows that meaning, action and effect are the three basic elements of a pragmatically informed research methodology (Peirce 1878; James 1904; Dewey 1931). For greater clarity, the relationship is presented in a diagram (Figure 7).

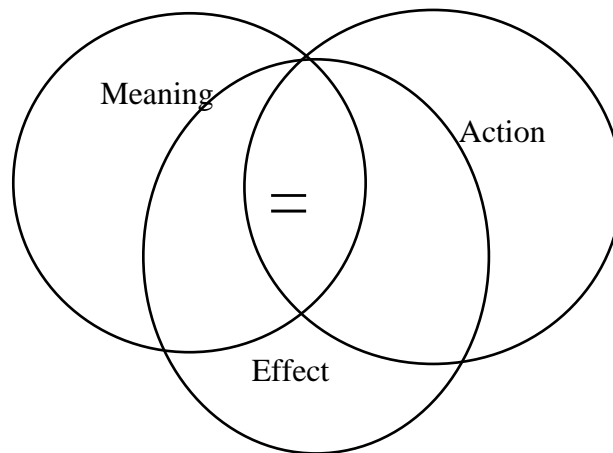


Figure 7: Presenting the core concept of the three elements of pragmatism.

The equal symbol (=), located in the middle of the interlaced circles, indicates how each of the three elements shares equal significance, with Lorino affirming, “Action is meaning and meaning is action” (2018:71). Without action, there is no meaning of the idea. Pragmatists look for the useful results obtained from experimental actions to improve a situation (Hammond 2013). Pierce, James and Dewey extensively expressed their perspectives in their work. The following table summarises their perspectives (with the use of quotes):

<i>Classical Pragmatists' Perspectives</i>	Effect	Meaning	Action
Peirce	<u>Practical outcome=object</u> “our idea of anything is our idea of its sensible effects” (1992:132)	“Consider what <i>effects</i> ...is the whole of our conception of the <i>object</i> ” (1878:135)	<u>Doing=being</u> “When a person means to do anything he is in some state in <i>consequence</i> ...Not only will <i>meaning</i> always, in the long run, mold reactions to itself, but it is only in <i>doing</i> so that its own <i>being</i> consists” (1931:343)
James	<u>Empirical outcome=concept</u> “Pragmatism represents a perfectly familiar attitude in philosophy, the empiricist attitude” (1907:31)	<u>Meaning of object=effect</u> (involved actions) “To attain perfect clearness in our thoughts of an object” (1907:29)	Action is “ <i>transitive</i> ” (1950:243) <u>Effect in action=concept</u> “A movement is a <i>change, a process</i> ; so we see that...things are not elements, but <i>wholes</i> already

			formed” (1950:234-235)
Dewey	<u>Experimental</u> <u>outcome=change</u> <u>in action</u> “As a consequence the <i>changes</i> produced in the environment react upon the organism and its own behaviour” (1982:129)	<u>Meaning of</u> <u>object(situation)=concept</u> <u>of knowledge (via</u> <u>transformation)</u> “directed transformation of an indeterminate situation... <i>to convert</i> the elements of original situation into a unified whole” (1938:108)	<u>Experiential</u> <u>action=meaning</u> <u>=knowledge</u> “the process that now and always is the <i>transfer</i> from the world of set external facts and of fixed ideal <i>values</i> to the world of free, mobile, self- developing, and self-organizing reality” (1904:174-175)

Table 1: Synchronising the classical pragmatists’ perspectives

The above table captures the core idea of how pragmatism influences the research undertaken. With James, action is understood as “transitive” (ibid), leading to a process of change. With Dewey, experimental action is understood in this case as a process of transformation that generates knowledge from practical experience (ibid). Moreover, as Peirce stresses, “doing” gives meaning to “being” (ibid) – the effect of an experiment. These views position require the action of an experiment as the evident process to exhibit the meaning of the truth (consequences). The pragmatic idea articulates the

substantive experiential framework through a clarification of testing, which greatly differs from positivism.

In an *ontological* sense, the action research undertaken in this project captures the reality of situations that teachers face in their everyday classrooms. It offers what Hope et al. have described as “ontological authenticity” in revealing what matters to the research participants, through investigation of their “personal views” of situations (2003:123). Teacher-participants who engaged into this study shared in considerable depth their perspectives on the complex and diverse needs of the inclusive classroom.

Greenwood and Levin point out that pragmatic action research is solution-focused, which is “context-bound and addresses real-life problems holistically” (2007: 63). Hence, from an *epistemological* perspective, the ‘findings’ of an action research project will be aimed at solving problems, identifying solutions relative to the context of the situation being investigated. This relativity implies necessarily certain limitations to the application of those solutions identified which may be particular to specific sets of circumstances as effective strategies. Having been co-constructed between the researcher and teacher-participants in this study jointly the knowledge generated could be highly valuable to the context being investigated i.e. primary school teachers engaged in developing differentiated instruction in Hong Kong because “the credibility-validity of action research is measured according to whether actions that arise from it solve problems (workability) and increase participants’ control over their own situations” (Greenwood and Levin 2007:63). Further insight may be extrapolated or inferred from those findings which have relevance beyond the context being investigated but other studies would be necessary to establish that more robustly.

Another epistemological challenge for this approach is that of ‘other minds’ and how far the co-constructors involved do in practice reach the same understanding. In this regard, pragmatism does allow for the possibility of people in similar contextual situations reaching collectively agreed “practical consequences” (Stanford Encyclopedia of Philosophy 2013). Dewey emphasises that the “intelligent actions”

(1947:37) of people in a community construct the knowledge obtained through a process whereby each members' individual actions connect with the action of others (1947:37). Within more contemporary pragmatist thought, Mead suggests that this then leads to the transformation of action through social activity (1934:145) resulting in a new social understanding of an "effect" (Peirce 1878).

Finally, knowledge is contingent on a pragmatist view, given the emphasis on "workability" for problem-solving (Greenwood et al. 2007; Hammond 2013; Harney et al. 2016; Hernes 2014; Lorino 2018; Reason et al. 2008). The cyclical nature of action research fits this understanding well, with the search for meaning, effect and action (Peirce 1878, James 1904 and Dewey 1931) ongoing. It may resolve a dilemma or problem in the moment but cannot offer final, definitive or universal understanding.

3.1.2 Pragmatism and Action Research

As Dewey maintains, "intelligent actions" (1947:37) can solve problems and generate knowledge from practice in the learning community (Hammond 2013; Lorino 2018). His experiential practice embeds not only the procedural thoughts of actions but also the committed actions for change. Hagevik et al. (2012) describe that action research is the pragmatic "vehicle" to initiate such the change for improvement. As part of the research methodology, Moghaddam indicates that "pragmatic theory is clearly represented in the world of classroom action research" (2007:236). In this study, the teacher-practitioners intended to search for resolutions through the continuous practice of action research. With regard to practice, Carr et al. (1986:190) refer back to its Greek origins and the notion of 'praxis', meaning 'informed, committed action' and this is at the core of empirical action research. In this present study of differentiated instruction in primary schooling in Hong Kong the two research questions identified are:

- (1) What change in action will the teachers make in relation to the application of differentiated teaching to address diverse learning needs of students?
- (2) What is/are the effect(s) of such the change in teacher professional development?

As Moghaddam explains, pragmatic theory “is dealing with things working” (2007: 235), or rather not working currently in this particular case. Meanwhile, action research offers one structure within which to systematically investigate both the problem and a potential solution. By better understanding the difficulty and a series of related interventions, the hypothesis based on research undertaken widely across the teacher development field is that action research works can help to solve the problem.

In this project, teacher-practitioners came to understand *meaning* from reflecting on the *process* of their hands-on experience (Attard 2012), permitting as Tsafos has noted, new understanding in the light of experience (2014: 137). Through participating in a “reflexive process” (ibid) teachers are understood to gain insight from evaluating and conceptualising their actions, co-creating theory from reflection (Schön 1983).

With regard to pragmatic action research in the Hong Kong primary school context, relatively few previous studies have investigated the challenges for teachers in addressing the diverse needs of students through differentiated pedagogy in the context of local Chinese classrooms (Forlin 2010; Wan 2016). Since the 2000s, under several education reforms in Hong Kong (CDC 2001; Cheng 2009; Mok 2006), some elements of action research such as peer teachers’ class observations and the co-planning of lesson activities have appeared in many local schools. Nevertheless, they have not promoted the same emphasis on facilitated reflective inquiry for pedagogical change. Nor have they tended to prioritise the mode of individual teachers’ self-inquiry, such as those action research cases reported by Holly (1989) and McNiff et al. (2005).

To address this point, the design of this project factored in the possibility for teachers engaged in it to have room for self-regulation. They co-worked with me to learn through sharing their experiences related to change (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Moghaddam 2007; Nijihawan 2017; Rauch et al. 2014; Reason et al. 2008; Stern et al. 2014).

3.1.3 Participatory Collaboration

When reviewing the previously mentioned examples of action research, I discovered collaboration to be a common feature, whether that was with between teachers and faculty team members of universities, or departments of the schools or wider organisations, leading to insights being gained from multi-dimension of “reflection-in-action” (Schön 1983). Reason et al. (2008) refers specifically to the value of “participatory” inquiry within action research with significant examples over time including: Denicolo et al. (1990) leading several mature teachers in action research; Hadfield et at. (1993) working with some in-service teachers and Lyle (1996) with student-teachers. Goodnough (2001) led collaborative participatory action research with science teachers, similarly Capobianco et al. (2004) while Altrichter et al. (2005) formed a team with a number of subject-teachers in Maths as well as in Science also Wong (2009). In the 2010s, Hagevik et al. (2012) presented an action research team with twenty student-teachers. Farrell (2013) also co-researched with a team of three English Language serving teachers. Leko (2015) launched a study of lesson adaptation with an English Language teacher to cater for student with diverse learning needs and Nijhawan (2017) conducted the action research project with several high school teachers.

Learning from these studies, this project proposed that the teacher-participants and I would engage similarly in collaborative work through six continuous research cycles. This was linked to the framework already highlighted, focused on *meaning*, *action* and *effect*, in order to obtain usable and relevant outcomes in relation to the identified specific problems:

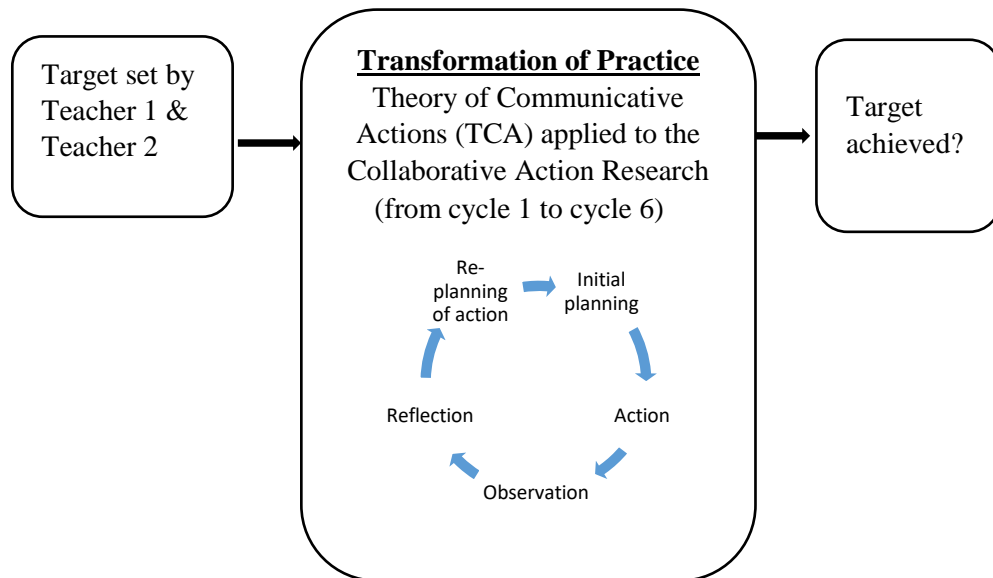


Figure 8: Overview of the Conceptual Framework of Action Research

As depicted in the above diagram, the research design was framed in three parts. Firstly, since I had mentioned the challenges that language teachers were currently dealing with in classrooms (in Chapter 1), I planned to work alongside two language teachers intensively over a period of time, using participatory action research to problem solve in relation to differentiated instruction.

Secondly, the middle part of the diagram represents the process of cycles of action research introduced to investigate and potentially transform the teachers' practice. The full-loop of action research occurred over six weeks as illustrated in Figure 4 (page 23). Vassiliki et al. (2011) undertook a project focused on differentiated teaching for six weeks in a primary school and similarly Hagevik et al. (2012) carried out a similar project focused on reflective inquiry for about four to six weeks with 20 pre-service teachers. Therefore, I decided on the duration of six weeks for my own study, judging a period of six weeks long enough to obtain data capturing evidence of teachers' reflective development.

3.1.4 Role of the Researcher

Being a co-researcher with the teacher-participants, with their agreement I took it upon myself within the study to observe the class, review the teachers' practices with a view to providing feedback that might inform re-plan actions for the next lesson in the cycle. Meanwhile, the teacher-participants performed their teaching as usual in the classroom.

Although I had experience with class observation and teacher appraisal, my role in this study was not as a lesson supervisor but rather as the "co-researcher" (Lomax 1995: 51). Had I been a teacher supervisor, I would have given not only advice for improving student teaching practice but also a grade for assessment. However, in this case I planned to act as a *co-researcher* because this was the action-based inquiry, aiming at helping teachers investigate their classroom practice for problem solving as well as for enhancing teachers' capacity in teacher professional development. As the literature suggests, teachers alone may not be able to understand the "complex practical problems" (Altrichter et al. 2005) they face, requiring a "critical friend" (Day et al. 1993:18) to identify where the problem or difficulty might lie as an insider to teaching language in the primary school but not the actual responsible classroom teacher.

Altrichter et al. (2005) believe that co-working in action research establishes a "dynamic network" (2005:203) to increase communication between participants and researchers when carrying out effective planned actions. Habermas (1984) proposes the theory of communicative actions (TCA) to illustrate how people in the same contextual culture exhibit their "logo" of common language to achieve functional purposes. Reason et al., commend the importance of Habermas' conception to both "analytic philosophy and developments in pragmatism" (2008:132), noting that within TCA, researcher-participants share their experiences, mediate their own thoughts and co-ordinate their action-plans through effective communications. Modhaddam (2007) commends the way in which TCA can empower teacher-participants to learn from each other and to justify the effectiveness of actions through the use of dialogue and Reason et al. (2008) also factored TCA into their reading of action research, given the "new

‘communicative spaces’ it creates in which dialogue and development can flourish” (Reason et al. 2008:3).

Figure 9 (below) seeks to explain the dynamics of TCA that were applicable to the teacher-participants and me when working collaboratively.

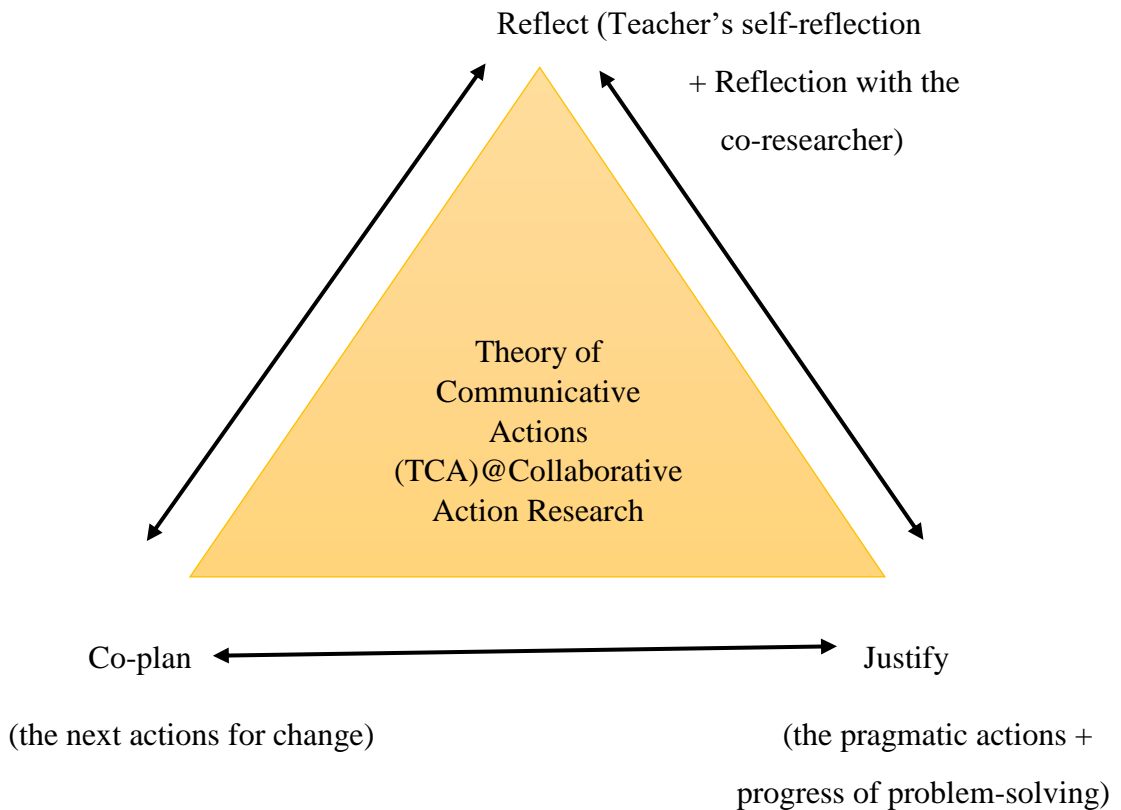


Figure 9: Indicating how theory of communicative actions (TCA) applies to the dynamics of collaborative action research

As labelled in the triangle, once again three action verbs *reflect*, *co-plan* and *justify* represent the core functioning objectives of our collaboration work. Within the continuous six cycles, the two teacher-participants reflected on their thoughts and actions and I reflected on what I observed in their lessons every week. Based on my

class observation experience, teachers tend to finish covering all teaching contents of a lesson in a hurry. Some teachers have shared in the centralised TDPs that if they are unable to cover all of the material in a lesson, they would teach the materials even faster in the next lesson in order to complete the unfinished contents and the new one. While focusing on routine teaching at such the hectic pace, they may be “blind to see” what students’ learning needs are (Farrell 2013:3). Therefore, as the “critical friend” (Elliot 1993) of this collaborative work, I gave constructive feedback to support the teachers. I reviewed what was overlooked in the lesson and what might change for the next action for improvement. I would share some teaching methods of differentiation in order to help children with SEN in the class (Lawrence-Brown 2004; Tomlinson 2014; Knight 2009; Vassiliki et al. 2011). However, I did not attempt to influence the teachers or to require them to do anything – I would not put pressure on them. Instead, I offered advice whenever they needed it for consideration.

In this form of collaboration, my role also helped extend the single perspective of the teacher’s self-inquiry. Although Moghaddam (2007) argued that the subjective view of the research-practitioner was essential in action research, as the co-researcher, I would contribute whatever efforts were required to examine the problem in a more *objective* way. According to Tsafo (2014), subjective meaning is necessary in qualitative action research because it formulates the practitioners’ specific research context. Yet, my role as the researcher would reshape the subjective perception of the teachers in a wider horizon. I considered that the form of collaboration work should be one of the solutions to balance the subjective influence of the teacher-practitioners on the research outcome (Nijhawan 2017).

3.2 Research Methods

As this study centered on action-based inquiry for change, data from teacher-participants’ reflections and reactions are important. I, therefore, planned to collect three forms of data as supporting evidence for the research. As Patton noted, “Qualitative findings grow out of three kinds of data collection: (1) in-depth, open-

ended interviews; (2) direct observation; and (3) written documents” (2002:4). In this study, the three data types were as follows: a) teacher-participants’ reflective journals (written document); b) live-class observation (direct observation); and c) reflective discussion (in-depth, open-ended interview). For details, explanation presented in the sub-sections of the chapter. They were the core data of the research. Initially, the teachers and I identified the classroom problem as the research target because action research aimed at solving problems (McNiff et al. 2011; Reason et al. 2008; Rauch et al. 2014; Stern et al. 2014). According to Punch et al. (2014), “The inquiry deliberately starts from a specific practical or applied problem of question”. Therefore, I created a *target-setting form* as the problem-statement (Appendix 5) for research question 1. Nevertheless, before getting started, I had to find some teachers who were interested and willing to participate in the research.

The Participating School

The research setting was undertaken in the Holy Cross Primary School, which was a combined school from two historical schools in the same district in Kowloon. With a special grant from the EDB, the new school premises were constructed in 2016. It was a standard normal school with 32 classes for primary grades 1 to 6 in the academic year of 2016-17. One of the teachers of the school in the year of 2016, as Teacher 1 (T1), attended the centralized TDP held in a local university where I worked. Because of her positive learning attitude, the class tutor of the TDP recommended her for me to join this study.

In February 2017, I contacted her (T1) and explained about the idea of this research study. As she noted, there were 200 pupils with special educational needs (SEN) were located in the school where, in general, three to four children with SEN were included in each class. The number of pupils with SEN in the school was quite large. As found in the survey (conducted by HKFEW in 2016), 42% of schools generally accommodated 51-99 children with SEN and only 17% of local schools had over 100. Because of such a large number of children with SEN in the school, teachers in the

school face great challenges. I then asked her whether she and her colleagues would like to join my action research project to support teaching pupils with SEN in the school. In order to let her understand more about the study, I sent her my research proposal, which was the prior official document of the University of Bristol (UoB, Appendix 5).

She was kind enough to pass my research proposal to the school principal for his consideration. In a few days, I was glad to receive her positive reply and I had opportunity to talk to him by way of introduction. I explained to him that I had already obtained an approval of doing the research from the university through its established. After that, I got his written consent letter as shown in Appendix 4. At the meantime, T1 replied to me that the vice principal of the school recommended an English language teacher, T2, to participate into this project to participate into the study. Then we made a day of my school visit for I could explain more information about this collaborative action research to the teachers, including my role as a co-researcher (as noted in Section 3.1.4) and the data to be collected as below.

3.2.1 Collection of the Data

3.2.1.1 Teacher Reflection (Diary)

As noted in Chapter 2, teachers' reflection is the key aspect of action research. It enables teachers to evaluate the progress of teaching and provides them with a "mental space" for contemplating problems and solutions (Farrell 2013:72). For example, they can reframe the problem, explore ways to address it and/or decide what is worth doing for improvement (McNiff et al. 2011; Reason et al. 2008; Stern et al. 2014; Rauch et al. 2014). In this study, I also asked the two teacher-practitioners to write their reflection every day (rather than on a weekly basis) because I viewed it as a good habit to incorporate as part of their reflective inquiry. As previously explained in section 3.2.1, the collaborative work was carried out in this study and Habermas's (1984) theory (TCA) was applied throughout the on-going cycles of the research. The two teachers might include what we had discussed after the observed lessons in their reflective diaries. Farrell (2013) remarked the value of teachers' reflection when he reviewed one of the teacher-participants' written journal as below:

I felt that the journal had many roles: (1) it forced me to slow down, observe and reflect. I think this role should not be underestimated; teachers are busy. (2) It allowed me to unpack any emotional baggage be it personal or professional and get beyond it. (3) It identified some topics that could be discussed or explored by other means later. (4) It was an opportunity to reflect upon or synthesize points that came up from classroom observations (in Farrell 2013:72).

Apart from the above four aspects, in this study, as the two teacher-participants searched for possible methods for problem-solving, they might write about the causes and effects of action plans and/or about new perceptions of the problematic situation after the try-out. As such, their reflective diaries were not only a means of self-evaluation but also key evidence for answering research questions 1 and 2. I understood that some teachers considered journal writing was “hard to do because of lack of focus and time, and [because it] needs to be thoughtfully written to make it worthwhile” (Farrell 2013:75). Therefore, in order to minimise the time they spent on writing and simultaneously to maintain the quality of the systematic recording of their diaries, I prepared a reflection sheet (Appendix 7) which contained two parts of content. In Part A, there were ten items adapted from Scheerens (2016) regarding the *class organisation* in four areas: 1) content of the lesson; 2) cognitive activation; 3) classroom management and 4) supportive classroom climate. In each item, the two teachers were asked to follow the guided sentence to determine the degree of effectiveness (1 through 5). In Part B, a blank line was included so that they could write about their adjustment of the next planned tasks or activities. On the next page, the teachers could write freely in the spaces provided if they wished to note some incidents and/or to reflect on certain contents in greater detail.

3.2.1.2 Live-Class Observation

Class observation was used to obtain data and provide answers to research questions 1 and 2. In educational research, observation data serve as the substantial source of

evidence for lesson study (Altrichter et al. 2005). As the researcher is present in the classroom, he/she witnesses almost everything that happens. The input of observers' views extends the understanding of what the teachers consider in their written reflection. In other words, the observation data can justify the "subjective meaning" of a single teacher's reflective data (Moghaddam 2007).

As mentioned in Chapter 1, the diverse learning needs of students are the challenge for teachers in Hong Kong. About 90% of them found it difficult to teach students with SEN and to manage their disruptive behaviour (HKFEW 2015, 2016). The challenges they face are complex and that is why it makes sense to investigate such a chaotic situation. Within the six continuous cycles of live-class observation, I aimed to discover the real contextual problem of student diversity they described. I recognised that as the observer and co-researcher, my observation view of whether the changed actions worked and improved the problem would serve as significant evidence of the success of this action research (Altrichter et al. 2005; Moghaddam 2007). Therefore, I tried my best to report everything I observed during the individual teachers' lessons. I incorporated direct observation as Patton (2002) suggested. In other words, I took notes to record the teaching procedures and interactions between the teacher and pupils during the lesson. Moreover, I took photos of the lesson for evidence. Since I did not employ the quantitative approach in this study, the coding system and/or any exercises of matching the categories for interactions were not used.

3.2.1.3 Reflective Discussion

After each class observation, I held a reflective discussion with the individual teacher-participants on the same day as the interview at the staff room of the school. This was the time for us to exchange views and to justify the effects of pragmatic actions. As the teachers did not want to have video/voice recordings, I took notes for keeping data of our discussion. When the teachers reflected on the taught lesson, they evaluated student learning and the effectiveness of the planned actions. Farrell (2013) has mentioned that teachers, as adult learners, learn from experiences, self-evaluation as well as feedback obtained from others who may offer insights – for TCA (Habermas 1984) functions

within the discussion. I believed even though the teacher-participants would find that their trials failed to help student learning, they had already learned what worked and did not work within and after the reflective actions. McNiff et al. (2011) proclaimed that teachers would generate new theory from a better understanding of their knowledge through continuous reflective inquiry, as they learn what to do (practice) and why to do it (theory). The data derived from the reflective discussion served as proof of what the teachers and I mutually evaluated and innovated for the research evidence. Over the years, studies have shown that reflective practitioners together with co-researchers have produced catalytic and democratic qualitative data for the changed actions during group discussions (Denicolo et al. 1990; Lyle 1996; Hadfield et al. 1993; Feldman et al. 2018; McNiff et al. 2011; Reason et al. 2008; Stern et al. 2014; Rauch et al. 2014; Nijhawan 2017).

In this study, the two practitioners and I made use of the “communicative space” (Reason et al. 2008:3) to reflect and to co-plan the next lesson materials and/or activities to better cater for the diverse needs of students. The data were significant for answering research questions 1 and 2. I hoped they would achieve the aims of this pragmatic study for classroom improvement as well as their teacher professional development (Schulman et al. 2004; Harrison 2005; Lee et al. 2005; Bennett 2011; Farrell 2013).

3.2.2 School visit

On 11th May of 2017, before commencing the study, I had a school visit for meeting with the school principal, teacher-participants and pupils to understand more of the school. Information obtained from the visit could give a source of evidence in the *pre-cycle* stage. From my past experience, while studying my master degree of education, I went to the participating school for a courtesy visit so as to collect data as a trial for research purpose. At that time, I demonstrated the same method of action research in a secondary school and I could apply such the experience to collect data in my school visit this time (in the primary school) as piloting the study for my EdD dissertation.

Data intended to be collected included: a) lesson observation; and b) reflective discussion about the learning needs of the pupils (after class visit). These data helped planning of our collaborative action research – for example in respect of identifying the problems and setting targets for problem-solving (Section 3.1, Section 3.2.1 and Section 3.3). Report of the school visit had been recorded in Chapter 4. During the meeting, the two teachers also gave me information about themselves as well as the class of primary 2D as below.

T1 was a senior teacher of the school, with the position title of SENCO (SEN coordinator). She had been teaching for about 23 years after graduated from teacher college. Her major was Chinese Language and she also got a qualification in teaching Putonghua (Mandarin). She taught Chinese Language of 2D class with 25 boys and girls aged 7 to 8. Followed by the recent language policy, the medium of instruction adopted in the Chinese lesson is Mandarin rather than students' native Cantonese, which makes the lower achievers difficult to follow the teacher's instructions. On that day, she introduced four children in her class who were identified as having special educational needs (SEN). Three of the children, Carson, Kitty and Ben, had a specific learning difficulty (dyslexia in Chinese) and another girl, Yoyo Tam, was diagnosed (by the educational psychologist) as having limited intelligence. T1 said that she did not know the details of Yoyo's assessment. However, she was aware that Yoyo Tam's IQ was slightly below the average but not as low as those children with an intelligence disability. She suggested that we targeted these four children in the action research in order to improve their learning. She shared that, compared with the other four classes (2A, 2B, 2C and 2E) in the same primary 2 level, the pupils of Class 2D were quite good.

T2 was a qualified English Language teacher in the school as she had about 20 years of teaching experience after graduate from teacher college. Her major was in English Language teaching and she also had already attended the centralized TDP a few years ago. She shared her aims as a teacher with me. Specifically, she sought to enhance students' knowledge and to support children's academic and personal growth during

their primary schooling. She enjoyed teaching at the school and believed that the school system for catering for those children with SEN was quite good. She said that, in most of the local schools, there would just be one long break of 15 minutes in the morning. However, pupils of Holy Cross Primary School have their first five-minute break after the first lesson and another 15-minute break after the third lesson in the morning. These two breaks were offered because the school principal considered that pupils might be difficult to maintain their attention span within the three continuous periods. In particular, children with SEN needed more break-time to re-energise so that they could re-focus on their lessons. As the well-experienced teacher, T2 had a clear mission in regard to her teaching. She remarked that with the increasing number of pupils with SEN in the school, she would like to learn more about teaching strategies and skills to meet pupils' diverse needs in order to develop herself more professionally.

On that day, I explained the aims of the study as well as the action plan in details with the two teachers as the table shown below:

	Co-action Plan	Remarks:
Aims of the study	Improving the problems that the teachers faced in the inclusive classroom – application of the learnt differentiated teaching to address diverse needs of pupils	Action-based inquiry to be carried out in class 2D
Getting started	Class visit (pilot study) - identifying the problems in the inclusive classroom as the target set for the study	Target setting form (Appendices 5 & 6) – the teachers informed the specific problems needed to be improved
Data to be collected	<ul style="list-style-type: none"> - Teacher Reflection (Appendix 7) - Live-Class Observation (at P.2D classroom) - Reflective Discussion 	-Reflections and re-actions to be taken for improving the identified problems

	(at the staff room of the school)	
Ethical considerations	<ul style="list-style-type: none"> -A consent letter obtained from the school principal -Protection of the teachers’ safety and privacy in their classroom teaching - Partnership of the collaborative research with mutual respect and rapport building with the teachers (as explained in Section 3.4.2 & Section 3.5) -Protection of the pupils’ information (as explained in Section 3.5 Ethical Issues) 	<ul style="list-style-type: none"> - A consent letter signed by the school principal (Appendix 3) - Official document of the University of Bristol, UoB (Appendix 2)
Duration	About six weeks/ six cycles depending on lesson-arrangement to be confirmed for the pre-exam and post-exam periods	The proposed 6-week of research period was explained in Section 3.1.3 - with reference to Vassiliki et al. (2011) and Hagevik et al. (2012)
Reporting of research	<ul style="list-style-type: none"> -All the collected data to be reported to the school and the teacher-participants -Report of the research was for the study at UoB - writing the dissertation purpose only (as explained in Section 3.5 Ethical Issues). 	Official document of the UoB (Appendix 2).

Table 2: Showing an action plan of the study

3.3 Data Analysis

After completing the six cycles of action research, I compiled the collected data of teachers’ reflective journals, class observations as well as the reflective discussions. I stratified the six layers of the “thick description” (Tracy 2010:843) to determine whether the pragmatic actions achieved the theme of research project and therefore, the

approach of “framework analysis” was adopted (Rabiee 2004; Menter et al. 2011; Yin 2003). Following Braun & Clarke (2006:84), a “theoretical” approach was employed to undertake thematic analysis in this study. They describe the “theoretical” approach as “analyst-driven” (ibid), in which specific *features* of a particular form are identified, and illustrated data with interpretation of underlying *meaning* of “assumptions” and “conceptualizations” (ibid). These are key for analysing the theme of the study – action of the teachers’ change for improving classroom practice in the inclusive context of Hong Kong school environment (Section 1.3 and Section 2.3). In saying this, the *logic* of analysing 3-form of data of this study should be in line with the *concept* of action research system (Section 2.2) as well as the *rationale* of pragmatism (Section 3.1) at interpretative or latent level (ibid). That said, data analysis of this study should stress on three things: **action**, **meaning** and **effect** as the three big intersected circles presented the *rationale* of pragmatic action research in Figure 7.

At this point, clarification has to be made that the collected data derived from this inquiry was not static but *dynamic*, – that is to say it embraced *change* in action in the complexity of problematic classroom – because action research is for change (Hirsh 2000; Townsend 2014). That said, this study is *not for information* (understanding the teachers’ views via “data-driven” approach) but *transformation of practice* (effect of change for improving problem, see Section 3.1.3 and Figure 8). *Change* is the code of action (within the action research system) so as to bring out *meaning* of *effect*. As Lorino emphasizes, in doing action research, “action is meaning and meaning is action” (2018:71). That means, analysing *change in action* of the teachers as well as the pragmatic *effect* on teacher development, through “analyst-driven” approach (Braun & Clarke 2006:84), is the way to achieve the purpose of the study: for action research improving classroom practice for professional teacher development (Section 1.3 and Section 2.3).

For this reason, Lofthouse et al. (2016:527) articulate that action research is for “pragmatic workability”. Outcome of “improvability of practice” (ibid) is the focus.

They elicit meaning (action) and effect of collaborative action research in relation to three things (Lofthouse et al. 2016:526-529) that make sense to analyse data of this study: a) “Authenticity” – data of collaboration work collected from the real school context provided “evidence-based reflection” for improving the situational problem at practice level; b) “Inclusivity” – dialogues during our reflective discussion included different perspectives that showed working ethics, and significance of the change for “analytical framework”; c) “Co-construction” – effect of the collaboration work created new knowledge within the “changing context” of the cyclical system for professional teacher development. These three points highlight the importance of 3-form of data to be analysed for realizing the theme of the study. That is, how the pragmatic action research would address problems in the context of inclusive classroom (Section 2.2, Section 2.3, Section 3.1 and Section 3.2).

Hence, taking into consideration of the “theoretical approach” suggested by Braun & Clarke (2006), thematic analysis of this study should be focused on interpreting the *authentic* data (Lofthouse et al. 2016) within the six research cycles. I followed a 6-phase guide provided by them (Braun & Clarke 2006:86-93) for analysing the collected data (via theory-based approach). As in Phase 1 (Familiarizing yourself with your data), I would gather all 3-form of authentic data (ibid) collected within the framework as the overview conceptual diagram in Figure 8. As for teacher reflection, T1 and T2 would keep their diaries for six cycles. I would check through their written notes in both Part A and Part B (see Appendices 7-10). For data of class observation and reflective discussion, I would have to transcribe verbal notes into written report as Braun & Clarke (2006) suggested to do.

Besides, in this phase, I had to determine where I should start to compile relevant data in order to evolve thematic analysis (ibid). Since T1 and T2 had set their targets to improve teaching practice in the beginning of the study, identification of problems they faced should be the starting point. I would familiarize myself with the data generated with the framework in relation to the target set for the purpose of this study (ibid).

Phase 2 (Generating initial codes) – Based on the “theory-driven” approach, initiating codes of action and pattern would be followed by Lewin’s (1946) action research model explained in Chapter 2. As Feldman et al. (2018:308) illustrated his concept of “cyclical process”, the initial codes should consist of 3-element of the spiral form of pattern as: planning, action and results of action. The first code of “*planning*” (Lewin 1946) was the essential step to carry out the research study. That was the reason I arranged a day of school visit to meet with the school principal and the teacher-participants for preparation. Data concerning this code included: a) goals of this study; b) targets set by the teachers; c) duration of the research period for collecting the 3-form of data; d) ethical considerations; and e) report of the research. For details, see Section 3.2.2 with the list of planning in Table 2.

The second code of “*action*” (Lewin 1946) referred to action of the teachers made for improving the identified problems of the classroom. That said, action was about how the teachers applied the approach of differentiated teaching to address diverse learning needs of pupils at practice level. This was the core data needed to be interpreted by the “theoretical approach” (Braun & Clarke 2006) for answering research question 1 (Section 1.3 and Section 3.1.1).

The last code of “*results of action*” (Lewin 1946) was about *impact* of the changed action taken in this study. The code would illustrate the pragmatic *effects* on how the teachers changed to use the adaptive teaching to get the results of the expected outcomes of improvement. In doing so, it also helped answering research question 2 of the study (Section 1.3 and Section 3.1.1). For details, see data analysis in Chapter 5.

Phase 3 (Searching for themes) – While compiling the collected 3-form of data, “different codes” at different levels of change and effect might be identified. I would

use tables and statistic charts to *compare* the data for showing the theme of improving the problem of classroom practice.

For example, to analyse data of the teachers' reflection, patterns of meaning of action could be drawn from interpreting frequency levels of lesson evaluation from teachers' diaries as noted in Appendices 7-10. Change in action tended to be noticeable from Cycle 2 onwards as the problems should be identified in Cycle 1. That said, frequency levels of lesson satisfaction (of the teachers) might be found low - *before* the change happened in Cycle 1 (as problems of classroom practice existed). *After* started this collaboration action research, the teachers tried to make change (from Cycle 2). So, the frequency levels of lesson satisfaction would become high if they reflected that the problem improved. Differences in frequency levels from low to high indicate effect of change in action, which is the *meaning* of patterns that inform improvement on classroom practice by *comparing* the data before and after the teachers' made change in this study (see data presented in Chapter 4).

Phase 4 (Reviewing themes) – I would refine the data of action in line with the application of differentiated teaching (Tomlinson 2001, 2014) that the teachers had already learnt in head during the training of TDP. Therefore, analysis would put emphasis on “process” and “product” (ibid) collected throughout the system of the six research cycles. In doing this, meaning and effect could be interpreted for constructing the theme of this study with the concept of Lewin's model (in Feldman et al. 2018:308).

Phase 5 (Defining and naming themes) – I would define what actions the teachers applied (following the principles of differentiated teaching) for achieving the set theme of this study. For instance, the teachers would adapt their teaching materials by giving an “entry point” (ibid) to include the low achievers for completing the set tasks. Besides, adding new topic contents and varying activities to arouse interests of pupils were also

the re-planning of actions of applying the learnt differentiated approach to classroom practice. Detailed interpretation of data would be found in Chapter 4 and Chapter 5.

According to Menter et al. (2011), interpreting qualitative data for thematic analysis includes procedures of “examining, categorizing and tabulating and recombining the evidence to address the initial goal of study” (2011:6). As the focus was on transformation of practice of the teachers, while examining their change in action from Cycle 1 to 6, I simultaneously maintained a track record of data for evidence. I used a table to list out the two practitioners’ changed actions and to indicate the effect of the transformed practice so that readers can see the extent to which the teachers had addressed the complex problem of the diverse learning needs of pupils. In alignment with the conceptual framework of this study, I divided the analytical discussion into two main parts. The table below shows the thematic analysis of the study.

Source of Data	Two-part of analysis for the study	
Evidence obtained from: - Teacher Reflection (Diary)	Part 1: <u>Change in action of the teachers</u> -application of differentiated teaching to address diverse learning needs of pupils - actions taken for improving their identified problems	Answering research question: 1
- Class Observation - Reflective Discussion	Part 2: <u>Effect on teacher development (TD)</u> - achievement of the government’s principles of TD as: -(a) enhanced cognitive domain (perception/knowledge) - (b) enhanced affective domain (attitude) - (c) enhanced psycho-motor domain (skills)	Answering research question: 2

Table 3: Showing the thematic analysis of the study

The above table illustrates the structure of thematic analysis which includes change in action of the teacher-practitioners in Part 1. That is, application of differentiation teaching to address diverse needs of pupils. In Part 2, it contains analysis of how these changed actions improve the problems, which is effect on teacher development. As mentioned, in analysing the collected data in Part 1, interpretation of *code* and *patterns of meaning* lies into a set of on-going cyclical actions including teacher reflection (diary), class observation, reflective discussion as well as re-planning of action for the next cycle (see Section 2.2.2 and/or Figure 1 and Figure 4).

In respect of teacher development, Krainer (in Rauch et al. 2014) suggests four aspects of measurement: action, reflection, autonomy and networking for analyzing the authentic data as in Part 2. The details are as follows:

[1] action: the attitude towards, and competence in experimental, constructive and goal-directed work; [2] reflection: the attitude towards, and competence in (self-) criticism of one's own actions; [3] autonomy: the attitude towards, and competence in self-initiating, self-organizing and self-determined work; and [4] networking: the attitude towards, and competence in communicative and cooperative work with increasing public relevance (in Rauch et al. 2014:29).

Although the description of these four types of actions and attitudes were clear, I decided to re-organise them into the three categories of cognitive domain (knowledge), affective domain (attitude) and psycho-motor (skills), as shown in Table 3, for a more holistic way to analyse teacher development.

Phase 6 (Producing the report) – Having gone through the process from Phase 1 to 5, I would write up the report in this final stage. Presentation of the findings would be displayed in Chapter 4 and detailed discussions on thematic analysis would be noted in Chapter 5.

3.4 Limitations

3.4.1 Research data

As Feldman et al. (2018) mentioned, action research has been popular for fifty years because it helps effectively enhance professional practice. However, criticism and limitations have been noticeable since recent decades (Moghaddam 2007; Hope et al. 2003; Tsafos 2014; Reason et al. 2008). The critique is mainly about action research conducted in small scale of self-inquiry that tends to be subjective for proving and generalizing theories from the limited number of cases. However, professionals who implement action research do not aim at theorizing but improving the problems they face in reality (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Reason et al. 2008; Stern et al. 2014; Rauch et al. 2014). For this issue, I noted my argument in detail in Chapter 6, Section 6.3 (Limitation).

Concerning about the validity and reliability of the research data, the two teachers participated into this empirical study of action research paid efforts to think, to plan and to write all through the process of reflections. As the research practitioners, they showed their authentic data within the real context of classroom. What they wrote in the reflection diaries (Appendices 7 and 8) exhibited not only the situation of the classroom, but also their dynamic changes in thoughts and actions in developing their professional teaching. Over the years, practitioners of action research have produced their data of self-inquiry in which they present their reflective journals as substantial evidence for the research (Hall 1992, McNiff et al. 2005 and Stern et al. 2014). I believed the practitioners' authentic data should be trustworthy because they were the persons within the context of the situation and they had the ownership to judge their achievement (Stern et al. 2014). For example, McNiff et al. (2005) showed their case of Ms Gong who participated in the mode of self-inquiry of action research. She noted in the end of the project that, "I believe I am justified in claiming that I have helped my two students to develop their confidence" (McNiff et al. 2005:84). In her saying, she determined confidently her success in enhancing her students' confidence in learning. Hence, I intended to display such the conscious mind of bringing the trustworthy

outcomes of action research to readers. I planned to talk with the four children with SEN as well as some high and middle achievers of 2D class to see how they felt the changes of the two teachers after the six weeks of research cycles. In doing so, the triangulation of evidence-based data were supported by the teacher-participants' reflection, the researcher's observation as well as the pupils' views.

3.4.2 Partnership

Although the TCA applied to the action research factors into the collaborative research study, the relationship between the teacher-practitioners and me, as the co-researcher, affects the consequences of the investigation. I understand that a good rapport between two parties is key to the success of an action research project. Hence, a friendly and trustful relationship needed to be established when we started the research. As the university lecturer, I am aware that when teachers would feel anxious about being observed by others in the class. Particularly in the problematic inclusive classroom, teachers may be embarrassed to expose their teaching difficulties in front of observers. I knew that my responses and opinions could support the two teacher-practitioners or could trigger them to break the partnership. As Altrichter commented, "This is hardly possible without communication in an atmosphere of trust" (2014:9). Being the "critical friend" (Elliot 1993), my participation actually "becomes almost an integral part of the data collecting technique" (Denscombe 2007:298). Served as the technical instrument (ibid), my role as the action researcher can limit the reliability of the consequences of pragmatic actions. That is why, in science research, positivist researchers distance themselves from the situational environment in order to obtain the absolute, reliable results from experiments (Greenwood et al. 2007). However, in this participatory research study, as Denscombe (2007) noted, would the empirical effect be different if another researcher replaced me or was involved in the practice?

Since the two teacher-practitioners, T1 and T2, were mature teachers with over 20 years of teaching experience, they knew what they were doing in the research. As they had

also attended the SEN in-service training programme, they had already learned some of the strategies (for catering for the diverse needs of pupils). Before participating in this project, they also shared that they had learned about the idea of action research in their formal teacher education. Therefore, they had prepared themselves to try out the pragmatic action research at hand. In other words, they would not entirely listen to me if they did not think my opinions would make sense to them. Having said that, if they worked with another co-researcher, they would also engage in the reflective inquiry in which they would have the same opportunities to transform their actions for meaningful effects. The point was whether the teacher-practitioners had their self-autonomy for change. As T1 and T2 committed to this study, they should be the hard-working teachers and the open-minded persons who were willing to co-work with me. I certainly would be cautious to maintain a good relationship to empower them for the success of this action research project.

3.5 Ethical Issues

Before started this study, I had already completed all of “Ethics Procedures” of the University of Bristol set by the Graduate School of Education (SoE) in May of 2017. The “Procedures” covered the ethical regulations listed by the British Educational Research Association (BERA) for participants to take responsibilities of doing educational research. Students of the University have to realize these procedural instructions as noted in the Ethics Form (see Appendix 2). I had studied thoroughly the research guidelines (found in the BERA website) including the five items of ethical issues as the points stated from -a) to -e) in the next paragraph. While preparing my research proposal, I obtained advice from my former supervisor Professor Justin Dillon to take account of the process of Research Ethics Proposal Review because all research activities must be assessed by the Research Ethics Committee of SoE for approval.

As followed the “Ethics Procedures”, I discussed the proposal with a professional fellow in my working university in October 2016. We noted several things to do for carrying out the research study as below: (see Appendix 2)

- a): arrangement of a school visit – for meeting with the school principal and the teacher-participants to explaining the purpose, methods and ethical responsibility;
- b): a consent from the school principal, teachers concerned, and parents as pupils of the class would be involved in the study;
- c): confirmation of methods of data collection – for class observation, note-taking for teacher-pupils interaction would be basic. If photo-taking or video-recording would be agreed by the teachers, children’s faces would be blurred or covered up. The real Chinese names of the pupils would be kept anonymous. Upon the receipt of consent from the school principal, their nicknames in English as well as the school name would be used in the report.
- d): confidentiality and data storage – all data should be strictly confidential for only research purpose of my EdD dissertation. I would not disclose anything for other purposes. If anyone in the school or professionals of other academic organizations would be interested in getting known about this study, they should contact the school principal for information.
- e): As the co-researcher, I should build up a trust relationship between the teachers and I so that we could be able to work out on-going reflective cycles for improving classroom practices. For details, see the form of document as Appendix 2.

In early February of 2017, after obtained a positive feedback from my former supervisor, I tried to contact T1 for the Ethics Research Proposal. I learnt that in September of 2016, the beginning of academic year (2016-17), parents of their school were informed that the school would carry out a number of research activities initiated by different non-government organizations, local universities as well as EDB. So, they had already signed for agreeing that they would let their children participate into any research projects within the whole school year. Therefore, the assent from the pupils’ parents had been obtained and I was suggested to get a consent from the school principal only for my own research study in the University of Bristol. Thereafter, I contacted the school principal and he was kind to agree that I could carry out the study

in the school. He also gave me a permission to use the school name for writing the report. A few days later I received his written consent as shown in Appendix 3.

With reference to Research Ethics Proposal Review Process, I had to send these documents to the Research Ethics Proposal Review Committee of SoE for obtaining approval before launching my research project. I then followed the instructions as displayed in page 1 of the Ethics Form (Appendix 2) to reach the Online Research Ethics Management System (OREMS) – accessing the ethics tool for approval application. The system contained several questions that I was required to answer. For example, I had to estimate the research duration with the start date. Meanwhile, I declared that my research did not involve medical device, NHS patients' data or another ethics committee related to racial or ethnic origin. According to the regulations, my ethical application was not required to be reviewed by other groups like ESRC or IRAS for external reviews. After submitted all documents via the OREMS, I got the official ethics approval a few days later and then I started the research project in May of 2017.

For this action research, it demonstrated endeavors of the teacher-participants and I to co-work for improving problems in the complex environment of today's classroom. There was no position power in our collaboration work as Greenwood et al. specified, "action research democratizes the relationship" (2007:4). The co-research work involved our mutual respect and trust that were key ethical factors for success. It was because without sincerity and commitment, we could not work together for the continuous reflective discussions and critical judgements for change (Sharp 2014). Each of our actions for the research project bore ethical responsibility. As the researcher, I was aware of the "integrity" of doing this qualitative reflection-based inquiry (Punch 2009). Bond has stated that, conducting educational research, "...requires an active sense of ethical responsibility best supported by a commitment to openness and accountability throughout the research process" (2004:5). For the matter of ethical responsibility, I was aware that I needed to protect the personal

information of the teacher-participants for the sake of confidentiality and all the above considerations.

Summary of the Chapter

This chapter presents the conceptual framework of the study. In explaining the rationale of pragmatic methodology (Section 3.1), a justification of the collaborative action research method is provided. Section 3.2 introduces the research setting in a local primary school. Two in-service experienced teachers, T1 (Chinese language teacher) and T2 (English language teacher), agreed to participate in the full loop of action research for six cycles to attain the practical *effects* (Peirce 1878; James 1904; Dewey 1931). Section 3.3 includes a table to illustrate the thematic analysis of data on classroom practice as well as professional teacher development. Moreover, Section 3.4 discusses the limitations of research data and partnership in this collaborative action research. The ethical issues are noted in Section 3.5.

Chapter 4: Presentation of the Collected Data

This chapter reports findings on the professional reflections of two teacher-practitioners, obtained from the six full-loop cycles of collaborative action research. Three sets of data are included: teachers' reflective diaries (Section 4.1), live-class observation (Section 4.2) and reflective discussion (Section 4.3). Analysis of this data will follow in Chapter 5.

As previously argued (see Chapters 2 and 3), the aim of action research is to bring positive change to professional practice. Therefore, in presenting this data, there is a focus on effect, that is the transformation of the teachers' practice through this form of professional development as noted previously in the review of literature. The data obtained from the six full-loop cycles of this collaborative action research are detailed in the following sections.

4.1 Teacher's Reflection (Diary)

As is often the case in action research (e.g. McNiff et al. 2011), T1 and T2 engaged in this study by keeping reflective journals to evaluate their lesson effectiveness. The data in the reflective diaries contained two parts: Part A was the quantitative data of the teachers' ratings of lesson evaluation, in which they used 5 levels of satisfaction to reflect systematically for four aspects of "teacher effectiveness" as suggested by Scheerens (2016). Part B was the qualitative data of the two teachers' reflection in writing. Appendix 8 and Appendix 10 detail records from the diaries. The following paragraphs integrate both forms of data to justify the claim that by doing action research, teachers both investigate their action and re-plan new actions focused on improvement, i.e. "reflection-on-action" (Schön 1983) for change.

As for T1, she recorded her first day of reflection on 15th of May, a few days after my school visit on 11th of May 2017 (as the day of pilot study), while T2 began on 18th of May 2017, the first day of Cycle 1. Both the teachers kept their reflective diaries until 22nd of June 2017, the last day of Cycle 6. The total number of entries of T1 and T2

were 177 and 154 respectively, in which different numbers of entries were found because firstly, T1 started a few days before T2 did. Secondly, they taught different subjects and had different teaching time-periods of allocation each week. Therefore, their entries of every day reflection were not the same during the six research cycles as the summary table shown below:

	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Total number of entries
T1	29 + 20 (pilot/preparation week)	28	40	0	50	10	177
T2	50	35	19	0	40	10	154

Table 4: A summary of T1's and T2's entries of reflective diaries

The table above summaries the total number of the two teachers' reflection data as recorded in Part A of the reflection sheet (see Appendix 7 and Appendix 9). For further analysis, the figures below display 3 sorts of data for *comparing* the similarities as well as differences between the two teachers before and after carrying out action research as:

- a) the overall landscape of 5 levels of satisfaction for lesson evaluation;
- b) the lowest frequency level of lesson effectiveness indicating the classroom problems existed when action research just started in week 1;
- c) the highest frequency level of lesson effectiveness showing the problems improved and the sustained adaptive teaching made in week 5.

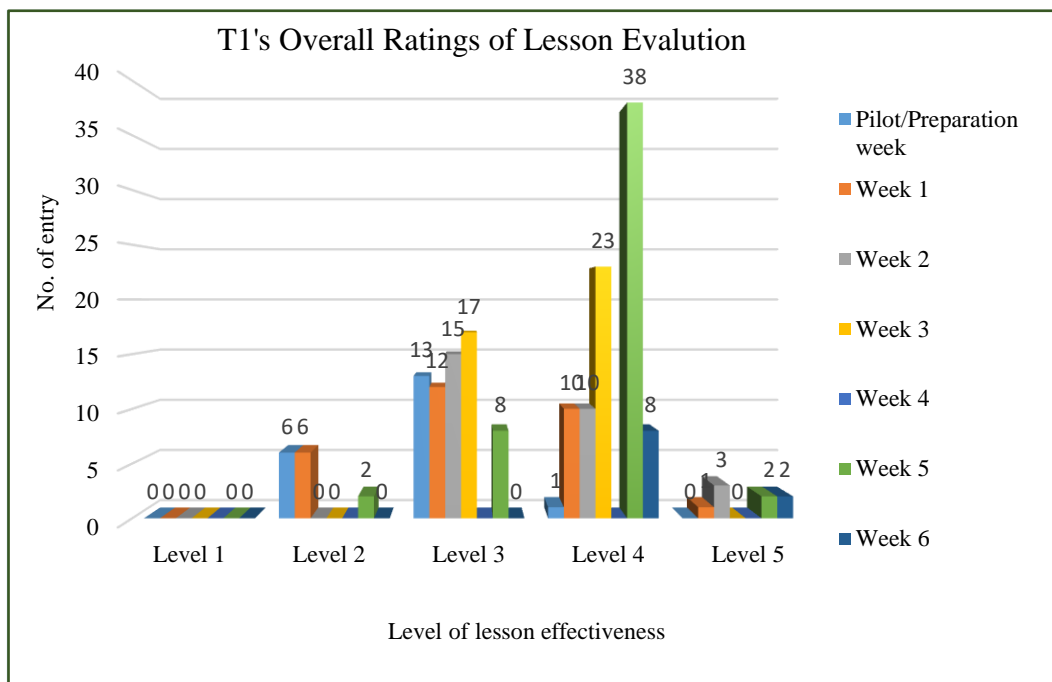


Figure 10 – showing T1's overall ratings of lesson effectiveness in the six research cycles as recorded in her reflective diaries

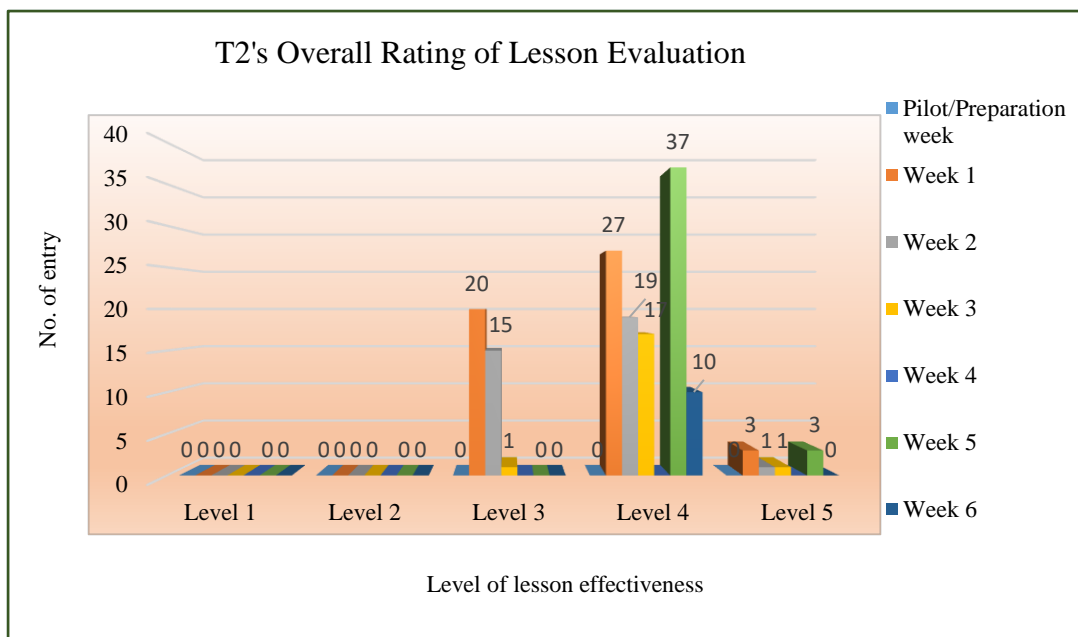


Figure 11 – showing T2's overall ratings of lesson effectiveness in the six research cycles as recorded in her reflective diaries

The above two figures show the overall views of lesson effectiveness of the two teachers' reflection within the six continuous research cycles. In Figure 10, it shows T1's ratings as found in her reflection sheets ranged from Level 2 (lowest) to Level 5 (highest). Level 4 was the highest frequency level, with the value of 38, noted in week 5, and her highest Level 5 of lesson effectiveness was found in week 2, week 5 and week 6. Her lowest level of lesson effectiveness was at Level 2 with frequency value of 6 which reflected that her classroom problem appeared in week 1.

Compared with T1, T2's lowest rating in week 1 was at Level 3 with frequency value of 20. Her highest frequency value of 37 at Level 4 was also found in week 5 as Figure 12 displays. T2's overall ratings of lesson effectiveness within the six cycles ranged from Level 3 to Level 5. Although there is one degree of difference between the two teachers' lowest level of satisfaction in week 1, it justifies that action research begins from the "starting point" of individual teachers' problematic situations (Capobianco 2004:49). Because of that, they intended to "develop a plan of action" (ibid) for improving problems of teaching practice as the statements written in the target-form (Appendix 5 and Appendix 6).

As Tomlinson (2014) mentions, teachers in the multi-ability classroom face different challenges because students are different and their learning needs are diverse. That said, T1's and T2's lowest levels of lesson effectiveness found in week 1 revealed pupils' diverse needs were not yet addressed. They still faced practical problems of classroom management even though they had already learnt differentiated teaching in TDP some years before. For this reason, they joined this action research to try out Schön's (1983) principle of "reflection-on-action", in which they examined their classroom problems and during the process of self-reflection, they were searching for solutions to solve their identified problems as set at the beginning of this study.

Although in the first day of reflection there was no written statements found in Part B of the reflection sheet, T1 and T2 thought of adopting some differentiation strategies that they had learnt during TDP while we evaluated together the observed lessons on that day in Reflective Discussion 1. Within our co-reflective discussion, we planned to adapt some teaching materials for the lessons that followed. In the next day, on the 19th of May, T2 noted that, **“They understood the context of one of the paragraphs clearly and got much information from other groups. They cooperated well”**. Her writing expressed positively, right straight after her trial of the adapted strategies we co-planned the day before. She appreciated not only the *outcome* of what the pupils learned in respect of the subject content, but also the *process* of how well they worked together in groups. That means she started to examine (in her reflection) how pupils, with different abilities (including those children with SEN in the class), learned about the “content” and “process” as Tomlinson (2014) proclaimed the principles of “differentiated classroom” (ibid).

What significance of such data of reflection is that T1 and T2 have produced substantial evidence not at once but every day during the six cycles - that they had room for reflecting their taught lessons, aiming to improve their classroom problems. As mentioned in Chapter 1, over 90% of local teachers face problems of teaching in the inclusive classroom (HKFEW 2015). Among them, 79% had already attended the TDP for learning about Tomlinson’s (2001, 2014) differentiation model to address problems of student diversity (including teaching children with SEN in a normal classroom), but not all of them could have room for self-reflection so as to search for ways for problem solving. In saying this, the frequent ratings of lowest levels of lesson effectiveness of T1 (6) and T2 (20) in week 1 were evident that their classroom problems did exist. In other words, this is the starting point of this study and it justifies what McNiff et al. (2011) specify that action research is for improving teaching practice. Teachers cannot make improvement unless they have room for “reflection-on-action” (Schön 1983) and make “intelligent actions” continuously for change (Dewey 1938). That was the reason for engaging in this spiral form of action-based inquiry for the continuous six cycles.

Once they carried out this action research, they tried to apply the learnt strategies of differentiated teaching to help pupils learning better.

In week 2, both teachers made notes in Part B of the reflection sheets. T1 remarked that,

Pupils were involved in the game of competition. They evaluated their writing answers among themselves that aspired their thinking opportunity, including Yoyo (reflection on 25th of May).

As such, she evaluated that the differentiated strategy of splitting the task into small steps was effective for pupils' learning. She was glad to find that even for the child with SEN, Yoyo, who usually was unattended in the task, could now participate into the activity.

Similarly, T2 also adapted her teaching and gained positive outcomes that she observed children's achievement in learning during week 2. She expressed her satisfaction in writing below:

Spelling competition between groups...They are able to spell the target vocabularies items (reflection on 23rd of May).

Pupils are able to tell the simple time _____ o'clock and know the hands [the short and long time indicators] **of the clock** (reflection on 25th of May).

They understand the meaning of the dialogue between Santa and the boy. So they can do their homework (reading exercise) (reflection on 26th of May).

These data of the two teachers' reflective diaries in week 2 informed that they found this collaborative action research worked in such a way that they could try out differentiated teaching to improve pupils' learning. This was because they practically

made change in teaching. As Hammond (2013) says, action research is for change. Therefore, since week 2, the two teachers have continued making changes in their classroom teaching. Then in week 5, T1's and T2's highest frequency level of lesson effectiveness was reflected at Level 4. The figures below show the distribution of their high frequency Level 4 for the 10 items they rated in week 5.

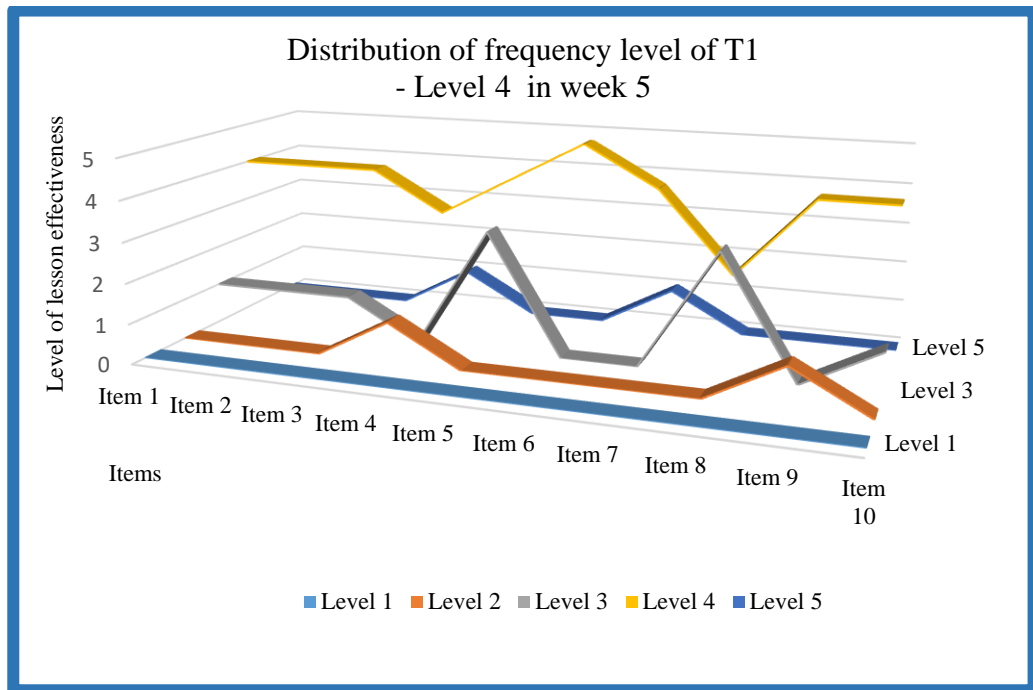


Figure 12 – showing T1's distribution of high frequency at Level 4 for 10 item of lesson effectiveness in week 5 as recorded in reflective diaries

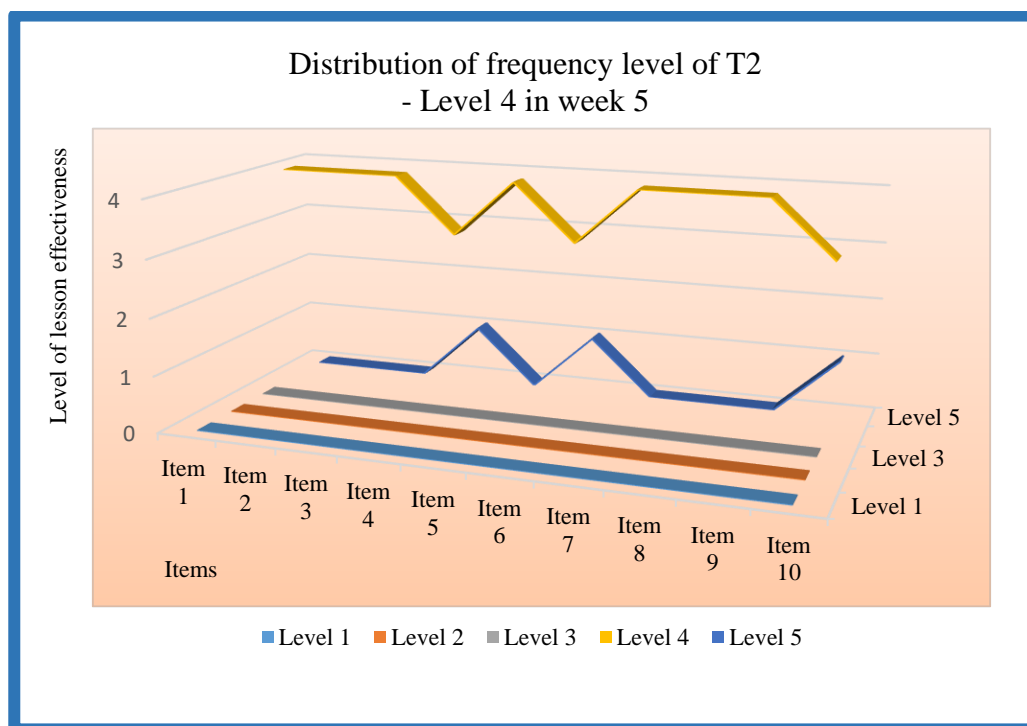


Figure 13 – showing T2’s distribution of high frequency at Level 4 for 10 items of lesson effectiveness in week 5 as recorded in reflective diaries

The above two figures illustrate the same degree of the two teachers’ highest frequency Level 4 (as in the yellow line with the value of 4) for all 10 items of lesson effectiveness in week 5. Particularly, items no. 5, 6 and 7 (in respect of classroom management) were recorded in both teachers’ reflection sheets at higher frequency level than the others. In fact, ratings of other items like no. 1, 2, 3 and 4, which were about subject contents and pupils’ cognitive learning, were also recorded at high Level 4 and even the highest Level 5 from both teachers.

To compare at the beginning of this study, the two teachers found their lessons dissatisfactory in week 1. The figures below display the distribution of their frequent ratings at the lowest levels of lesson effectiveness in regard to the same 10 items.

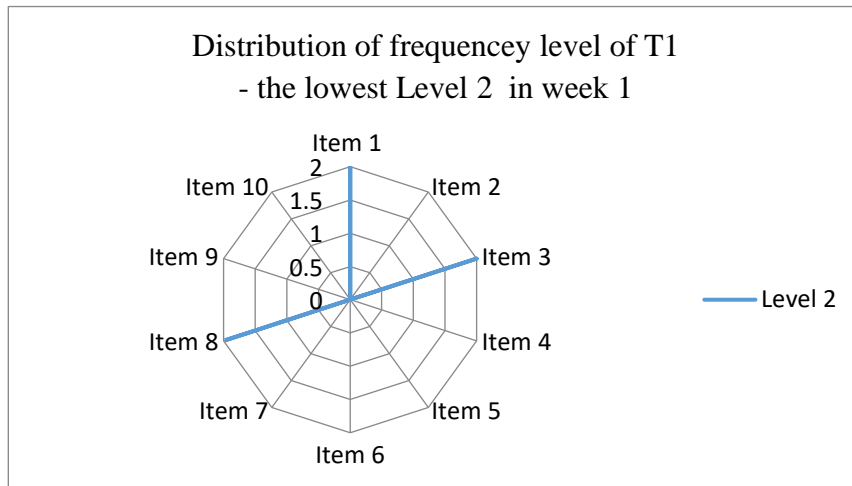


Figure 14 – showing T1’s distribution of frequency at Level 2 (the lowest)
for 10 items of lesson effectiveness in week 1 as recorded in reflective diaries

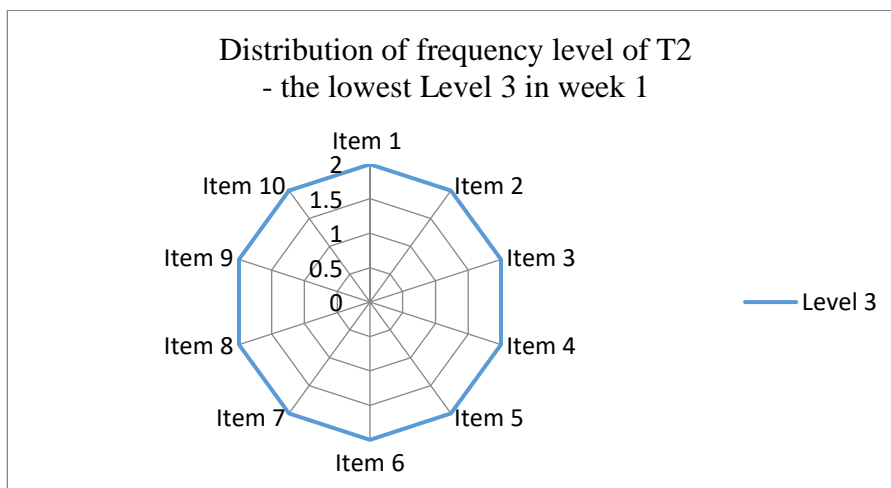


Figure 15 – showing T2’s distribution of frequency at Level 3 (the lowest) for 10
items of lesson effectiveness in week 1 as recorded in reflective diaries

The above two figures show the distribution of frequency levels of the same 10 items rated by the two teachers in week 1. Figure 14 indicates distribution of T1’s frequent

lowest level of ratings (Level 2), in which zero value appeared in the items related to classroom management (items no. 5, 6 and 7), pupils' cognitive learning (items no. 2 and 4) and support of learning climate (items no. 9 and 10) in week 1. Figure 15 displays distribution of T2's frequent lowest level of ratings (Level 3) for all 10 items in week 1. In reviewing the highest frequency level of lesson effectiveness (at Level 4) for the same 10 items in week 5 (as shown in Figures 12 and 13), both T1 and T2 had the same value of 4 – that there were 2 degrees in difference between the highest and lowest value of frequency levels within the six research cycles. That said their identified problems of classroom management (items no. 5, 6 and 7) as well as teaching approach (items no. 1, 2, 3 and 4) they reflected in week 1 had been significantly improved at a highly satisfactory Level 4 in week 5 according to their evaluation.

Having said that, the above data was the *authentic* proof of achievement of the teachers as they made statements for setting their two targets at the beginning of this action research for improving target 1: teaching approach; and target 2: classroom management (see Appendix 5 and Appendix 6). Hope et al. (2003) articulate that participants of action research owe “authenticity” of how it works for problem solving. This is because they are the teachers of the class who can identify the classroom problems existed. Correspondingly, Hammond (2013) stresses that teachers engaged in action research can make “professional judgement” for discerning the problems improved. Like those examples of action research reports as cited in Chapters 2 and 3, T1 and T2 of this study substantially kept their reflection every day for six weeks and demonstrated the process of self-regulation for improving their teaching practice. As a result, they gained the positive outcome of classroom problems improved and reflected at a high frequency rating of Level 4 as shown in the above figures. Their reflections and reactions justify Dewey's theory of inquiry (1938) that on-going reflective cycles in action research enables teachers to make change for improvement.

Apart from their ratings, there were also qualitative data of written diaries found in Part B of the reflection sheet as the *authentic* evidence for their achievement of this study (see Appendix 8 and Appendix 10). For instance, T1 noted the improved learning situation in week 5 that,

In the process of Q and A, pupils are able to react properly. They apply deep thinking for the analysis of the passage. I should re-set the learning objectives so that they could have more content analysis—for example, which animals are the smallest? How do they pass through the river? (reflection on 16th of June).

In her writing, she expressed her appreciation of pupils' good involvement and achievement of lesson objectives. In addition, she could recognise some pupils' high level of thinking ability. In her process of "reflection-on-action" (Schön 1983), she attempted to further adapt her adaptive teaching to address children's diverse learning needs in regard to their different abilities and "readiness" as Tomlinson (2014).

Furthered in week 6, T1 prepared various teaching materials and activities to make learning more interesting. She reflected in writing that, "**Through drawing, pupils try out another way to present their answers. This benefits the different abilities of children**". In the other days of the week, she continued to adapt lesson activities like playing video clips of poems and songs. She wrote a few lines in her diary:

Pupils performed well in learning sentences, and I asked different levels of questions to enhance their thinking. They had activities of role-play and drawing. For those who cannot write the Chinese words properly, I allowed them to draw pictures to illustrate their answers. It was good to try out different means for children to express themselves for answering questions. (reflection on 19th of June).

Similarly, in week 5, T2 gave the high rating of Level 4 for all the items in Part A of class organisation in regard to her planning, classroom management and the support

she gave to her pupils as shown in Figure 14. However, she commented that pupils were not doing good in the task. As she wrote, **“They find the question words slowly. They have not understood how to use those question words correctly”**. Just because of having room for reflection, she was planning to give more support for children’s reading and writing about Wh- questions in the following week.

Then in week 6, T2 then noted, **“Pupils enjoy reading”**. In addition, she also recognised that **“all pupils tried their best to write as many questions as they [could]. And most of them composed correct questions.”** In saying this, she felt very satisfied about her teaching as she found the strategies were effective for children’s learning.

That said, such *authentic* data justifies how pragmatic action research works for solving the situational problems and increases professional practice as the literature noted in Chapter 2. In fact, *process* and *effect* of such the improvement can be correspondingly traced to the data collected from live-class observation. This is because as the co-researcher, when I was observing the class, I witnessed what and how the teachers taught and how good or bad the pupils learned in the lessons during the six continuous cycles. Therefore, Section 4.2 below highlights the change in action as observed in the lessons which is crucial for achieving the purpose of this study.

4.2 Live-Class Observation

In this study, data of live-class observation was collected from 11th of May 2017 in the pilot study, as the commencing day of Cycle 1 was on 18th of May 2017 and the last day of Cycle 6 was on 22nd of June 2017. The findings of such data were crucial because as explained in Chapter 3, the observed data presented by the researcher provided ontological and epistemological classroom “context” as the basis for the research background (situational problems) as well as achievement of the research purpose (the identified problems improved) in this collaborative action research. That said the

researcher, as me, was present in the real classroom that justified the two teachers' self-reflection noted in the above reflective diaries (Section 4.1) - that the problematic situation existed in week 1, the change in their teaching approach of differentiated teaching truly happened from week 2 onwards, and the continuous improved outcomes of pupils' learning until week 6.

Therefore, data presented in the following paragraphs *compare* the differences of the observed practice before and after carrying out action research in this study. For the detailed analytical discussion about the *change* in action of the teachers, it can be referred to Chapter 5. Here the three main points of data presentation include:

- a) classroom problem existed in week 1 (before);
- b) change in classroom practice noticed from week 2 onwards (after);
- c) effect on the sustained improvement of pupils' learning and classroom discipline that achieved the purpose of the study.

Regarding the set-target 1 of the teachers, the table below summarizes their teaching approaches in live-class observations.

	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6
T1	One-size-fit-all curriculum	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching
T2	One-size-fit-all curriculum	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching	Curriculum adaptation and differentiated teaching

Table 5 – showing the observed teaching approaches used by the two teachers (for the set-target 1)

As shown in the above table, both teachers were observed to use one-size-fits-all teaching approach in week 1. Besides, classroom problems appeared as pupils were found mostly off-task with disruptive behaviours in week 1 as shown in the following table:

	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6
T1	<p>Pupils' behaviour: Mostly off-task – leaving seats, shouting, playing with their stuff and making noise always</p> <p><u>Classroom Management:</u> T1 seldom responded to the noise and disruptive behaviour</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T1 frequently used strategies of behaviour modification</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T1 frequently used strategies of behaviour modification</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T1 frequently used strategies of behaviour modification</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T1 frequently used strategies of behaviour modification</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T1 frequently used strategies of behaviour modification</p>
T2	<p>Pupils' behaviour: Mostly off-task – leaving seats, shouting, playing with their stuff and making noise always</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T2 frequently used strategies</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T2 frequently used strategies</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T2 frequently used strategies</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T2 frequently used strategies</p>	<p>Pupils' behaviour: Mostly on-task – enjoying learning activities</p> <p><u>Classroom Management:</u> T2 frequently used strategies</p>

<u>Classroom Management:</u> T2 sometimes responded to the noise and disruptive behaviour	of behaviour modification	of behaviour modification	of behaviour modification	of behaviour modification	of behaviour modification
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Table 6 – showing the observed strategies for classroom management used by the two teachers (for the set-target 2)

The above two tables show the same observed situation that problems of pupils’ learning behaviours occurred in week 1 in the two teachers’ lessons when they used one-size-fits-all curriculum. However, when the approach of differentiated teaching was adopted from Cycle 2 to Cycle 6, problems of pupils’ learning behaviours improved. The following episodes record classroom practice of the two teachers’ observed lessons in Cycle 1.

T1 (Cycle 1): Episode of Live-Class Observation 1

...T1 wrote Chinese words on the blackboard: 從 (from), 倆 (two persons) and 兩 (two). She asked some content-questions from the passage (Chapter 5) of the textbook they had learned the day before and the pupils answered loudly without raising their hands. Then the whole class read the passage together and T1 picked out a sentence from it and indicated the word: 從 (from). She explained the meaning of it and asked pupils to make a sentence that included it. John was the first boy who raised his hand to give his answer, which was correct. T1 then asked the class to finish the exercise of sentence-writing in the textbook. However, Carson did not have the textbook, so he did not do it. Pupils of the class became noisy while they were doing the task. I walked around the classroom to check their work. Most of them had already done the exercise – for they had probably finished it at home. Yoyo was moving her body in the seat and fell on the floor. Angela was talking to her neighbour. Steven said loudly that he lost his pen and he asked T1 to give him a pencil. At that moment, Ben picked up a bottle of medicine to drink and his groupmates complained about his absurd behaviour. T1 reminded pupils to pay attention to the task, but they were too busy to listen to her. After a while, she checked answers with the whole class. John and Steven shouted out their answers. T1 did not respond to them and continued. Then she asked pupils to look at a worksheet given to them a day before, which was about how to construct a story. She explained that the content-structure of a story should contain three basic elements: time, place and people (Appendix 11). Then

children were asked to write a story with these elements in the blank worksheet. When they started doing, they made noise again. Nathan talked and played with his neighbour. Steven asked T1 some questions about his writing, but he spoke loudly and impolitely from his seat. T1 approached his seat to help him. At that time, I went to check their work and I found that most pupils had already finished writing. At that moment, there was some cotton blowing in from the window as it was windy on that day. Children were so excited that they shouted loudly. Nathan and John even left their seats to catch it in the air. T1 got them back to their seats and closed the window. Most of them focused on the cotton and stopped working on the task. T1 asked them to behave, but the classroom was still very noisy. She then returned to the teacher's desk. She spoke to Group 1 pupils about whether they could submit their worksheets. As some pupils were getting out from their seats, Candy wondered and asked Angela why they would go to the teacher's desk. Pupils at every corner of the room continued to talk to their neighbour, to play under their tables and/or to move around the classroom. T1 still ignored the noise...

As shown in the above episode (in Cycle 1), T1 intended to get pupils to write a story in the Chinese lesson. However, as observed, most of them were found off-task, especially the four children with SEN, and problems of pupils' behaviour occurred. First, pupils did not know what and how to fill in the blank writing-worksheet as shown in Appendix 11. Second, some of the pupils had already finished writing the story at home and they had no more things to do in the lesson. Therefore, they were engaged into other stuff and they made noise. In particular, they left their seats to catch for the cotton flowing into the classroom that made the chaotic situation happen. Third, T1 seldom gave response to pupils' disruptive behaviour that caused the problematic situation.

Similarly, learning problems also appeared in T2's classroom in Cycle 1 as the episode shown below:

T2 (Cycle 1): Episode of Live-Class Observation 1

...While walking to the teacher's desk, T2 commanded, "**Hands on the desk!**" Most pupils did it immediately. A few of pupils, however, were still busy with their own belongings. T2 said, "**Look at A**" as she named a child. "**Look at B**". She continued to name some noisy children one by one. The noise reduced gradually and she played a video clip about clothes

worn in the four seasons. The pupils listened and watched quietly. After that, she showed the lesson objective via the PowerPoint slides: “*We’re going to learn what children wear in their favorite season. After this lesson, you can tell others about them*”. Then pupils discussed their favorite seasons. Steven and Nathan raised their hands to give answers to T2. As a result, she gave a marking of ✓ to their respective groups. She also said that they would receive stickers after the lesson.

T2 then asked Yoyo to reply to a question. However, she could not say a word, and the pupils of the class made noise again. At that time, John left his seat to help T2 give Steven and Nathan a sticker. Angela was playing her watch and asking her neighbour to help her fix the watch. T2 asked her to put it away, but she did not listen. Ken was also talking to his neighbour in the group. T2 then gave hints to Yoyo and helped her finish her answer. After asking brief questions, T2 displayed several slides (of a PowerPoint) that included vocabulary related to seasonal clothing, such as *scarf*, *suit* and *blouse*. Children were asked to read the words aloud when they appeared on the screen. Steven, John and Ben read well and earned a ✓ and stickers. A moment later, pupils worked within their groups to match pictures with the seasons and to write sentences on the lines provided in the worksheet (Appendix 22). T2 reminded that they could refer to the textbook, on page 41, to find words and the pattern, “*I usually wear _____ in _____ season*”.

When they started doing the task, I walked around to check their group work. Some pupils did it quite well, but some were just playing around. Yoyo and Carson did not write anything. They talked to their groupmates and did not seem interested in writing the sentences. Ben and Kitty were able to participate in matching pictures, and they tried to write sentences. In general, there were certain pupils who could hardly write a word. John was smart, so he finished the task very fast for his group...

As shown in the above episode, T2 had pupils participate into the writing task in groups. Most of the time, the low achievers and children with SEN were found off-tasked. At the same time, those high achievers in the group could finish the task very quickly, and so, leaving those children with SEN behind. Moreover, the classroom was noisy as observed.

The above two episodes revealed the “situational problems” in parallel to the data of the two teachers’ reflection (Appendix 5 and Appendix 6) as the “starting point” of this action research study (Capobianco 2004:49). Therefore, after commencing the collaborative action research in week 2, the changed situation was observed as the two

teachers adopted differentiated approach to address the identified problems. Here are the episodes of live-class observation 2:

T1 (Cycle 2): Episode of Live-Class Observation 2

...In response to her questions, John shouted out the answer. He immediately received an X as T1 marked it on the blackboard. He continued to shout and therefore received a double X X as a warning. The children became quiet. T1 asked Angela and her groupmates to read the first paragraph of the passage aloud. The rest of the pupils listened carefully. Then Niki's group read the second paragraph. The students continued to listen quietly until the last group finished reading. T1 then wrote the teaching points on the blackboard and at that time, John asked loudly, **"If we read very good, will we get more marks of / ?"** She answered, **"If you have a question, please raise your hand"**. Then T1 started teaching the content of the passage. Nathan put up his hand to try to answer her questions. As his learning attitude was improving, T1 gave him a / but she marked the place wrongly in other spaces of groups. Angela shouted loudly to remind T1 that Nathan was not in that group. Then she was given an X. Steven shouted for the answer and so he also received an X. T1 announced, **"Four children got their marks. Three of them had the cross (X) and Nathan gained a tick (/) because he did good"**.

...T1 distributed the worksheet that we had co-planned in the last cycle. The pupils first found the adjectives in the passage. After a while, T1 asked a girl to give her answers. The girl read out a phrase, 草叢裏的飛蟲 (insects found in the grass) and John immediately put up his hand to try to say something. T1 gave him permission to speak and he commented that the girl's answer was wrong. He explained that 草叢 (grass) was the noun and not the adjective. T1 thought for a while before saying, **"John, your point is understandable. But in Chinese, sometimes we may use the nouns as the adjectives to describe things"**. She then used other examples to elaborate and gave him this reply, **"Here the writer makes use of the place, i.e. in the grass, to describe the status (草叢裏的) – being in the grass - the insects (飛蟲) - in which the descriptive form of usage is employed as adjective. So I agree with her"**. Although John felt a bit disappointed, the way that he raised this question not only showed his high level of critical thinking, but also allowed for a deep discussion (among the teacher and pupils of the class) on the subject matter. The learning atmosphere was very positive. Children went on to the next part of the worksheet and they were told to finish it within 30 seconds. Ken could not wait any longer as he put up his hand to give his answer. However, T1 announced that they would have a group-competition to present their answers. As shown in the photo (Appendix 16a), pupils were standing in front of the whiteboard to compete their writing. Every groupmate took turns doing so and, in the picture, Yoyo, who was the third one

in Group 1, was standing in front of the whiteboard. T1 and the classmates waited for her. Steven (in the same Group 1) shouted out his answer to help remind her. However, she could not write a word (Appendix 16b). T1 asked her to give her answer verbally instead. After the last round, T1 checked the answers together with the whole class. While she indicated a wrong answer, Angela asked, “**Why not?**” T1 gave her an **X** immediately. She then stopped talking. Compared with the previous lessons, pupils’ learning behaviours had greatly improved in this cycle.

As shown in the above episode in Cycle 2, T1 changed to use adaptive teaching in which she employed in our co-planned differentiated teaching materials. Pupils were mostly observed on-task and they enjoyed an activity of group competition as shown in the photos (Appendix 16). In addition, she responded frequently to pupils’ behaviours by giving **√** and **X** to manage the class discipline.

Similarly, T2 also tried out differentiated teaching in Cycle 2. The problems of pupils’ learning as well as classroom management improved as observed. I went to her class for lesson observation on two occasions. The first one (Live-Class Observation 2a) was on Monday, 22nd of May, and the second one was on Thursday, 25th of May. Here are the episodes of the two lessons:

T2 (Cycle 2): Episode of Live-Class Observation 2(a)

...T2 asked the class about the date of that day. John raised his hand and replied correctly. T2 gave him a reward of **√**. At that time, Nathan also screamed out the answer. T2 reminded him that if he wanted to answer the question, he should raise his hand. However, he said, “**I don’t know English**”. Steven then burst out laughing. In response, T2 gave the two boys an **X** and wrote their markings on the blackboard. The class became quiet.

...While they were reading the words aloud, T2 clapped her hands to help highlight the syllables. Following her rhythm, they also clapped their hands and placed emphasis on the syllables in the spoken words. For the boys and girls who did well, T2 gave them **√** as a reward...Even Angela, the hot-tempered girl, raised her hand. She gained a **√** because she gave a correct answer without shouting. However, at that moment, Nathan teased his neighbour, so

he received an X. T2 called on Kitty to answer and she answered correctly. Carson and Eva were also given chances to gain points...

Episode of Live-Class Observation 2(b)

...T2 asked pupils, “*What do you want to play when you have free time?*” Children raised their hands quietly to answer the question. After sharing their answers, they listened to a song. They loved to sing it by following the melody. The song showed a movable clock that gave the time: one o’clock, two o’clock etc.. It was a means for children to learn the pattern of asking the question, “*What time is it?*” and answering, “*It is _____o’clock*”. After that, children reviewed the numbers, counting from one to twelve in English spelling. T2 asked questions about the time, and they raised hands to give answers. This time they did not shout out. They were obedient and the class discipline improved.

...When pupils read through the pictures, they were asked to stand up and read aloud, “one o’clock, two o’clock, three o’clock...” They did well and Nathan was to help mark ✓ on the blackboard for each group. The pupils revised the words for numbers and time with the help of PowerPoint slides. They also tried to fill in the missing letters by spelling out the words. John was assigned to distribute the worksheet to the whole class. Children were found very quiet and patient enough to wait for getting their worksheet. Then they tried to do Question 1 and 2 (Appendices 23 and 24). After a few minutes, T2 asked them to put the worksheet in their drawers and for all the pupils to stand. The children of Group 1 tried to ask a question about time and Group 3 were called on to answer it. Then other groups took turns practising the pattern of asking time and giving answers. Their performance was good...

What the two teachers made change in Cycle 2 was to adapt their teaching approach in ways of preparing various interesting activities and modifying step-by-step worksheets to address diverse learning needs of pupils. As Tomlinson (2014) emphasizes, different pupils in the same classroom have different learning needs. Teachers need to adapt their materials according to their different “profiles” and “readiness” for the learning “content” (ibid). That said, one-size-fits-all curriculum the two teachers previously used does not help including children of different abilities learning together but differentiated teaching does work for approaching that inclusion in classroom. Having said that, in Cycle 2, what positive effects observed were:

a) *change in teaching approach* of the two teachers – what they had already learnt about the differentiated teaching in the TDP some years before now had been applied to address the identified problems of inclusive classroom;

b) *change in learning behaviours* of the pupils– their on-task behaviours were found most of the time as they could follow the teachers’ instructions in the lessons promptly, including the four children with SEN.


Moreover, as observed, pupils were able to keep quiet and to correct their behaviours when the teachers used classroom management strategies to respond to them. As Hansen et al. (2017) specify, classroom problems improve when pupils engage in doing the assigned tasks and enjoy learning. As such, the two teachers’ satisfaction about pupils’ positive learning outcomes reinforced their continuum of using these effective strategies in the rest of the cycles. The paragraphs below highlight some of the continuous changes of actions in the two teachers’ lessons from Cycle 3 onwards.

In Cycle 3, T1 and T2 continued to adapt their teaching “content” and “process” (Tomlinson 2014) by varying several activities and tasks with step-by-step instructions and maintained to respond to pupils’ behaviours promptly for classroom management. As observed, pupils were found motivated to learn and to participate into the assigned tasks actively. Appendices 17, 18, 25 and 26 showed some of the adaptive materials and pupils’ observed behaviours in Cycle 3. The ways that they made new actions as “experiment” for improving the problematic situations actually demonstrated Lewin’s “process of change” (1946) as explained in Chapter 2. These new actions were not taken by chance at once, but were derived from deliberate reflections for change. As a result, classroom problems continuously improved because pupils were on-task most of time and they could obey the set classroom rules. Even when they were off-tasked, for example in the middle of T2’s lesson in Cycle 3, they did not make any noise when it was a critical moment of dead-air due to the computer problem that T2 could not use the Power-Point slides to teach. However, pupils could keep quiet and waited patiently

to the teacher while she was fixing the problem. In other words, they did not take advantage of the moment to make noise, to play with their stuff or to leave their seats.

In Cycle 4, according to the school calendar, pupils had examination and therefore teachers of the school had no class to teach. After the examination, pupils had a set period of time to check their marked papers and to do corrections for a few days. T1 and T2 then kept on maintaining good classroom management for their set-target 2 of this study. In Cycle 5, pupils then had a normal schedule of class periods and the two teachers were observed using differentiated approach and the effective strategies continuously to teach the lessons. Here are the episodes of the live-class observation in Cycle 5.


T1 (Cycle 5): Episode of Live-Class Observation 5

...Most pupils raised their hands and waited for permission to give their answers. Even Angela, Ken and Nathan were quiet and obedient. Steven also put up his hand but he still wanted to loudly share his answers. I could tell they were interested in presenting their answers to the teacher. It might be because they intended to get more  (for a reward).

...After reading, T1 asked them how they felt about the contents of the story. Angela put up her hand for a question. She asked, **“This chapter is not for comprehensive reading. And I don’t really understand what are the differences between the two verbs of 蹚 (wade) and 走 (run) in the heavy rain?”** T1 thought a while and then asked whether other classmates could help her. One child tried to explain, **“蹚 (wade) could mean jump because the water was on the ground”**. T1 thanked for the child and said, **“Yes, Angela, you asked a very good question. The word, 蹚 (wade), may help us understand the situation, i.e., there’s the wet ground. In general, we use the word, 走 (run), to express walking on the pathway. But now in the passage, we know there was heavy rain. People needed to jump over the water because of the wet ground”**. T1 continued, **“Besides jumping over, what other methods can we use to get through the water in the heavy rain?”** It was a challenging question and the children were excited. This time, they did not shout out their answers. Instead, there were quite a number of hands up in the classroom.

...T1 continued to ask questions about the story content. While mentioning about the height of the horse, T1 asked pupils to compare the height of three animals and to think how they

would manage their bodies passing through the deep water. The pupils were also told to arrange the three animals' size (from small to big) in the correct order. Jacky put up his hand and tried to answer the question. Carson also had a chance to give his answer. Angela could not wait to answer the question and she shouted to complain that her name had not yet been called. T1 asked her to keep quiet and to behave properly...Pupils were asked to find similar phrases and sentences in the passage and to write their answers on the worksheet. I went to see how they did individually. I found that even the four children with SEN were able to finish the worksheet. They did not seem to have any difficulty achieving these learning objectives.

The above episode showed that T1 kept on giving prompt response to pupils' learning though she changed to use  to replace ✓ for rewarding children's correct answers and positive behaviours as strategic reinforcement. When answering Angela's question, she asked a stimulating question and discussed with the children, in which she intended to bring them to have a deep analysis of the passage, not just confined to finish quickly the set contents of the e-book. That said, she modified the "content" and "process" of learning (Tomlinson 2014) for pupils' interest – to figure out other methods of passing the river in the heavy rain. Her change in practice demonstrated that she was getting used to the adaptive teaching in which she could think about and react to the different abilities of the pupils in the "differentiated classroom" (ibid). In saying this, the teacher-pupils interactions and the learning atmosphere was good as observed.

Similarly, T2 continued to use differentiated teaching in Cycle 5 as the episode shown below:

T2 (Cycle 5): Episode of Live-Class Observation 5

...After they watched the video clip, the pupils were asked, “**What did you see in the video?**” Yoyo was called on to give her answer. She said she saw the word *What*. T2 then wrote the word on the blackboard and continued to ask, “**Besides ‘What’, what other Wh- questions did you see?**” Other low achievers were asked to give answers, and they all got them right. John put up his hand and said, “**One more. I know the one you guys don’t know**”. T2 responded, “**OK. You try**”. He wrote *Whose* on the blackboard. T2 praised him: “**Well done.**” Another boy also suggested *Which* and wrote it on the blackboard. Kelvin raised his hand and wrote, *This*, as shown in the photo (Appendix 28a). T2 responded, “**It’s not a Wh- question. But thank you Kelvin for your trial**”. T2 explained again how to form a question. Thereafter, the children participated in their group activity of question-writing. She distributed some old textbooks for as references (for searching), and they wrote their questions on the yellow pad of stickers... she heard some noise and noticed that Angela, Nathan and Ben were playing. When she went to their desks, they immediately stopped playing and concentrated on the task again...

The above two episodes highlighted how both T1 and T2 applied the learnt differentiated teaching approach to address diverse learning needs of pupils in Cycle 5. As for T1, she led pupils to have a deep analysis for discussion critically regarding their cognitive thinking while she was responding to the child’s intuitive question. As for T2, she continued to prepare different teaching materials like video clip to arouse pupils’ learning motivation as well as step-by-step writing activities about Wh-questions. In addition, she also paid attention to the process of learning of those low achievers (including those children with SEN) and the high achievers like John as she asked questions to check their understanding. In the two observed lessons, pupils with different abilities could behave positively to the learning tasks as most of the time they were on-task. The classroom discipline was good and no disruptive behaviours occurred in the two teachers’ lessons.

Having said that, the two teachers had been participating into this spiral form of action research for five cycles, in which they kept on doing reflections, re-planning their actions and re-investigating their actions. Their engagement in this continuous action-

based inquiry justified Lewin's (1946) spiral of "experimental" actions for improving the problems as reviewed in Chapter 2. From the *effect* of the pupils' improved learning behaviours (as sustained in week 5), the two teachers demonstrated that the approach of differentiated teaching (that they learnt in TDP) worked for addressing problems in the inclusive classroom. In other words, they had successfully searched for resolutions for the identified problems so as to achieve their set-targets (as noted in Appendices 4 and 5). That was the reason why they rated mostly at high Level 4 for all the 10 items and expressed their satisfaction about the lesson effectiveness in the reflective diaries.

On the other hand, their effect of the sustained actions and reactions in the 5th cycle justified Dewey's (1938) theory of practice that teachers learn by "doing". What Dewey believes is that teachers learn through continuous teaching practice from reflection (Lorino 2018). That said while trying out differentiated teaching for the fifth times of the research cycles, T1 and T2 proved themselves that they had learnt *what* (knowledge) and *how* (practice) to improve pupils' problems of learning (McNiff et al. 2011:11-36). Their actions of reflective teaching were not merely the repetition of "doing" without thinking but "reconstruction of experience" (Dewey 1938; Lorino 2018) that created their new "living theory" in this practice-based action research (McNiff et al. 2011:12).

In Cycle 6, because of this gained successful experience (as in the past few cycles), they continued to adapt their teaching. In the live-class observation 6, T1 introduced an interesting topic of Chinese Festival and pupils enjoyed sharing their favourite toys in the activity. However, as observed, when they were asked to complete a mind-map in writing, they found it difficult to do so. In our reflective discussion, she shared that if she had adapted the mind-map in different layers, pupils could have found it easier to follow the passage-analysis. As for T2, she also continued to employ differentiated teaching in ways that she introduced a family story to consolidate pupils' learning about Wh-questions. As observed, most children found it difficult to fill the related vocabulary into the table but those high achievers such as John, Andy and Steven were able to finish this first step and then to write out the Wh-questions on their own. As

noticed this situation, she shared in our reflective discussion that it was still good because by now she realised at which point she could make further adjustment. For details of our reflective discussion, it can be referred to the next Section 4.3, in which it contains the process of change of the two teachers with the linkage from reflections to reactions during the six research cycles.

What significant data presented in this section of live-class observation was the two teachers made *change in action* that gave answer to the research question 1. That means the findings reveal: a) the existing problems recorded in Cycle 1 (before the change); b) the problems improved from Cycle 2 onward (after the changed actions taken). Such observed data of problem resolution in the situational “context” of inclusive classroom is evident for ontology and epistemology in doing pragmatic action research as specified in Chapter 3.

4.3 Reflective Discussion

In light of the value of collaboration work of doing action research as argued in Chapter 2 and Chapter 3, data of reflective discussion presented in this section shows how the two teachers and I initiated change in action for problem solving as well as enhancing teaching practice in teacher development.

Corresponding to the previous Section 4.1 and Section 4.2, the data presented here highlights the core findings as in: Cycle 1 – identifying the existing problems, and co-planning of differentiation strategies for problem solving; Cycle 2 – evaluating the effects of differentiated teaching for addressing the identified problems and re-planning of actions for the continuous cycles; Cycle 5 – confirming the improved problems and co-planning continuously for the next cycle.

In addition, as we planned that this spiral form of action research would last for about six weeks, we then had an overall evaluation on achievement of the study in our discussion in the last cycle. The following charts illustrate how this collaborative action research works from our joint efforts of reflections and reactions to attain the purpose of this study.

Figure 16: Summary of T1's Process of Change

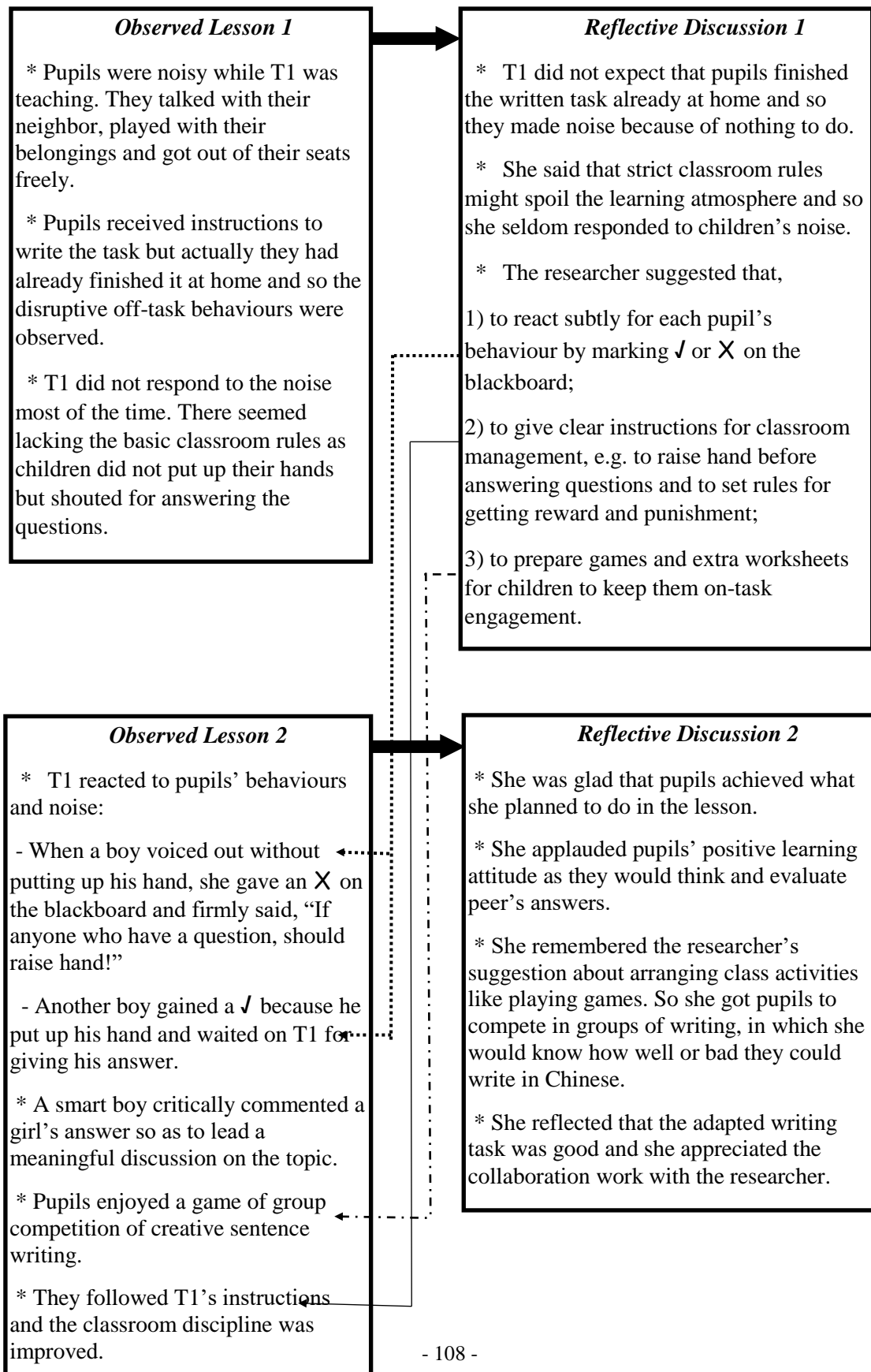


Figure 16: Summary of T1's Process of Change (Continued)

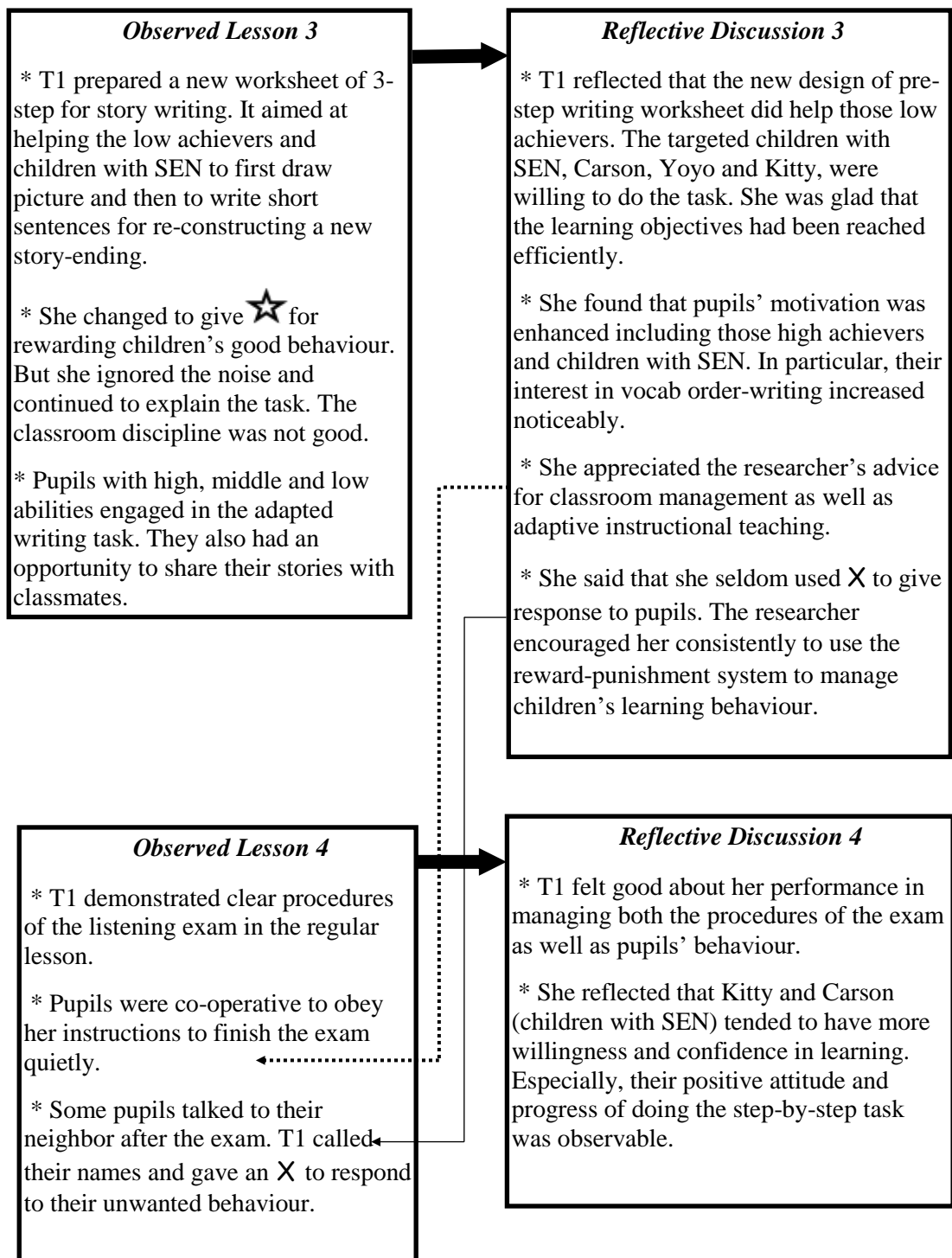
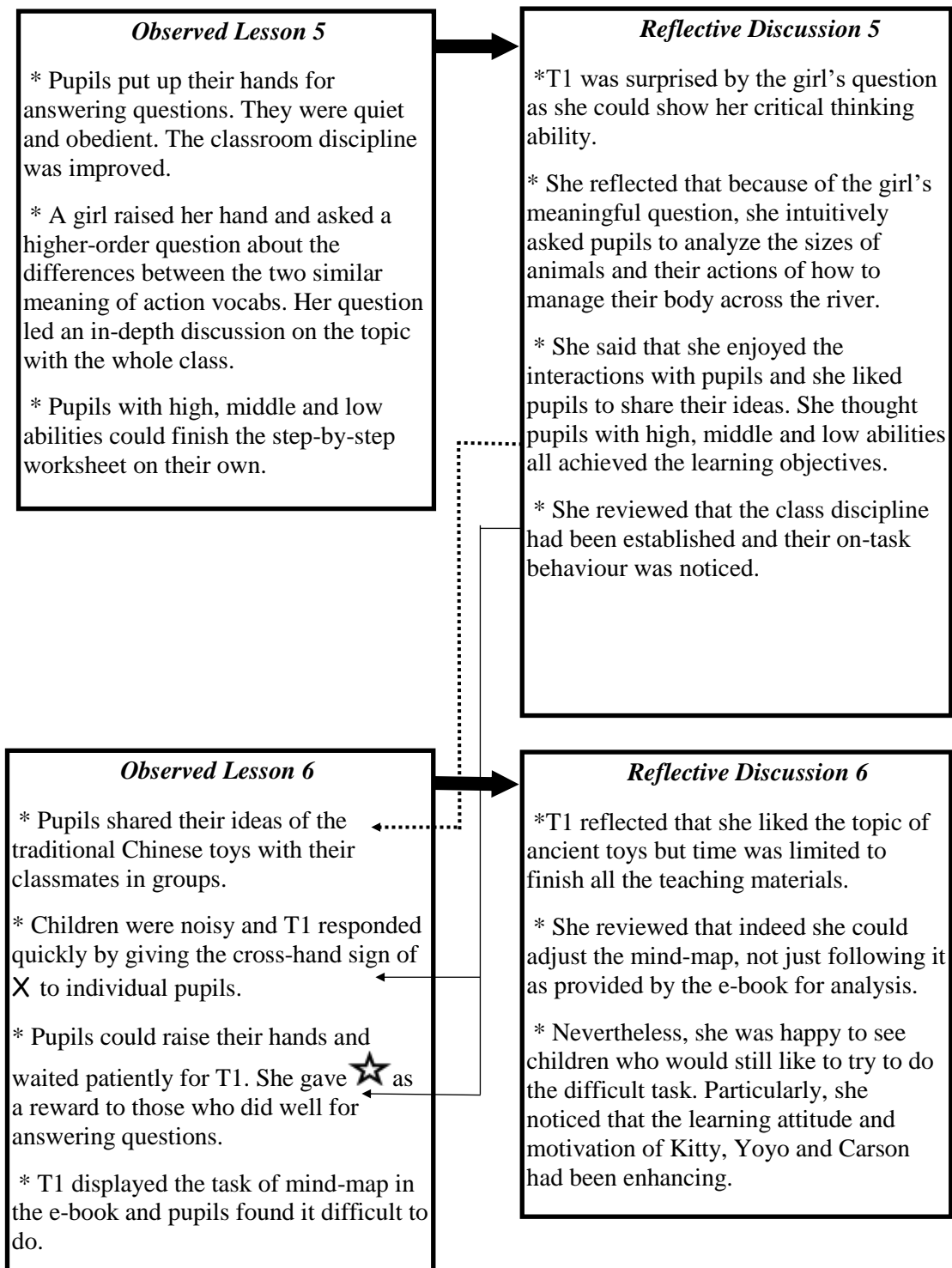


Figure 16: Summary of T1's Process of Change (Continued)



Cycle 1 – Identification of problem

The above Figure 16 displays T1's two sets of data of reflective discussion as well as classroom observation. In Observed Lesson 1, the box on the left-hand side records class activities and teacher-pupil behaviours during the lesson. In alignment with the discussion we had immediately after the lesson, data of the evaluation is presented on the right-hand side in Reflection Discussion 1. As three points of suggestion were made in the discussion, the three straight lines derived from Reflective Discussion 1 indicate the planned strategies applied to classroom practice in the next cycle.

In Cycle 1, T1 shared her disappointment that pupils did not listen to her instruction – for they should bring the worksheet to the lesson. She did not expect that most of them had already finished their story-writing at home. As she commented, **“I didn't think that situation would happen! If they had not yet finished writing at home, this double-period would have just been fit for the lesson objective”**. At this point, T1 recognised that problems occurred when pupils were off-task. We identified that this was the “starting point” we should work for - as the first step of doing action research is to find out the problems (Capobianco 2004:49).

In addition, I shared my view that those low achievers and the targeted pupils with SEN, as observed, found it very difficult to write in the blank worksheet on their own. Even Steven, who was smart, still had to ask her for help. I asked whether she could remember the differentiated strategies that she learnt about Tomlinson's (2001, 2014) model in the training course of TDP – for pupils needed a kind of pre-step writing worksheet for their creative story-writing. She agreed that most pupils did not actually understand what to do especially in writing and so, their parents helped them finish the assignment at home when they received the worksheet. In particular, Yoyo's parents put a lot of effort into doing her homework. As we co-worked in this study, T1 and I tried to co-plan the tasks and activities for the next chapter of the textbook (chapter 6).

She said she would consider preparing a step-by-step worksheet for those low achievers to start writing some parts of the elements of questions first and to gradually finish writing the pattern of questions. On the other hand, we shared some strategies for classroom management. She remarked that she had learnt from the literature that if we prepared some appropriate tasks for pupils to do, the off-task behaviours might diminish.

Similarly, T2's classroom problems were identified in Cycle 1. Figure 17 provides an overview of the data collected of how our joint reflective discussion affected her change in action cycle by cycle. On the right-hand side, the box includes the reflection points that we had in our Reflective Discussion 1, in which the three straight lines indicate the adjusted actions found in the next lesson. Her change in action from our reflective discussion displays as below:

Figure 17: Summary of T2's Process of Change

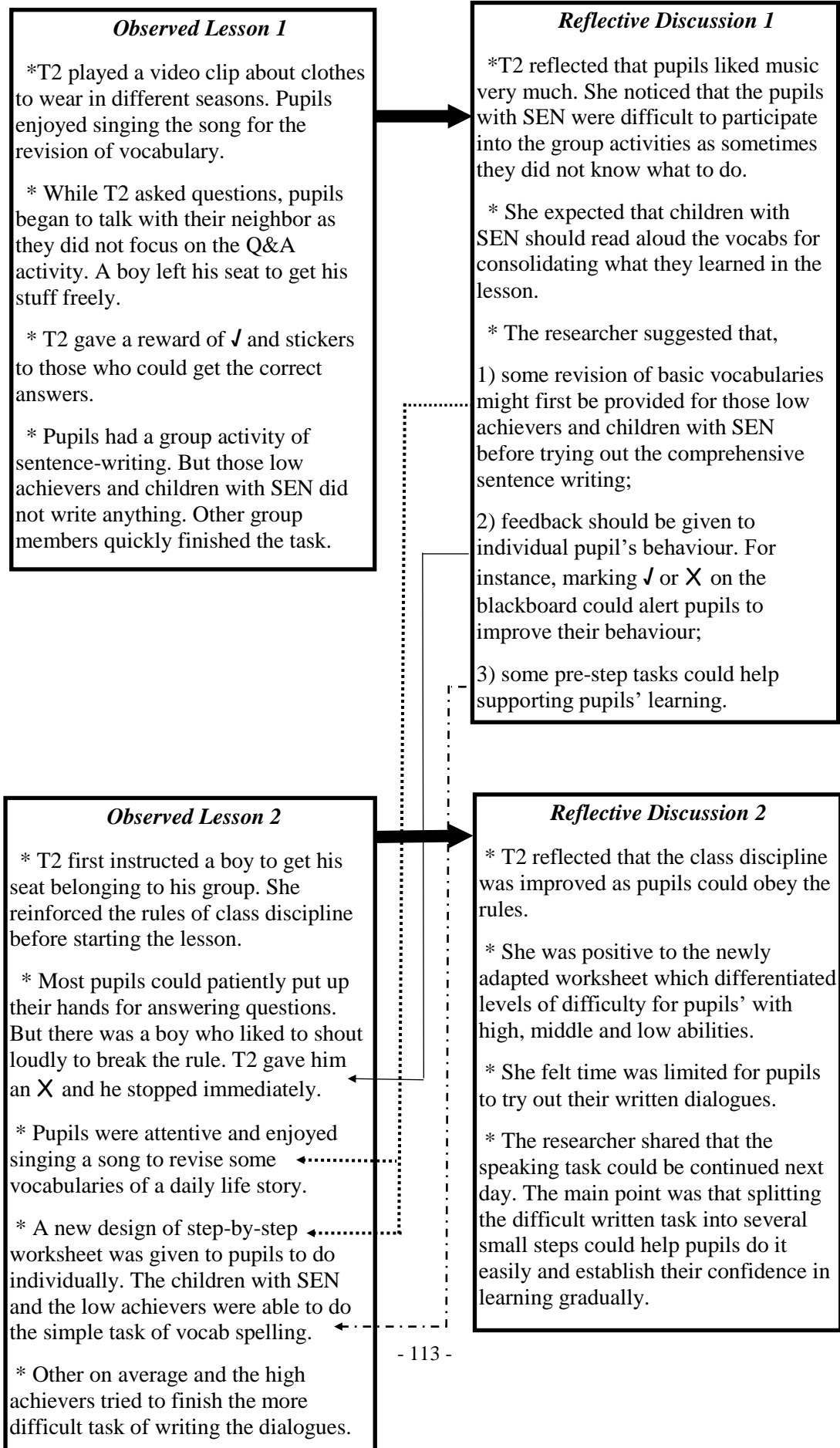


Figure 17: Summary of T2's Process of Change (Continued)

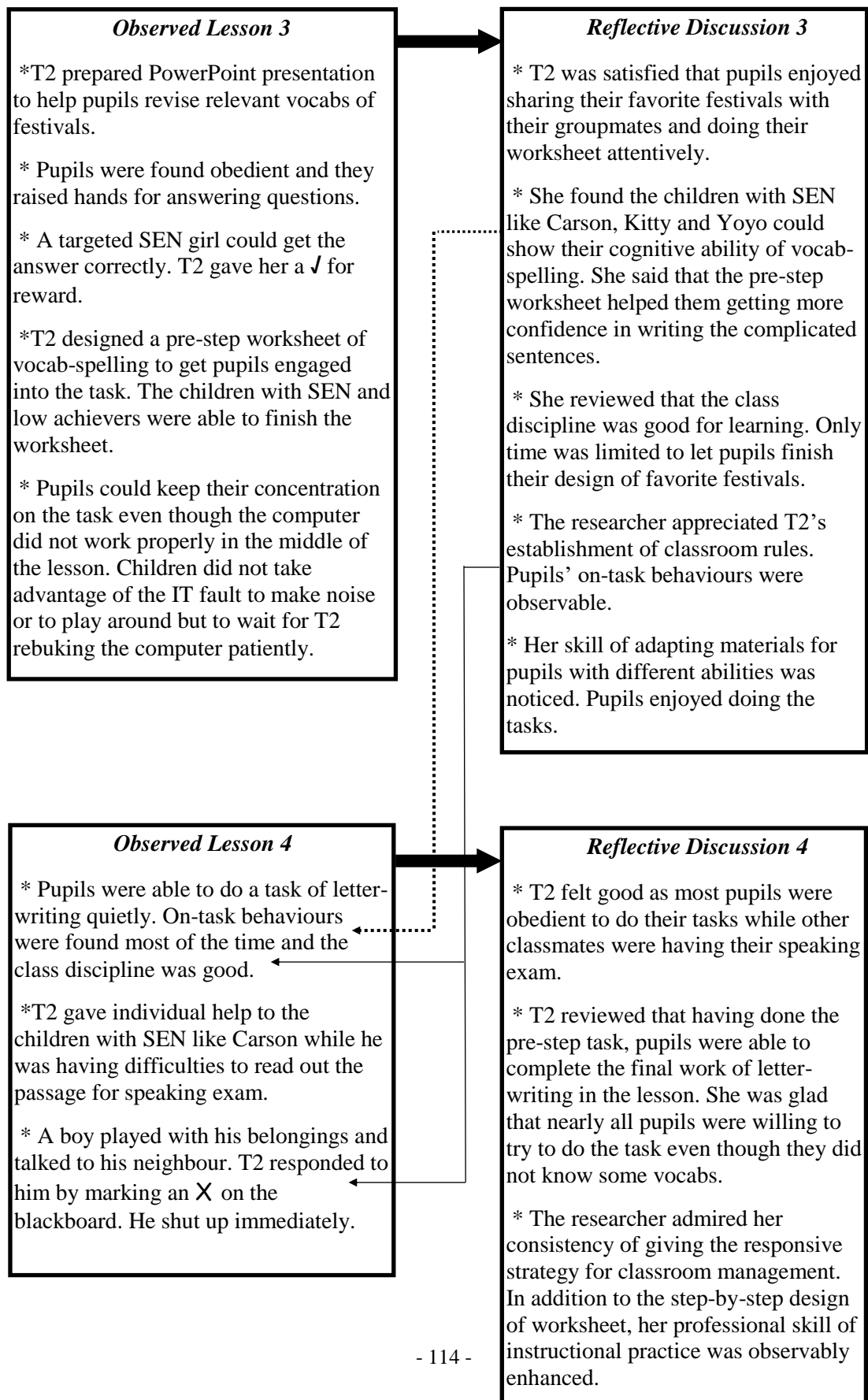
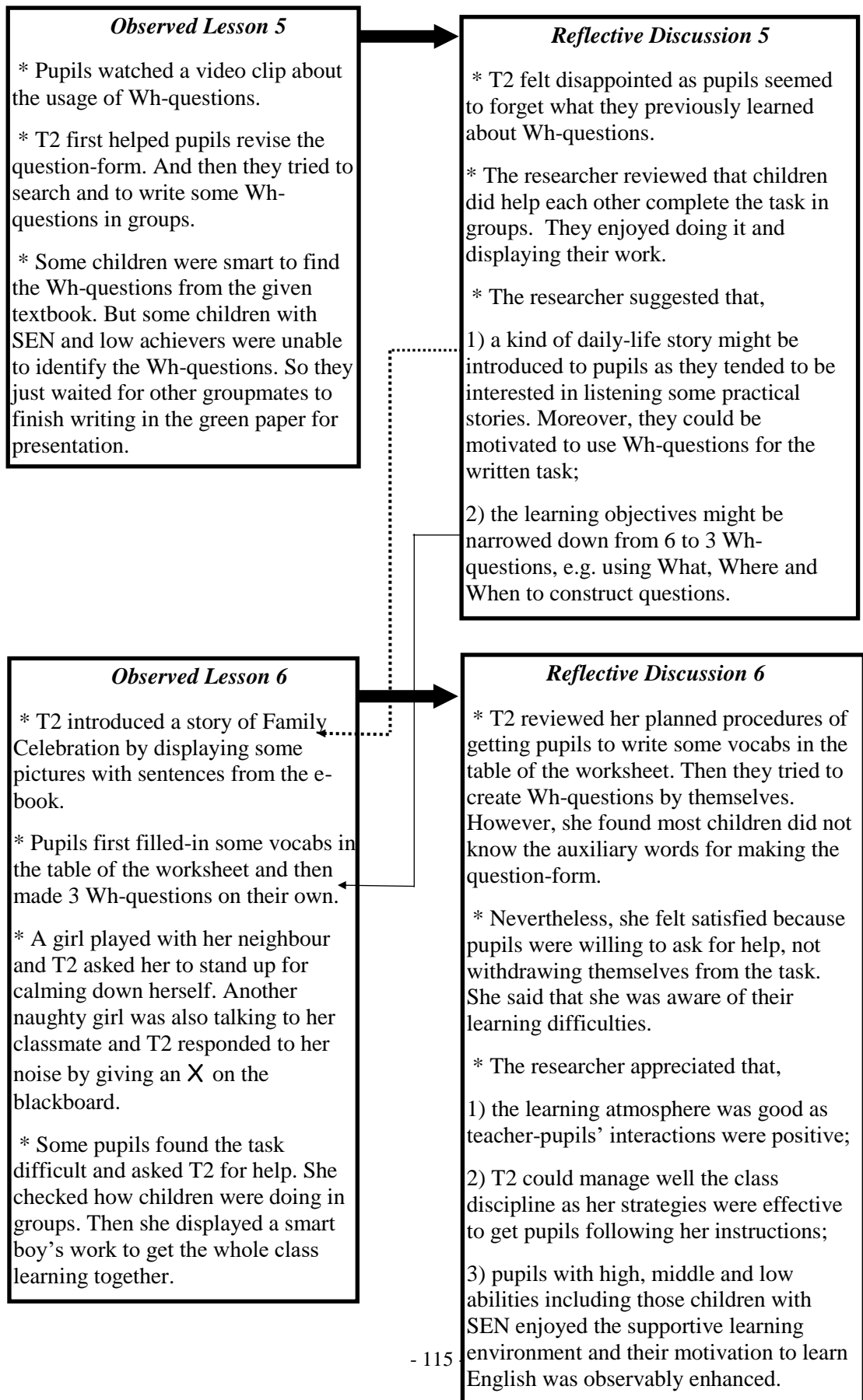


Figure 17: Summary of T2's Process of Change (Continued)



As in the Observed Lesson 1, T2 prepared a song for pupils to sing in order to help revise the learned vocabulary. She also demonstrated her strategy for classroom management by giving stickers to children to reinforce some of their good behaviours. However, problems occurred as the unwanted noise was noticed. First, pupils talked freely while T2 was teaching. One boy even left his seat to retrieve his belongings from somewhere. Second, most children could finish the task, but those low achieving pupils (including the children with SEN) were not able to write a sentence in the group activity. In Reflective Discussion 1, we had the following exchange:

T2: Some children can write a sentence. But some just played around and didn't participate in the activity.

The researcher: **Yes, I found that some of them couldn't write a complete sentence. Actually, it's quite difficult for us to ensure that everyone in the group puts forth the effort to construct a sentence together.**

T2: Right. Some low achievers, especially those children with SEN, need more individual help for writing.

At this point, I then brought out the differentiation strategies to help her remember the approach she learnt some years before in the TDP. At the same time, I shared that because I found the classroom noisy and that pupils played with their own belongings in the middle of the lesson when Yoyo was asked to answer the question. T2 agreed with what I observed and she would strengthen classroom management as I suggested.

I appreciated that both the teachers were able to honestly recognize their teaching problems. They would not think that they had no room for improving themselves as they had about 20 years of teaching experiences. On the contrary, they talked to me, as the *critical friend* that they could see their teaching inefficiency (Section 3.1.3 and Section 3.1.4). During our discussion, we reflected, searched and co-planned for the adaptive materials for the lessons that followed, in which it justified the TCA (theory of communicative action - as explained in Chapter 3) worked between us. What made

this collaboration work valuable was T1 and T2 found support from the researcher to help investigating their situational problems so that they could have room for to try out what they had learnt about differentiated teaching to address problems of diverse needs of pupils.

Having said that, in Reflective Discussion 1, T1 and T2 identified their classroom *problems* of: a) pupils' learning (especially children with SEN were found lacking behind/off-task); and b) classroom management (as the two teachers seldom responded to pupils' unwanted behaviour). These finding are important as Capobianco (2004:49) remarks, recognizing the problem is the "*starting point*" of doing action research. In other words, this first step of problem-identification justifies that action research takes place in the context of real classroom which informs the ontological basis for doing educational research (Section 3.1).

Cycle 2 – Evaluation of effect for addressing the problem

T1 tried out the adaptive teaching right after our discussion in Cycle 1. As noted in Observed Lesson 2, a group activity was developed to enhance pupils' creative writing. In Reflective Discussion 2, she said that, "**Today, the group competition was very impressive. I know how much pupils have done and how well they could achieve. And I could see that children enjoyed the activity very much**". Actually, children's positive participation in the activity surprised me. T1 remarked that in the middle of the lesson, she recalled my suggestion the previous week that getting children to participate in more class activities could help raise their learning motivation. Therefore, she arranged the ad hoc group competition to arouse pupils' interest in creative writing. Her action of change demonstrated Schön's (1983) concept of "reflection-in-action" worked in the way that teachers could still regulate their plan of action (within the act of reflection) while teaching in the class.

Meanwhile, she mentioned that pupils were interested in doing the newly designed worksheet for Chinese writing. She described that children found it simple to start by analysing the writing order of 1, 2 and 3 before writing the parts of the Chinese words (Appendices 14 and 15). She thought the worksheet was meaningful because it enabled her to trace how children would write in sequence. She expressed that,

In fact, I learned how to prepare the step-by-step worksheet many years ago. And I know that pupils enjoy playing games like the competition we had today. But somehow, I'm very busy with the school administrative work as I am the SENCO of the school. I really can't spare any extra time to think about group activities on my own. But since you have co-worked with me, we think together and I can work out once again what I have learned before. Without your help, I honestly would not have had time to think and to design any extra worksheets for pupils. (T1-Reflective Discussion 2)

Her accomplishment justified that this collaborative action research helped improve her teaching practice. On the other hand, she pointed out that the suggested strategies of behaviour modification pragmatically worked for managing pupils' learning behaviour. As she said, **"I observed that they were able to improve their behaviour when I gave them an X. And they continued to do well when I marked a / on the blackboard"**. I was so glad that she found this strategy effective for improving her classroom practice.

Similarly, T2 and I had meaningful two days of Reflective Discussion 2a and 2b. In reviewing the learning difficulties of those low achievers and children with SEN, we had opportunity to talk about the differentiated strategies as below:

The researcher: **We'd better set different levels of difficulty to cater for the diverse needs of pupils.**

T2: Do you mean there should be different parts of the task on the worksheet?

[(Reflective Discussion 2(a)]

T2 was clever to give this response and her question was a clarification that actually justified how Habermas's (1984) theory (TCA) worked between us (see Chapter 3). As in the process of reflection, we evaluated, searched and clarified things for mutual understanding through communication (ibid). Her saying demonstrated how she considered her previous knowledge (differentiation she learnt some years before) might put it into actual practice to enhance pupils' learning. After trying out the 4-level adapted worksheet (Appendices 23 and 24) in the Live-Class Observation 2(b), she evaluated that such the differentiation strategy did work to meet the diverse learning needs of children without labelling their weaknesses. I encouraged her to continue adjusting the teaching materials, as children could learn very quickly beyond our imagination.

In Reflective Discussion 3, T1 thought that the learning objectives of the lesson were achieved. Pupils' motivation to learn was enhanced as they enjoyed doing the task. However, she observed that most of the time the classroom was noisy. I continued to encourage her to practise the reward-punishment system in order to establish the classroom discipline for pupils' learning. As for T2, she shared that the adapted worksheet was effective. She was glad to see children with SEN (Kitty, Carson and Yoyo) were interested in doing the pre-step worksheet of vocab-spelling and with more confidence when writing the complicated sentences. In Figure 17, the two straight lines derived from the box of Reflective Discussion 3 and connected to Observed Lesson 4 showed that T2 believed her changed action was effective, and she continued: a) to use the step-by-step strategy to get pupils on-task and b) to give ✓ or ✗ to improve children's behaviour.

In Cycle 4, both the teachers reflected positively in their adaptive teaching. In Figure 16, as for T1, two straight lines connected from Reflective Discussion 3 which showed the linkage with the previous discussion that brought about the change of her actions in both the task design as well as classroom management in this cycle. In Reflective Discussion 4, she remarked Kitty's and Carson's learning progress. She found the adaptive measures were effective for the betterment of their learning. T2 also said that in her observation, most of the pupils were able to do the task of letter-writing. She felt good about the lesson as children were obedient and cooperative. I expressed my appreciation to both teachers that they could keep using adaptive strategies for classroom management.

Cycle 5 – Confirmation of the improved problem

In Reflective Discussion 5, T1 expressed that pupils achieved the objectives of the lesson. She said that, **“I had an in-depth discussion on the story content during which pupils could do the analysis, i.e., clarifying the size of animals from small to big. In fact, I intuitively asked them to think about it. I didn't plan this activity yesterday”**. She shared her enjoyment of teaching as she appreciated the girl's (Angela) meaningful question, which stimulated her thinking and led to an in-depth discussion with the class. I admired her intuition to make change in the middle of the lesson while she was teaching. That change of action was derived from her “reflection-in-action” (Schön on 1983).

In fact, if she did not ask them to think about the size of three animals, she could have moved on to teaching the next item of sentence-structure. The children then would have lost the opportunity to think critically to compare and to analyse more aspects of the story. She also stated the following:

Today, I missed the chance to discuss the characters of the animal mother and the animal son of the story. I think children are interested in examining

the characters of the animals. Moreover, they should have an opportunity to explore the moral domain of the story. If I could do it again, I would have not required them to finish the worksheet by today but maybe by tomorrow. Then we would have had a deeper discussion on the interactions among animals in regard to the moral aspect of the story.

Having said that, she expressed her passion to widen the scope of pupils' learning in the affective domain within the lesson. I was surprised to hear her valuable reflection. In line with the data collected in Section 4.1, her joyful sharing justified the findings of her high frequency Level 4 of ratings for lesson satisfaction as noted in her self-reflection diary.

Moreover, she confirmed with me that children had benefitted from the modification of the tasks as well as from the activities in this action research. I was glad to find such an enhanced learning atmosphere in the classroom where pupils were attentive and their on-task behaviour was noticeable. She also believed that the class discipline had been established and her skills related to managing the diverse needs of pupils had increased.

Similarly, T2 shared her view that pupils fulfilled the assigned task in the lesson. Her positive comment was also in line with her high frequency Level 4 for all 10 items of lesson evaluation as recorded in her self-reflection diary. In our Reflective Discussion 5, she confirmed that pupils' learning motivation and behaviour improved while she kept using differentiation approach to teach. In reviewing the achievement of lesson objectives, she said that although pupils could finish the tasks, it was not enough. This was because she discovered that children did not do well in the exam last week when formulating the question form. For this reason, she set this topic for reinforcing their learning. I appreciated her passion for improving pupils' weaknesses in her follow-up planned actions.

In this regard, we continued to search ways for helping pupils learn better. She pointed out that, **“Then how can I help those who are SEN? Constructing the Wh-question is hard to split the steps from big to small...”** At that moment, I thought of the circle time during which pupils sat together to listen to the teacher who would tell them a story. We then had this exchange:

The Researcher: **Tomorrow, you may first tell a story which can be something about the school life or family life. For instance, a grandma and a little girl came across a problem when they were walking on the street...In the middle or at the end of the story, you may ask pupils to think about what the girl should do to ask for help. This would arouse children’s thinking of questions not only for the story development but also for experience in using the Wh-question format.**

T2: **Well, it sounds interesting.**

The researcher: **For those high achievers of the class, I believe they would suggest something very quickly. And so, you may name some other middle or low achievers, including children with SEN, to suggest other possible ways to solve the problem so that they can be involved in the discussion.**

T2: **Yeah, that’s the good way to include them. OK, I’ll try.**

The above episodes indicate that the two teachers and I had constructive discussion on reflecting how pupils did, co-planning what we could do, and justifying what they did for improving children’s learning as the target they made at the beginning of this study. Their try-out actions of applying the differentiated teaching to the problematic classroom in the 5th cycle proved themselves that this “experimental” action (Lewin 1946) in action research worked pragmatically for problem solving. Meanwhile, their sustained changing actions in the 5th cycle also justified that action research promoted the process of transformation of practice (Dewey 1938), i.e. from one-size-fits-all to differentiated teaching, as argued in Chapter 1 and Chapter 3.

Cycle 6 – Review of achievement of the study

In Cycle 6, as the box of Observed Lesson 6 shown in Figure 17, the two straight lines drawn from Reflective Discussion 5 indicate the two related points. First, T1 continued to let pupils share their ideas about the topic. Second, she maintained to use the strategy of ☆ and X marks for classroom management. In Reflective Discussion 6, we reviewed the mind-map activity that children found it difficult to complete. Nevertheless, T1 was satisfied with their positive attitude during the lesson. In particular, she said that Kitty, Yoyo and Carson were noticeably improving their learning skills. Unfortunately, Ben suffered from hand, foot and mouth disease (HFMD) during the research period and it was hard for her to reflect his progress of learning. During these six weeks, T1 had shown her passion to learn, to adapt and to continuously engage herself in the reflective teaching practice. Her reflective data exhibited her achievement of professional teacher development.

Similarly, T2 and I had a meaningful Reflective Discussion 6 right straight after the taught lesson. Figure 18 shows two straight lines drawn from Reflective Discussion 5 which are related to the follow-up actions taken in Observed Lesson 6. While evaluating the lesson effectiveness (in Cycle 6), she was positive even though she observed that pupils found it difficult to finish the assigned task. She felt satisfied because they would try to do it rather than to give up.

Meanwhile, she reflected that this study first seemed to help the targeted four children with SEN but she added the following:

T2: Carson has made a big step in terms of improvement. His performance is good. Also, Nathan's motivation is much better than before. He can write more neatly and has been more interested in learning English. In the past, he only liked sport and did not seem to focus on studying. But, during these weeks, he has changed his attitude. I haven't thought that through adapting

the teaching materials – that is, breaking steps into the small ones – it can also help those who are average to *achieve* at a higher level.

The researcher: **That’s because they can feel a sense of achievement while doing the tasks you designed. The more tasks they can finish, the higher the degrees of success they will feel.**

T2: **It’s the matter of *confidence* we help them build up during the process of learning. I can also see the improvement of Kitty during these few weeks. She really has showed her effort to study. She’s passed all English exam papers in this term. Yoyo is still the same, as sometimes she was lazy. But sometimes she would finish everything on her own. Only Ben is still lacking behind. It may be because he’s been absent for about four weeks or because his mother doesn’t want to urge him to study harder.**

What T2 remarked was that the adaptive approach was good for pupils’ learning. She also shared that after engaging in this study, it helped enhance her lesson planning skills and her ability to help pupils achieve the learning objectives. She proved herself that she was a reflective practitioner (as the notion explained in Chapter 2) in ways that she was willing to adopt opinions (in the collaborative work with me), to make change and to self-regulate with the passion to improve her teaching.

Having said that, in doing this collaborative action research (for the continued six cycles), the two teachers and I proved that we had committed ourselves effectively to evaluate, to plan and to justify whether the changed actions in differentiated teaching that worked for addressing the identified problems or not. Within these six cycles, we had established the trust relationship as *critical friends* of doing this collaborative action research, in which it also justified the theory of communicative action (Habermas 1984) as argued in Chapter 3. That was we shared the “democratic” conversations and made professional judgment (ibid) in our reflective discussion. According to Hope et al. (2003), we, as the research practitioners, owed the

“authenticity” (ibid) to discern *what* and *how* the changed action of differentiated teaching was effective to improve the situational problems. Therefore, the above data were *authentic* to justify the achievement of this study because we were the insiders of the classroom that we co-investigated the problems and co-searched for effective resolution to achieve the purpose of the study.

Summary of the Chapter

This chapter reports both quantitative data as well as qualitative data collected from the two teacher-participants and I within our collaboration work during the six research cycles. The findings include the three-set of data as: teachers’ reflective diaries (Section 4.1), live-class observation (Section 4.2) and reflective discussion (Section 4.3). As mentioned in Chapters 2 (Literature Review) and Chapter 3 (Methodology), the aim of action research is to bring changes to improve professional practice. Therefore, the analysis of their change in action is important as laid out in the following Chapter 5.

Chapter 5: Data Analysis

This chapter analyses findings collected from the 3-form of data as presented in Chapter 4. Thinking back on this study and the questions concern identified at the outset, the findings inform an answer for improving problem in today's inclusive classroom. That is, the teachers *made change* from using "one-size-fits-all" curriculum to differentiated teaching for problem resolution (Chapters 1, 2 and 3). Data displayed in Section 4.1, Section 4.2 and Section 4.3 show that the changed actions of the teachers bring in positive *impact* on improving problem of pupil learning.

As noted, change is cardinal in action research (Chapters 1, 2 and 3). *Impact* of the teacher change also signifies pragmatic **effect** on enhancing their professional practice. Therefore, analyzing **change in action** of the teachers is central to this chapter. Detailed analysis concerning their *change* and *impact* of such the pragmatic effect of the study are arranged after the explanation of analytical approach as follows:

The "All-in-one" theoretical approach of analysis

In Chapter 3, the "theoretical approach" for thematic analysis Braun & Clarke (2006:86-93) proposed is remarked for the use of this study. As explained, action, meaning and effect are key components in action research (Section 2.1 and Section 3.3). Hence, the analytical approach of this study is based on Lewin's concept of action research system to examine *meaning* of the teachers' changed action and *impact* of pragmatic *effect*, in which the "theory-driven" approach (ibid) is integrated into the framework analysis as below.

According to Braun & Clarke (2006), data analysis starts from constructing codes of action and patterns. Although they have suggested six phases of such the process of development, three component-stages are observed as:

- a) initiating codes (Phase 1 and Phase 2);
- b) setting themes (Phase 3, Phase 4 and Phase 5); and
- c) producing the report (Phase 6).

While reviewing the 3-form of data generated from the six research cycles, I have gone through the above 3-step of developmental stages for data analysis. In the first step, codes can be initiated precisely as the approach of “theory-driven” (ibid) is employed. That said, Lewin’s three core elements of “*planning*”, “*action*” and “*results of action*” (1946:35-38) are set for three codes of actions for analyzing the collected data (see Section 2.1 and Section 3.3).

First of all, Code 1 of “planning” (ibid) is about data of initial planning and re-planning of action in each cycle, i.e., from Cycle 1 to the end of Cycle 6. The initial planning of Code 1 is data that the teachers and I co-planned together for launching this collaborative research study. Details can be referred to Section 3.2 and Section 3.3.

For example, in reviewing the existing complex situation of the classroom in our first meeting (of my school visit), the teachers mentioned about four pupils: Carson, Ben, Kitty and Yoyo. They were children with SEN who needed to support. In our discussion, we came to reach the initial “planning” (Code 1) that the teachers set target for improving their learning (see Chapter 3). When we started this collaborative research study in Cycle 1, data showed that problems were identified in the class (Section 4.1, Section 4.2 and Section 4.3). Therefore, we re-planned what to do for intervention in the next cycle. Such the act of “re-planning” is Code 1 of action within the spiral system of action research. *Meaning* of “planning” (ibid) is to prepare the action plan for improving the identified problems (Section 1.3, Section 2.3.1, Section 2.3.2, Section 3.1.2 and Section 3.1.3, Section 3.2.2 and Section 4.3).

Code 2 of “action” (ibid) is action for change. *Change* is the icon of action research (Section 2.1 and Section 2.2). The 3-form of data illustrated in Section 4.1, Section 4.2 and Section 4.3 are inter-related and elicit the teachers’ action for change in their classroom practice. In particular, from Cycle 2 onwards, the teachers adapted their teaching approach and sustained their change in action to the end of Cycle 6.

For instance, in order to support those low achievers of the class, T1 tried out new action of designing a step-by-step worksheet and adapting a lesson activity in Cycle 2. The act of new action is her *change in action* as Code 2 – to which she applied the learnt strategies of differentiation in helping the targeted four children. For details, see Section 5.1 and Section 5.2. Correspondingly, data also displayed T2’s new action of differentiated teaching from Cycle 2 to Cycle 6. Analysis of her *change in action* (Code 2) can also be referred to Section 5.1 and Section 5.2.

Accordingly, Code 3 of “results of action” (Lewin 1946) is the *impact* of pragmatic effect of the teachers’ change. Data showed that while the teachers made change in action (Code 2), effect on improving pupil learning noticed. For example, as the differentiated teaching approach was used from Cycle 2 onwards, Yoyo (the child with SEN) expressed her interest in lesson activities/tasks (see Section 4.2, Section 4.3, Appendix 16, Appendix 18 and Appendix 31). Compared with her past negative learning behaviour, the teachers’ changed action (Code 2) resulted in arousing her motivation to learn as well as improving her learning performance. For more details, see Section 5.1 and Section 5.2.

These three codes of actions appear in the spiral form of action research with the feedback action inputting into the next cycle for “change” (Lewin 1946). Such the continuous actions exhibit *patterns* of the cyclical form of action (Section 4.1, Section 4.2 and Section 4.3). As such, data analysis of this study focuses on change in action and effect induced within the six on-going research cycles, not the single code of action.

This is the difference between “theory-driven” approach and “data-driven” approach for thematic analysis (Braun & Clarke 2006:86-93).

Having said that, in the second step, for theme setting, it relates to the framework of the study (Chapters 1 and 3). While using the above codes, interpretation of the 3-form of data is *all-in-one* within the spiral form of action research system itself. For more details, see Section 3.1.2 and the aid of the 3-intersected circles illustrated in Figure 7. Analysing data in this way of “theoretical approach” (ibid) is, therefore, achieving the theme of study which has been already established in Section 1.3, Section 2.3, Section 3.1.2 and Section 3.1.3. That is about two aspects of the theme: a) change in action of the teachers – from planning (code 1) to action (code 2) for applying differentiated teaching to address problem in the inclusive context of Hong Kong school environment; b) outcomes of the study - how the change improved classroom practice (code 3) for betterment of pupil learning and teacher professional development.

Lastly, in the third step of writing the report, *meaning* of change in action and impact of pragmatic *effect* are the core contents of this chapter. Hence, the following sections of data analysis contain two parts: 1) the changes the teachers made for problem solving (Section 5.1); and 2) the changed effect brought on professional teacher development (Section 5.2). Both parts are crucial for the argument of the study, as they give answers to research questions 1 and 2 respectively. Reflecting the questions underpinning the study, engaging in collaborative action research led to a series of observable changes in the teachers’ professional practice which in turn helped to improve student learning as the professional development literature suggests (Chapter 2). This is also in line with the effects of professional teacher development anticipated by the EDB of Hong Kong (Chapters 1 and 3).

5.1 Analysis of the Teachers' Change in Action

During the six research cycles, the teachers changed to use the approach of differentiated teaching to address diverse learning needs of the pupils. Their act of *change in action* manifests *meaning* of application of differentiated strategies they learnt some years ago in TDP at practice level. As noted, differentiation is about adapting curriculum, process and product (see Chapters 1 and 2). Accordingly, *range* of differentiated strategies they applied including three specific areas of: topic contents, process of learning as well as the design of tasks and assignments. As data shown in Section 4.1, Section 4.2 and Section 4.3, the teachers remarked that *changing* to use these strategies helped not only accommodating the four children's learning needs, but also enhancing other pupils' performance (the middle as well as the high achievers in the class). Details of the analysis are as follows:

5.1.1 Breaking down the learning steps to invite all learners

With reference to literature (as noted in Section 2.1 & 2.2), action research gives space for teachers to reflect and to react (in action) for improving classroom practice. As engaged in this collaborative action research, the two teachers and I had reflective discussion each time right straight after the Live-class Observation. From Cycle 1, while examining the problems they faced in the classroom, we shared ideas and found effective measures for helping pupils learning better. During our discussion, the teachers were able to reflect that they needed *to adapt the task* by breaking it into several *small steps* for including the low achievers and children with SEN to learn.

For example, at the beginning of this study, in Reflective Discussion in Cycle 1, T1 pointed out that, **"I agree with you that most pupils do not understand what to do in writing a story. Especially, Yoyo, it is their parents who help finish her homework."** And therefore, in our co-planning of the next lesson, she said she would break down the steps and give more guidelines for helping those low achievers and

children with SEN. Hence, in the following cycles, she demonstrated her adaptive teaching in differentiation.

In particular, she designed a new worksheet in Cycle 3 that contained three steps for writing a story: (1) drawing a picture in the box; (2) finding relevant phrases from the textbook and (3) writing complete sentences for their new story-ending (Appendix 17). In comparison with the blank worksheet given in Cycle 1 (Appendix 11), this adapted worksheet differentiated three levels of difficulty from a simple drawing to complicated sentence writing. With the varied instructional design in the new worksheet, pupils knew where to start and what to do. She pin-pointed that,

When we thought of the design of worksheet, I did work deliberately to adapt the steps from big to small in order to let children achieve the task. And I find children enjoy learning now, as their confidence have been established. I think it is valuable in the process of learning. In particular, I can tell Carson's attitude has changed from passive to active during these few weeks. (T1 said)

She commented that in March, Carson failed most of the subjects in the mid-term exam. It seemed that he had given up learning. However, when we helped him work on the step-by-step worksheets, he was willing to do so and was able to finish all parts of the worksheet by himself. She added that,

Pupils give up learning easily when they do not understand what to do. If we want to help them learn better, we have to *adjust the curriculum* as well as the tasks best fit *for their different abilities*. If they enjoy the process of learning, they would discover more and initiate more on their own. (T1 said)

The change that T1 made was to provide an “entry point” (Tomlinson 2014:18) that enabled all pupils to approach the first step of the process of story-writing. As Ho (2007) indicates, children with specific learning difficulties (dyslexia) find it difficult to write Chinese words. However, for many children, drawing a picture is more

straightforward than writing sentences to express their ideas. Thus, T1 thought that using this “entry point” (ibid) of drawing could arouse pupils’ interest in learning. As observed, every pupil was on-task (in step 1). Even Yoyo, who used to do nothing in the class, could now draw a small picture on her worksheet (Appendix 18b). T1 found that the differentiated strategy worked and she continued to use it in the remaining research cycles.

Similarly, T2 also provided an entry point to accommodate the low achievers and children with SEN. After our reflective discussion in Cycle 1, she too modified the lesson activity in Cycle 2. As shown in Appendices 23 and 24, she first intended to help pupils revise the spelling of keywords (number words as in Question 1) and then to construct correct phrases and sentences in Questions 2 and 3. What had changed in T2’s action was that she gave hints about some of the English letters, which is known as “cuing” (Salend 1998, 2005). She used this strategy to get pupils started on the warm-up exercise of spelling on their own rather than immediately assigning group work/pair work when they did not know what to do as observed in the group activity in Cycle 1.

That entry point of a warm-up exercise (vocab spelling) had two significant meanings. First, it provided “access” for them to approach the lesson content and process (Tomlinson 2001, 2014). T2 said most of the tasks set in the scheme of work were group activities. The smart children would finish the tasks quickly, leaving the “strugglers” (ibid) behind in the group. However, with the given entry point, children had the “access” (ibid) to experience the process of learning on their own. Second, it established pupils’ self-confidence in learning English. In my lesson observation, the low achievers and children with SEN were able to fill in the missing letters without hesitation and, like other pupils in the class, they could move on to the next step (the sentence pattern in Question 2).

T2's new design in the adapted worksheet aimed at differentiating levels of difficulty for pupils with different learning profiles and readiness (ibid). For those middle and high achievers, they should finish Question 3 (sentence order/structure) and Question 4 (the pair work of conversation) so as to fulfill the lesson objective with group work activity. In preparing the warm-up exercise (Question 1), T2 did not miss anything in the pre-set scheme of work that the English department required. Providing an entry point does not involve labelling or any side effects of discrimination for any particular types of pupils. On the contrary, it has the good function of inviting all children to complete the assigned task, which helps establish their sense of achievement (Cooper et al. 2017). As she reflected,

Carson has made a big step in terms of improvement. His performance is good. Also, Nathan's motivation is much better than before. He can write more neatly and has been more interested in learning English. In the past, he only liked sport and did not seem to focus on studying. But, during these weeks, he has changed his attitude. I haven't thought that through adapting the teaching materials – that is, *breaking steps into the small ones* – it can also help those who are average to achieve at a higher level. (T2 said)

That said, by breaking down the learning steps, it helped successfully inviting all pupils, including the high, middle and low achievers (children with SEN) learning together. As mentioned, action research is for improving teaching practice. What makes the positive effect happen is that this action research allows me, as the “critical friend” (Day 1997; Fullan 1995), to work collaboratively with the teacher-participants. Within our reflective discussion, as explained in Chapter 3, the theory of communicative action (TCA) works among us to enable us to co-reflect and co-plan for improving classroom practice. In applying differentiated teaching, we tried out to break down the steps of the assigned tasks and activities to invite all pupils for learning. Their trial resonates with Suleymanov's statement of, “while making one step in learning, a child makes two steps in development” (2015:85). In fact, there is no magic

that teachers can obtain a sudden change and/or improvement by all pupils. Rather, through deliberate consideration and precise adaptation, teachers can bring the “equity of access to excellence for every student” (Tomlinson 2014:27).

5.1.2 **Modifying a variety of tasks and activities in differentiated teaching**

Before started this action research, the two teachers solely followed the scheme of work and the e-book materials to teach. They said they scarcely thought of adjusting topic contents, tasks and activities. As Black et al. noted, “Many teachers do not plan” (2004:11). In the same way, Hong Kong teachers seldom plan to modify their lessons because of the contextual problems of large class size and student diversity (Cheng 2009; Wan 2016). They instead focused on teaching the syllabus in full and marking large piles of students’ assignments every day. That is the reason why some teachers describe themselves as working “like a cow” and they regret that they have no time to effectively plan their lessons for their students (Tang 2011:373).

However, *after* launching this study, T1 and T2 changed for not depending on using the one-size-fits-all curriculum to teach. Every week, we discussed the observed lessons and we planned what to do next. *We modified the topic contents, tasks and activities* by applying the approach of differentiated teaching to meet with pupils’ different interests, abilities and readiness (Tomlinson 2001, 2014). For example, T2 planned the new topic of *Festival* in Cycle 3. She did not follow the textbook materials. Instead, she found pictures and other materials on her own to prepare PowerPoint slides for children’s learning (Appendix 26). She also designed two pre-step worksheets of vocab-spelling (Appendix 25) for sentence writing in the topic. In Cycle 4, the children had the exam week; therefore, in Cycles 5 and 6, T2 continued to vary her teaching activities. For instance, she used video clips, the game of search and find and story-book reading about the topic of Wh-questions. The change in action she made involved the *modifying a variety of lesson activities* that aroused pupils’ interest in approaching the curriculum content and process of learning (Tomlinson 2001, 2014).

Correspondingly, T1 modified her action plan by including a group competition in Cycle 2. According to what she reflected on in our discussion, she intuitively remembered my suggestion to include some group activities for children's active learning. She then changed her original plan from *chalk and talk* to a group writing competition. As she reflected,

Today, the group competition was very impressive. I know how much pupils have done and how well they could achieve. And I could see that children enjoyed the activity very much. (T1 said)

As a result, she obtained the desired effect of learning (as noted in Section 4.1, Live-Class Observation 2). Therefore, she continued to adjust lesson activities for pair work and group discussion, such as students' sharing of their newly created story-endings (Cycle 3); solutions to the animals crossing the river (Cycle 5); and a focus on the favourite traditional Chinese toys (Cycle 6).

In contrast to what I observed in Cycle 1, the two teachers only delivered the topic knowledge in the lesson without adaptation. They were "teaching lessons, not kids" (Tomlinson 2001:10). However, after engaged in this study, they changed. Both T1 and T2 were able to proactively make changes to modify the lesson in variations that responded to pupils' different interests, readiness and learning profiles (ibid). The major change in the teachers was that they had deliberately planned the lessons to let pupils interact with them and learn on their own pace. In fact, the two teachers did not just do the reflective actions once but continuously applied what they had already learned about the differentiated strategies in the centralised TDP to the real classroom. As a result, the learning atmosphere in the Chinese and English classes had improved since Cycle 2.

Based on the observations, the two teachers' proactive planning of the lessons not only lightened up a dynamic learning atmosphere (active teacher-pupil interactions), but

also transformed their style of teaching from teacher-centred to more student-centred. Whenever they planned, they thought of how to give “responsive instructions” to children’s different learning profiles and readiness (Tomlinson 2001, 2014). Their change in action justified what literature claims that they knew *what* to do (practice) and *why* to do (theory) the re-planning of actions that helped improve pupils’ learning. Through the reflective inquiry, they experienced a breakthrough and the development of their own theory of practice (McNiff et al. 2011; Dewey 1938).

5.1.3 **Strengthening Classroom Management**

Before joining the study, the two teachers articulated the challenges of pupils’ learning behaviours. In fact, this is a common problem in the inclusive classroom according to Hong Kong teachers’ responses in recent surveys (HKFEW 2015, 2016; Chan et al. 2010; Pang 2012). When I first visited the two teachers’ classes, I found that the two teachers seemed to be “losing control of student behaviour” (Tomlinson 2001:2). They tended to have no power to stop the children’s noise and disruptive behaviour, as I reported about my school visit in Chapter 4 (Sections 4.1 and 4.2). When I talked to T1 and T2 separately in our reflective discussion in Cycle 1, they reflected on the problematic situation and came to realise that they had to improve the classroom discipline. They were encouraged to apply the *reward-punishment strategy* that actually had been established in the beginning of the year.

However, the two teachers found it hard to maintain the set rules in practice in the classroom. Children took advantage of the lenient teachers and played with their belongings during the lessons. Having said that, after our discussion in Cycle 1, the two teachers tried to reinforce the strategy of a reward-punishment system to respond to pupils’ behaviours. As noted in Section 4.3, particularly in Figure 16 and Figure 17, the lines drawn from Reflective Discussion 1 indicate the change in action of the two teachers as in the observed lessons in Cycle 2. That said, when they got my encouragement, they tried to strengthen their discipline control. For example, T1 shared that,

I observed that they were able to improve their behaviour when I gave them an X. And they continued to do well when I marked a √ on the blackboard. (T1 said)

She was delighted to find that the children were obedient and co-operative. That said, they applied the strategies to teaching and found it effectively managing pupils' learning and behaviour.

Even in Cycle 4, when pupils were taking their exams, T1 and T2 continued to give responsive instructions to manage classroom discipline. In Cycle 5 and 6, children maintained to perform well on the lessons. As shown in the photo taken in Cycle 6 (Appendix 20a), they raised their hands and demonstrated their patience and obedience when waiting to answer questions in T1's lesson. Their disruptive behaviours such as shouting, playing with their belongings and leaving their seats decreased. Although, at times, when they were working on the assigned tasks, they made noise. However, the noise was healthy because children were "on-task" to discuss the topic matters with their groupmates while engaging in the activity (Hansen et al. 2017).

What made a difference was that *before* started this study, the two teachers seemed to have no power to tackle student diversity and behavioural problems. However, *after* participated into this action research, they exercised their power of leadership to get all pupils (with different interests and abilities) learning together efficiently. This was because within our collaboration work, they got support and encouragement to try out strategies for classroom management. Their achievement reinforced their beliefs and confidence in strengthening the responsive instructions to classroom management. From Cycle 2 onward, they turned their frustration to satisfaction as they were able to manage pupils' learning as well as behavioural problems effectively.

5.2 Effect on Professional Teacher Development

This section analyses the effect of pragmatic action research on professional teacher development and provides an answer to research question 2. As the framework set in Chapter 1, 2 and 3, teachers engaged into this study as learners (Fullan 1995; Day 1997). They learnt through action research in collaboration with the researcher (as me) to make change for improving the complex classroom problems by applying differentiated teaching to address diverse needs of pupils. Their process of learning for change in differentiated teaching (as the data illustrated in Chapter 4) justified the transformation of practice in professional teacher development that benefitted pupil learning (Fullan 1995; Day 1997; Hargreaves & Fullan 2012). In alignment with the literature review in Chapter 2, the following sub-sections analyse how action research brings significant effect of the changed action on professional teacher development. That is, how this study helped increase professional capacities of the teachers in respect of knowledge, skills and attitude as below.

5.2.1 Knowledge

During the research period of six cycles, T1 and T2 demonstrated their transformation of practice. They manifested their changed perception of professionalism in teaching. As described in Chapter 2, traditionally speaking, Hong Kong teachers are textbook-bound. Bryant et al. comment that they often confine their teaching to “textbook coverage and heavy doses of homework supplemented by drill and practice tests” (2009:2). As found in this study, T1 and T2 used one-size-fits-all curriculum to feed all pupils without catering for their diverse needs in the inclusive classroom.

For example, as observed in Cycle 1 in the Chinese Language lesson, T1 assigned pupils to write a new story-ending on a blank sheet (Appendices 11,12 and 13). Pupils only received sub-headings such as time, place and content as guidelines for the writing. Without concrete hints, steps and given words, how would those low achievers and children with SEN (with dyslexia) be able to write sentences for the development

of a new story ending? When we had our first reflective discussion in Cycle 1, she came to recognize the problem as most pupils were off-task and the unwanted behaviours made the classroom in a chaotic situation. She expressed that,

I didn't think that situation would happen! If they had not yet finished writing at home, this double-period would have just been fit for the lesson objective. (T1 said)

Similarly, in T2's English Language lesson in Cycle 1, pupils had a group work to complete a worksheet about seasonal clothing (Appendix 22). The high and middle achievers in the group finished the task very quickly but the low achievers and children with SEN barely participated in the activity. T2 actually was hard to know how the "strugglers" (Tomlinson 2001) learned well or bad because there was no individual task for her to check. She reflected that,

T2: Some children can write a sentence. But some just played around and didn't participate in the activity.

The researcher: **Yes, I found that some of them couldn't write a complete sentence. Actually, it's quite difficult for us to ensure that everyone in the group puts forth the effort to construct a sentence together.**

T2: Right. Some low achievers, especially those children with SEN, need more individual help with writing.

At this point, we identified the problems as there was no differentiation to accommodate "students' varying readiness levels, varying interests, and varying learning profiles" (Tomlinson et al. 1998:54). Apart from those smart pupils in the class, the rest of children were off-task most of time. Because of the inefficient teaching practice, those low achievers and children with SEN lagged behind and demonstrated unwanted behaviours (Scott 2016; Cooper et al. 2017). These findings support Girvan et al.'s (2016) argument that the traditional TDPs are not effective for improving classroom practice. Since T1 and T2 had attended the TDPs some years

before, they had already learned about adaptive strategies. Yet, they had not applied any changes to their daily teaching.

What made this study valuable is that while participating in this collaborative action research, T1's and T2's thoughts changed. In our reflective discussions, we placed an emphasis on how to help pupils with different abilities improving their learning. From Cycle 2 onward, the teachers became more able to perceive the benefits of differentiated teaching as they realised the *one-size-fits-all* worksheet was not suitable for all pupils' needs. As mentioned in Section 5.1.1, they tried to make "decisions regarding curriculum content and sequence of instruction" (Houtveen et al. 2001:393) to adapt teaching materials for pupils with different needs. Their teaching method changed from task-oriented (teaching the lesson) to pupil-oriented (teaching children). As Suleymanov stressed, "The fundamental shift from discipline-centred educational traditions towards child-centred education is a prerequisite for inclusion education" (2015:85). For example, T1 provided an "entry point" (Tomlinson 2014:18) to include those "strugglers" (ibid) who were learning alongside the high and middle achievers (see Section 5.1.1). In addition, she asked challenging questions to let pupils think deeply about the topics.

As reflected in Cycle 5, she shared her belief that those smart pupils would like to encounter challenges when learning. That was why she asked them to think about how the animals could move their bodies across the river in relation to their size. In return, she received good answers from those high achievers (see Section 4.2). She gave her pupils an opportunity to apply "higher-order thinking" (Yeung 2016) in the critical point of the passage. In doing this, she proved to herself that she could perceive and actually absorb the concept of differentiated teaching. That explained why she reflected at Level 4, the high frequency level of satisfaction, for all 10 items in her reflective diary in Cycle 5. This was because she could successfully provide different means of "access" (Tomlinson 2014) for some pupils who needed the "entry point" (ibid) and some others who needed "higher-order thinking" (Yeung 2016) in the "mixed-ability" classroom (Tomlinson 2001).

Likewise, within our collaboration work, T2 also had opportunity to try out the differentiated strategy. As in Cycle 2, when I reflected, **“We’d better set different levels of difficulty to cater for the diverse needs of pupils”**. T2 then asked, **“Do you mean there should be different parts of the task on the worksheet?”** (in Reflective Discussion 2a) Then we tried to develop a new worksheet that included a task with four levels of difficulty (Appendices 23 and 24), in which question 1 was the “entry point” (Tomlinson 2014) for “strugglers” to start (Tomlinson 2001). Meanwhile, in order to arouse pupils’ learning interests, she used different shapes for designing the four questions. Specifically, she made a circle for Question 1, a square for Question 2, the fragmental pieces of sentences for Question 3 and the format of Q & A for Question 4. These variations differentiated not only the levels of difficulty but also the styles of the task-design to draw children’s attention. As Lawrence-Brown remarked,

Differentiated instruction is as important for students who find school easy as it is for those who find it difficult. All students benefit from the availability of a variety of methods and supports and an appropriate balance of challenge and success (2004:37).

T2’s varied modifications resulted in making the topic contents and process of learning approachable to all pupils (Tomlinson 2001, 2014). As she reflected in Cycle 2, even Yoyo was able to work on the adapted worksheet in the lesson. She proved to herself that she cognitively *knew what* and *knew how* to improve her teaching. As observed from Cycle 2 onward, the two teachers’ change enhanced pupils’ motivation and confidence in learning. This effect came from their continuous reflective actions as they learned through the process of “reconstruction of experience” (Dewey 1933:87).

This is what the “Practical wisdom” (McNiff et al. 2005:4) the teachers gained from this study. As Schön explained, within the process of change, “we define the decision to be made, the ends to be achieved, the means which may be chosen” (1983:40). In

other words, through action research, T1's and T2's rationale of "what to do" (theory) and "how to do" (practice) had been developed (McNiff et al. 2011; Farrell 2013). They showed their paradigm shifted from *textbook-bound* to *adaptive teaching in practice*. Their change exhibited their increased capability of "the new mode of perception and solving of problem on their own – a change of pattern" (Lesjak 2014:80). In other words, their perception of adopting differentiation approach had improved. It was not due to the effect of attending the TDPs but participating into the collaborative action research of this study. As Nijhawan believes, action research bridges the "gap" between theory and practice in teacher development (2017:10).

5.2.2 Skills

Instructional Practice

Within the six reflective cycles, the two teachers gained the positive effect of skills enhancement in applying differentiated teaching to classroom instructional practice. In the case of T1, she modified her instructions to best suit the pupils with SEN (with a specific Chinese language learning difficulty). As mentioned in Sections 5.1.1 and 5.2.1, in Reflective Discussion 1, as we identified the problem, we then tried to design the supplementary worksheet of vocab-writing, in which the idea of breaking down the steps (Kritikos et al. 2018) helped pupils achieve each part of writing difficult Chinese words (Appendices 14 and 15). She mentioned that Yoyo, Carson and Kitty (children with SEN) had not previously been able to correctly write most of the words in the textbook.

Yet, from Cycle 2, T1 noticed that pupil learning improved. She remarked that while trying to do the step-by-step worksheet, the three children with SEN were able to identify parts of different combinations of the structure of each word (up to three parts of an ABC pattern, as shown in Appendices 14 and 15) and could follow instructions to write the words in the correct sequencing (Kritikos et al. 2018). T1 observed that pupils were interested in writing in this way. In addition, she found that other children

with middle and high abilities also liked to work on the step-by-step worksheet. She believed this simplification of a writing task did not slow down the teaching pace of the lessons. She expressed that,

Pupils' motivation, as a whole, has been enhanced as they enjoy the order of writing the Chinese vocabularies in sequential order. In the past, I haven't thought of preparing this kind of step-by-step worksheet. And I don't know whether pupils can really write the vocabularies in the correct order on their own. But now when I check their work (worksheet), I can tell whether they can or cannot get the right way of writing (the Chinese words). And I am surprised to find their positive attitude of learning.

(T1 said)

As she observed, the change of adaptive teaching accelerated the learning pace of low achievers and children with SEN (Suleymanov 2015). She proved that she was capable of putting "practical knowledge in action" (Shawer 2010:182).

Likewise, T2 also modified her English worksheet by splitting the task procedures into small steps for helping low achievers. As discussed in Sections 5.1.1 and 5.2.1, she could apply the differentiated strategy to design the four-step worksheet for helping pupils with different learning abilities (Tomlinson 2001; Lawerence-Brown 2004). She asserted that,

Not merely these pupils with SEN but other children in the middle level of ability also show their interest and confidence in learning. I did see children were more willing to do the worksheet now. They also try to engage themselves in the group work. I know I have learnt how to adapt something from small to big when I think of Carson and Yoyo. (T2 said)

From Cycle 2 onward, she continued to adapt interesting topics and teaching materials. As mentioned, she modified the topic of *Festival* in Cycle 3 (Appendices 25 and 26), the *Wh-questions* in Cycle 5 and *Family Story* in Cycle 6. Moreover, in Cycle 4, when children were participating in the speaking exam, T2 provided individual help to the children with SEN. In the photo (Appendix 27), T2 was pointing out each word for Carson (the child with specific learning difficulty) to read aloud in the exam. This is what the principle of differentiated instruction means in regard to benefitting pupils' different ability levels and "learning profiles" (Tomlinson 2014:19).

Through this pragmatic action research, the two experienced teachers demonstrated how to apply the strategy of differentiation at hand. They learned technical skills for how "to shape curriculum according to their contexts" in the inclusive classroom (Shawer 2017:174). Their professional skills of adapting curriculum and instructions in teacher development were noticeably developed.

Classroom Management

In regard to classroom management, as T1 and T2 learned the adaptive strategies to get pupils on-task (Cooper et al. 2017; Delceva 2014), children's disruptive behaviour sharply decreased from Cycle 2. In addition, they used the reward-punishment system (point-accumulation/extraction) for managing classroom discipline. For example, T1 gave a ★ or an X in response to pupils' good or bad behaviour respectively and she found the result was positive. Similarly, T2 applied the same strategy, but at first she only put a ✓ for those pupils who were doing well. The unwanted behaviours still occurred in the classroom. In the second cycle, she then tried to use ✓ and X to strengthen her classroom management. She offered this reflection:

When I responded to pupils' behaviours by giving ✓ or X, the classroom discipline sharply improved. Well, I get used to merely give ✓ to those doing well. I seldom give X, as it seems like a kind of punishment. But now I find

both do work. Children need to learn when to behave well when I give X to alert them. (T2 said)

Indeed, this strategy of behaviour modification (Chandler et al. 2010) is not new to teachers in the field. Leko (2015) also conducted a study regarding how the reward system could effectively raise students' motivation in the diverse learning needs of classroom. In the same way, T1 and T2 considered that children could improve themselves in response to the given marks of ✓ and/or X. The learning behaviours exhibited in Class 2D reached the desirable conditions as below:

(a) attending to the task and materials, (b) engaging in appropriate responses (e.g. reading aloud, looking at the teacher, writing), (c) requesting assistance in an acceptable manner, and (d) waiting after assignment completion or between activities by remaining seated and quiet (Hansen et al. 2017:634)

In Appendix 20a, the photo showed that children maintained to raise their hands and to wait for answering questions without shouting in Cycle 6. It was because T1 continued to use the learned effective strategies for classroom management. Simultaneously, because of the improved classroom discipline, the reprimand statements of the two teachers had been reduced. Meanwhile, both T1 and T2 mentioned that the four pupils with SEN were previously inattentive when instructions were given. However, during the action research period, these pupils reacted positively to their instructions. The teachers applauded Carson and Kitty for their improved learning progress.

Having said that, the two teachers achieved their target setting for the action research (Appendices 5 and 6). Before starting the collaborative action research, the pupils of Class 2D were noisy and frequently displayed off-task behaviours in both the Chinese and English lessons. When the teachers implemented the action research, I observed that pupils could self-regulate their behaviours according to the teachers' adaptive strategies by the end of the research period. The changes applied to the teachers'

classroom practice resulted in pupils' improved academic and learning behaviours (Houtveen et al. 2001; Cooper et al. 2017).

5.2.3 Attitude (Motivation and Morale)

When engaged in this study, the two teachers and I worked together to transform practice (Dewey 1938). As Farrell believes, collaborative action research helps reduce teachers' frustration and increase their belief in "collaborative mentality" (Farrell 2013:133). T1 shared the following:

In fact, I learned how to prepare the step-by-step worksheet many years ago. And I know pupils enjoy playing games like the competition we had today. But somehow, I'm very busy for the school administrative work as I am the SENCO of the school. I really can't spare any extra time to think about group activities on my own. But *since you have co-worked with me, we think together and I can work out once again what I have learned before.* Without your help, I honestly would not have had time to think and to design any extra worksheets for pupils. (T1 said)

That said, this collaborative action research enhanced her motivation to make change as she focused more on pupil learning. That is why she initiated a group activity for pupils to compete writing adjective phrases during the lesson in Cycle 2 (as shown in the photos, Appendices 16a) and 16b). In our reflective discussion, she expressed that while children were working on their individual task (writing adjectives in the worksheet), she thought, "*Why not get them involved in a group competition to present their answers as a game?*" Her intuition in the middle of the class proved that she could act out Schön's (1983) concept: "*reflection-in-action*".

As argued in Chapter 2, this important concept of reflection within the process of action (practicing) is rarely revealed in the literature. Rather, most studies have reported reflection-on-action (after the taught lesson) (Feldman et al. 2018; Greenwood et al.

2007; McNiff et al. 2011; Farrell 2013; Nijihawan 2017; Rauch et al. 2014; Reason et al. 2008; Stern et al. 2014). Yet, in this study, T2 served as a significant example of the effect of reflection-in-action when she made a precise decision about the pragmatic action (Dewey 1938; Schön 1983) during a moment of practicing to enlighten pupils' active learning. She specified that she could remember my suggestion of varying lesson activities and, therefore, she tried to add the group competition in which she could check children's individual work because they would take turns writing their answers on the whiteboard.

Even though Yoyo could not write a word (Appendix 16b), she was involved in the game and was not left alone in the class. The joyful atmosphere of learning surprised T1. Although the children were excited, there was no disruptive behaviour in the class. That increased her confidence in applying adaptive teaching because she realised that getting pupils on-task would improve their learning behaviour (Hansen et al. 2017). Meanwhile, her enhanced confidence reflected her teaching efficacy, which relates to Bruce et al.'s (2008) model (Chapter 2, Section 2.3.1.2). They consider that with the input of constructive feedback from a peer, teachers have "greater potential for enhanced goal setting, motivation to take risks, and implementation of challenging teaching strategies" (Bruce et al. 2008:348).

Similarly, as committed in this study, T2 worked with me to adjust whatever she could for pupil betterment proactively. Her efforts to adapt materials in every cycle really surprised me. As she reflected,

I've learned to review my teaching day by day now. That is not only after the lesson but during the lesson whenever I see what children need in their learning. Automatically, I will think of making something new for them in the next lesson. (T2 said)

In the above statement, T2's enthusiasm for best practices is apparent. She gave another good example of Farrell's notion of action research for teacher development. As he highlighted, action research helps "increase morale and ultimately lead to more job satisfaction" (Farrell 2013:133). T2's sharing informed us that she enjoyed teaching. She affirmed that she would continue to adapt teaching and remain in the field rather than making a "career exit" (Fessler 1995:176). From what the teachers expressed, this collaborative action research increased their job satisfaction as well as their motivation for change in teacher development (Bruce et al. 2008).

Summary of the Chapter

In analysing the data displayed in Chapter 4, this chapter exhibits the central argument of the dissertation that action research works for teachers to improve classroom practice that benefits pupils' learning. The thematic analysis is based on Lewin's concept of action research system to interpret *meaning of action* and *impact of pragmatic effect*, in which the "theoretical approach" (Braun & Clarke 2006) is employed. In Section 5.1, it analyses the teachers' change in action and answers research question 1. Section 5.2 involves the thematic analysis of *impact of pragmatic effect* on teacher development, which is based on the three parameters of teacher professional development that answers research question 2 of the study. Further discussion about conclusion of the study can be found in the next Chapter 6.

Chapter 6: Conclusion

6.1 Overview of the Study

This dissertation argues that action research enables teachers to make change for addressing the problems of student diversity in Hong Kong school environment given the challenges of the WSA to inclusion on one hand, and the apparent shortcomings of other forms of teacher education and development to adequately prepare teachers for these challenges on the other hand. As explained in Chapter 1, Hong Kong teachers need change for improving their teaching practice. In particular, it addresses the concern that 90% of them face in the challenges of the diverse learning needs and students' behavioural problems in normal schools (HKFEW 2015, 2016). Despite the fact that most of them have already attended the centralised professional TDP, run by the government, they find that their classroom practice in this area is inefficient and they work under great pressure as a result in schools (Pang 2012; Chan et al. 2010; HKFEW 2015, 2016; HKPTU 2018).

With reference to the literature, action research was identified as an effective means for problem solving and teacher development (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Reason et al. 2008; Stern et al. 2014; Rauch et al. 2014). For this reason, Chapter 2 focused on the theoretical concept of action research that was characterised as having continuous spirals of reflection-based inquiry, which could be implemented with co-researchers for problem-solving and professional teacher development (Section 2.2). With the foundation of the literature review, Chapter 3 explained the research paradigm of pragmatism in this study. Based on Dewey's (1938) theory of practice, this study emphasised the continuous reflective inquiry for change: a process of "transformation of an indeterminate situation" (Dewey 1938). The research framework included two in-service experienced teachers who participated in collaborative action research with the researcher (for six weeks on-going research cycles) to testify how they could make change through "reflection-in-action" as well as "reflection-on-action" (Schön 1983) for problem-solving at practice level.

Chapter 4 displayed the crucial data collected from the two teachers' process of change. In order to improve the problems of student diversity, the teachers co-worked with the researcher to make change to their classroom practice. The data showed their paradigm shift from textbook-bound to differentiated teaching in practice. Their change provided significant evidence that the pragmatic action research worked for them to improve problems in the complex environment of the inclusive classroom. Chapter 5 analysed the effect of change in this empirical study. The chapter first examined the teachers' changed actions derived from the systematic action research. Thereafter, the thematic analysis focused on effect on teacher development. As mentioned in Chapters 2 and 3, effect is central to pragmatic inquiry because it bears significant meaning of change (Peirce 1878; Lewin 1958; Dewey 1938; Hammond 2013; Lorino 2018). Therefore, the analytical discussion cast light on how action research empowered the teachers to make change for enhancing professional practice.

From this overview of the study, key conclusions can be drawn as follows:

First, the study demonstrates the value of *reflection* as a precondition professional change. The two teacher-participants who engaged in this action research project gained support from the researcher. They learnt through collaboration alongside the reflection already mentioned to teach better for student learning (Hargreaves & Fullan 2012). This reinforces the value of process of "reflection-on-action" as well as "reflection-in-action" identified by Schön (1938) and confirmed its application in the Hong Kong context. As Schön stresses, reflective practitioners need room to look back on their situation, evaluate their practice, and find resolution for problem solving (ibid). As Dewey emphasises, teachers learn by "doing" - which translates into "intelligent actions" (1938:37) derived from the process of reflection for "re-construction of experience" (Dewey 1933:87). These key theoretical insights are confirmed by the findings from this study.

However, as argued in Chapter 1, usually Hong Kong teachers lack space for reflection. As previously argued, this causes their classroom practice to remain unchanged as they

work under pressure caused by problems like student diversity which exists in today's school environment (see Chapter 1). Yet, through committing themselves to participation in action research, the two teachers of this study gained space for reflection and, within the collaboration alongside the researcher, the opportunity to re-plan their teaching practice. This, as Townsend elicits, was enhanced "through reflection and research informed change" (2014:8), in this case borne out in the complex environment of the inclusive classroom.

Second, action research *fills the gap between theory and practice*. As Nijhawan (2017) articulates, the teachers who participated into this study, as explained in Chapter 1, had already learnt about differentiated teaching in their heads – as they completed the government centralized TDP in regard to WSA some years before. However, as Girvan et al. (2016) argue, the one-off training of TDP had induced no practical effect of change. For this reason, the two teachers committed to this action research initiative and proved to themselves that they could make change to their differentiated teaching at a practical level. Their application of differentiated teaching to classroom practice justified that they knew what-to-do (theory) and how-to-do (practice) for improving classroom problems as relevant literature noted in Chapter 2.

McNiff et al. (2005:4) identify this as the power of action research to develop "Practical wisdom", bridging the theory-practice divide - for the two teachers were able to develop their own theories when they produced new actions in the amount with meaning. That is, particularly they showed how "to *interpret their meaning* [of action] with respect to educational goals; and to *draw conclusions for developing* their classroom practice" (Altrichter & Posch 2014:8). All of their actions were taken place in the real *context* of problematic inclusive classroom situation. That said, the teachers of this study demonstrated "*their theories of meaning [action with effect] in their conceivable capacity to transform situations*" (ibid). Their transformation of practice justifies action research empowers teachers to make change and fills the gap between theory and practice as the literature suggests (ibid).

Third, the *collaboration work* brings fruitful effect on professional teacher development. Before conducting this action research, the two teachers used the one-size-fits-all curriculum that induced classroom problems (as the data presented in Chapter 4). After they joined this collaboration action research project, the two teachers and I worked together to try to adapt teaching materials to cater for diverse learning needs of pupils. As T2 reflected,

I haven't thought that through adapting the teaching materials, that is, breaking steps into the small ones can also help those in average level of ability to attain at a higher level. (T2 said)

This is not saying that the two teachers did not know the problems of pupils' learning but they just needed support, stimulation and opportunity offered by the "critical friend" (Day 1997), that is me (as the co-researcher). Here (see Chapters 4 and 5), the theory of communicative actions (TCA) was significant and this study offers new knowledge to the field by demonstrating in detail how this operated in the Hong Kong primary school context. As the literature suggests, the dialogues accelerated effective communication in the ways described, bringing out a variety of ideas in how to re-plan lessons involving differentiation (Moghaddam 2007; Farrell 2013). It is quite understandable that teachers working alone might find it difficult to adapt teaching materials efficiently. This is what Hong Kong teachers regularly experience, finding insufficient support for teaching in the inclusive classroom as recent surveys reveal (HKFEW 2015, 2016; HKPTU 2018). Yet, this study helps to demonstrate the transformative effect on teaching practice when this unfortunate trend is reversed.

Furthermore, the two teachers included in this study gained support from their "critical friend" (Day 1997) who helped making change for improvement (see Chapter 5). As Fullan articulated, "Collaboration is essential for personal learning...People need one another to learn and to accomplish things" (1995:257). However, these things do not simply happen without appropriate facilitation. This is why T1 shared how -

In fact, I learned how to prepare the step-by-step worksheet many years ago. And I know pupils enjoy playing games like the competition we had today. But somehow, I'm very busy for the school administrative work as I am the SENCO of the school. I really can't spare any extra time to think about group activities on my own. But since you have co-worked with me, we think together and I can work out once again what I have learned before. Without your help, I honestly would not have had time to think and to design any extra worksheets for pupils. (T1 said)

According to her saying, this study successfully justifies that the collaborative action research assists teachers to gain support and growth in getting fruitful effect for professional teacher development as the literature proclaims (Feldman et al. 2018; Greenwood et al. 2007; McNiff et al. 2011; Reason et al. 2008; Stern et al. 2014; Rauch et al. 2014).

6.2 Significance of the Study

This study contributes a significant new knowledge of school-based teacher continuous professional development (CPD) to the teacher education field. That is, the teacher-participants gave authentic in-depth evidence of how they learnt through action research to apply differentiated teaching for addressing the situational problems in the inclusive classroom in the Hong Kong primary school context. They demonstrated how they developed their theories (knowledge) to know-what and to know-how (practice) from continuous reflective actions for change (Schön 1983; Dewey 1938; McNiff et al. 2011; Townsend 2014). Their engagement of the six weeks of on-going research cycles confirmed that the collaborative action research was pragmatic in our local school context that yielded fruitful effects (see Chapter 4 and Chapter 5).

Their enhancement of CPD also extended to school development. As found in the related literature, over the decades, discussions about school development have centred

on supporting CPD for teachers' learning and developing quality curriculum for school effectiveness. Studies show that enhancing teacher professional practice, via action research, gains positive *impact* on school development (see Chapter 2). In particular, Hargreaves and Fullan (2012) indicate that professional teachers are important assets of the schools because they are not only the change “agents” for advancing effective teaching, but also the curriculum developers for school effectiveness.

In this regard, our Hong Kong Government has implemented a number of school-based development initiatives since the late 1990s (Chapter 1). There have been several in-service teacher training programmes of CPD for school development run by the EDB (Cheng 1997, 2000, 2009; Lee et al. 2013). Yet, school improvement is not absence of *teacher change*. Change is about transformation of practice (Chapter 3) which is beyond attending the training programmes. That is why the issues raised in Chapter 1 and Chapter 2. The two teacher-participants of this study, however, proved that they could make quality change in curriculum development to benefit learning of the pupils (Chapters 4 and 5).

Their quality research outcome is evident to the accomplishment of school development policy of WSA (Chapter 1). McNiff et al. (2011) assert that individual teachers can make a significant difference for school improvement. Even a small-scale of investigation can bring a big effect – this is the *nature* of action research (see Chapters 2 and 3). In the same way, the pragmatic effect obtained in this empirical study furnishes a substantial example of how the teachers made change to facilitate effective “access” (using the approach of differentiation to adapt curriculum and instruction) for student learning success (Tomlinson 2001, 2014). Their in-depth qualitative research data exhibit “authenticity” (Lofthouse et al. 2016) that helps promote the implementation of the Government’s school development policy of inclusion.

6.3 Limitation

As noted in Chapter 2, action research is an effective tool to increase profession practice and staff development (Feldman et al. 2018; Greenwood et al. 2007; Kemmis 1988; McNiff et al. 2011; Moghaddam 2007; Nijihawan 2017; Rauch et al. 2014; Reason et al. 2008; Stern et al. 2014). Particularly, Greenwood et al. acknowledged that Peirce (1878), James (1904), Dewey (1931) and other contemporary pragmatists have “laid out the action approach to science as a form of human inquiry” (Greenwood et al. 2007:59). Although the meaningful effect of improvement obtained from experiments is observable, the positivists have argued that action research presents subjective showcases in small scale narrative writing which makes it difficult to prove the truth objectively (Moghaddam 2007; Hope et al. 2003; Tsafos 2014; Reason et al. 2008).

In response to this argument, it is important to consider the function of pragmatic action research. According to Greenwood et al. (2007), action research is implemented in a complex situation where human actions and reactions are not fixed but rather emergent and transactional, as James (1904) and Dewey (1931) described. Reflective practitioners involved in action research take time to search, act out and determine whether the pragmatic actions function well to achieve the research goal or not. People who are outside the research classroom are unable to understand the problematic *meaning* and *effect* of the research action. Subjectivity seems inevitable during the process of consideration regarding the effectiveness and value of the research outcomes. Meanwhile, as listed in Chapter 3 (Section 3.2.1), I found most published action research reported in small scale but lasted for a period of time (several weeks, semesters or years). For instance, Farrell (2013) recruited three English teachers in his action research team for two years. One of the teachers reflected her achievement that,

I have my own philosophy to teaching (however conscious or subconscious it may be) but this is reflected more concretely in my day-to-day choices, my practices, and preferences in teaching. I am not an indiscriminate user of tricks in the classroom. If you ask me why I have done something in the class – I am confident that I could articulate for you why (Farrell 2013:69).

The above teacher asserted that action research helped her develop her teaching philosophy critically in the real classroom. Indeed, that is what action research aims – for not merely in-depth investigation but also teacher development. Correspondingly, only T1 and T2, who engaged in this study, could explain their grounded judgement regarding why and how their pragmatic actions improved classroom practice.

In the same way, natural science and social science researchers also have to make their personal judgement for collecting useful data. Moghaddam (2007) argues that even trained expert researchers are human beings. When they record relevant actions and responses, during the process of experiments, they select what makes sense to them for their research purposes, which involves subjectivity. Their scientific research results also rarely achieve 100% validity. As Elliot (1991) comments, there is no research paradigm without bias. The focus should be on how we can minimise the errors and bias (Moghaddam 2007).

As such, in this study, in order to avoid the subjectivity of first-person self-inquiry, I increased the number of co-researchers. Scholars like Feldman et al. (2018), Greenwood et al. (2007), McNiff et al. (2011), Rauch et al. (2014), Reason et al. (2008) and Stern et al. (2014) have suggested adding more people to form a research team for action research. Moghaddam (2007) also stated that involving cooperative parties to increase the “democratic validity” (James et al. 2000 in Moghaddam 2007:237) was one of the solutions to overcome the issue of subjectivity. That was why I aimed to serve as a co-researcher in the form of collaboration work to maintain the scope of objectivity (ibid).

I went to the school every week for live-class observations of T1’s Chinese lesson and T2’s English lesson as a means to widen the data collection sources. It was just because the post-examination activities were re-scheduled from 23rd of June (as noted in Section 4.1 and Section 4.2). Then the last day of this research project was on 22nd of June,

which shortened the days of data collection during the cycle. Nevertheless, I was able to obtain data from the observed lessons as well as from the reflective discussions with the teachers on 22nd of June for six continuous cycles (including the pilot study). As I was in the classroom, I witnessed how children learned in my presence of the 2D class. Simultaneously, I was able to notice whether the teacher in the classroom adjusted the teaching materials or instructions as we discussed every week after the observed lesson. As I also participated in the process of co-planning, I knew what the teachers would do next. Therefore, I was able to counter-check their written reflection in the week for reliability. In addition, I took photos of pupils' work and lesson activities as evidence (McNiff et al. 2011). The data obtained from my class observations as well as from our reflective discussions helped justify the teachers' subjective points of views in their written reflective documents (Appendices 7-10). That is why the TCA (theory of communicative actions) works in collaborative action research as explained in Chapter 3.

Through the continuous cycles of communication, we kept exchanging our views, diminished barriers or misunderstanding and clarified *meaning* (pragmatic effect) for validation. That said, this study justified what Hammond asserted that the collaborative action research could reach the "warranted" judgement (2013:609) because the teachers and I decided together for what worked for improving the problems to achieve the purpose of the study.

6.4 Recommendation for Further Research

This study indicates how action research may nourish teacher development in the Hong Kong school environment. The success of the teachers is attributed to their participation in this pragmatic action research rather than their completion of the centralised TDP run by the government. This implies that the centralised TDP is limited in terms of empowering teachers to make change for improving the quality of teaching. As Girvan et al. (2016) indicated, the traditional TDP are not practical enough to enhance teaching practice in the complex environment of today's classroom.

Having said that, action research is recommended for the EDB to advancing teacher training programmes. There should be sections about reflective teaching, curriculum adaptation and assessment in which practicum must be added to let teacher-participants try out differentiated teaching in the full-loop of action research so that teachers can learn from doing (Dewey 1938). To extend this, school-based action research is also recommended for reinforcing professional teacher development. As the example cited in Chapter 2, Lewis et al. (2009) demonstrated the school-based project of lesson study at Highlands Elementary School (in the USA). Altrichter and Posch ascertain that lesson study is “a form of “institutionalised action research” (2014:20) that helps establishing the collaborative research culture among teachers for staff development.

At this point, reflective teaching should be promoted for staff development at a school level (Tomlinson 2001, 2014). That is, research on practice-based inquiry regarding differentiated teaching in the inclusive classroom is suggested. In fact, since 2008, the EDB has set the three dimensions of “creating inclusive cultures”, “producing inclusive policies” and “evolving inclusive practices” (CDC 2008:4) as the guidelines for the implementation of the policy at school level. However, throughout the years, studies have shown that students with SEN can just receive the “minimal” provision of more time allowance and individual help for completing the assigned tasks (Chao et al. 2017). Teachers using a “one-size-fits-all” curriculum is still common (Yeung 2010; Wan 2016). Cowne et al. (2019) comment that it does not include but exclude those students with SEN to learn. In addition, Forlin (2010) remarks that local teachers are “unprepared” for inclusion. At this point, more in-depth investigations are recommended in the areas of teaching and learning, curriculum, assessment and school management in support of the 3-tier model for students with SEN.

With the establishment of the new post of SENCO in 2017 (EDB Circular No:9/2017), apart from coordinating the school matters concerning students with SEN, the SENCO of each school indeed can help bridge the gap between the policy implementation and the school developmental practices. As such, future research on developing the

inclusive environment in relation to the contribution of the SENCO is also recommended. In other words, in response to the inadequate support for in-service teachers and students with SEN in normal schools, the SENCOS can collect views from fellow teachers, students, support staff, parents and school heads to bottom-up the policy review to the EDB. Such research can help fill the gap between the top-down policy and the development of inclusive schools at practice level.

Furthermore, as Cheng (2009) revealed, teachers in other nearby cities, such as Taiwan and Macau, where we share the Confucian culture, face similar teaching problems in normal schools. In light of this collaborative action research, either the SENCOS or any interested schoolteachers or school heads can co-work among themselves in the schools or sister schools with outside researchers to improve professional practice in developing the “differentiated classroom” (Tomlinson 2014). It is believed that carrying out reflective inquiry (Dewey 1938; Schön 1983) can produce more significant evidence for enhancing the quality of education in Hong Kong as well as in other cities in Asia.

Final Thoughts

Teachers need support and growth. Considering the rapid changes of educational policies in Hong Kong, school teachers should learn continuously to modify their teaching for good practices. While conducting this research project, I realised that experienced teachers might think that they have *already* but actually *not yet* learned about how to manage student diversity. It is because according to Dewey, teachers learn from “reconstruction of experience” (1938:77), rather than repetition of experience without reflections and reactions for adjustment (Lorino 2018). That was the reason why T1 and T2 set their targets to improve pupils’ learning as well as classroom management in this study (Appendices 5 and 6). In saying this, I admired T1 and T2 because they were diligent teachers who endeavoured to keep learning for the sake of improvement. Within our participatory collaboration, I experienced how Habermas’s

theory (TCA, 1984) worked because the critical friendship (Day 1997) enabled us to try out pragmatic actions for change.

The success of this study indeed depended upon the teachers' personal autonomy, which induced an amazing effect on the paradigm shift of differentiated teaching in practice. In doing this collaborative action research, along similar lines to those western researchers in the literature, I was delighted to achieve a fruitful *win-win* outcome: teacher development as well as pupil-focused learning improvement.

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Appendices

Appendix 1 – Report 2014 - Panel on Education Subcommittee on Integrated Education

Number of students with SEN studying in public sector ordinary primary and secondary schools by major SEN types
from the 2009-2010 to 2013-2014 school years

School year	School level	Specific learning difficulties	Intellectual disability	Autism spectrum disorders	Attention deficit/Hyperactivity disorder	Physical disability	Visual impairment	Hearing impairment	Speech & language impairment	Total
2009-2010	Primary	7 910	760	1 480	1 490	170	50	340	1 520	13 720
	Secondary	5 050	710	570	740	190	90	470	180	8 000
2010-2011	Primary	8 550	770	1 980	2 000	210	50	330	1 480	15 370
	Secondary	6 430	810	780	1 250	230	90	450	230	10 270
2011-2012	Primary	8 430	780	2 320	1 950	140	40	310	1 970	15 940
	Secondary	7 850	940	1 050	1 790	250	110	490	210	12 690
2012-2013	Primary	8 390	760	2 840	2 450	130	30	270	1 940	16 810
	Secondary	9 050	930	1 310	2 330	250	100	420	190	14 580
2013-2014	Primary	8 190	750	3 310	2 850	120	30	260	1 880	17 390
	Secondary	9 890	930	1 660	3 010	240	100	400	210	16 440

Source : Controlling Officer's Reply Serial No. EDB356 for the special meeting of the Finance Committee to examine the Estimates of Expenditure 2014-2015

Appendix 2 – Ethics Form

U of Bristol

GSoE RESEARCH ETHICS FORM

It is important for members of the Graduate School of Education, as a community of researchers, to consider the ethical issues that arise, or may arise, in any research they propose to conduct. Increasingly, we are also accountable to external bodies to demonstrate that research proposals have had a degree of scrutiny. *This form must therefore be completed for each piece of research carried out by members of the School, both staff and students*

The GSoE's process is designed to be supportive and educative. If you are preparing to submit a research proposal, you need to do the following:

1. Arrange a meeting with a fellow researcher

The purpose of the meeting is to discuss ethical aspects of your proposed research, so you need to meet with someone with relevant research experience. A list of prompts for your discussion is given below. Not all these headings will be relevant for any particular proposal.

2. Complete the form on the back of this sheet

The form is designed to act as a record of your discussion and any decisions you make.

3. Upload a copy of this form and any other documents (e.g. information sheets, consent forms) to the online ethics tool

at: <https://dbms.ilrt.bris.ac.uk/red/ethics-online-tool/applications>.

Please note: Following the upload you will need to answer ALL the questions on the ethics online survey and submit for approval by your supervisor (see the flowchart and user guides on the GSoE Ethics Homepage).

If you have any questions or queries, please contact the ethics co-ordinators at: gsoe-ethics@bristol.ac.uk

Please ensure that you allow time before any submission deadlines to complete this process.

Prompts for discussion

You are invited to consider the issues highlighted below and note any decisions made. You may wish to refer to relevant published ethical guidelines to prepare for your meeting. See <http://www.bris.ac.uk/education/research/networks/ethicscommittee/links/> for links to several such sets of guidelines.

1. Researcher access/ exit
2. Information given to participants
3. Participants right of withdrawal
4. Informed consent
5. Complaints procedure
6. Safety and well-being of participants/ researchers
7. Anonymity/ confidentiality
8. Data collection
9. Data analysis
10. Data storage
11. Data Protection Act
12. Feedback
13. Responsibilities to colleagues/ academic community
14. Reporting of research

Be aware that ethical responsibility continues throughout the research process. If further issues arise as your research progresses, it may be appropriate to cycle again through the above process.

Name(s): Sheung-kwan LEUNG (EdD Hong Kong cohort 18)

Proposed research project: Action Research for Classroom Improvement: Embracing Reflective Practice for Teacher Development

Proposed funder(s): Self-financed

Discussant for the ethics meeting: Ms Kitty HO

Name of supervisor: Professor Justin Dillon

Has your supervisor seen this submitted draft of your ethics application? Y

Please include an outline of the project or append a short (1 page) summary:

[Please refer to the next page.]

Ethical issues discussed and decisions taken (see list of prompts overleaf):

We have discussed that the researcher should first visit the target school and meet with the school principal and teachers to be involved in the research before the launch of the project. Information given to the principal and teacher participants should include purpose of the action research, methodology and ethics responsibility to be taken care of by the researcher during the research cycles. All names are kept anonymous in the report and written consent form should be prepared for the participants as well as parents of students concerned. During class observation, teacher-students' interactions will be noted and if photos or video will be recorded, students' faces should be blurred, hidden or covered up. All data collected should be kept strictly confidential for research purposes. Report writing is, therefore, for the academic purpose of EdD dissertation only. The researcher will not disclose anything for any other purposes. Even the two teachers (T1 and T2) should not get to know each other's process from the researcher within the research period. If any colleagues of the school and/or academic organizations are interested in knowing about the research, they can contact the school principal for information. In addition, the school principal has the discretion to decide if there is the need to get one or two senior teachers involved so as to facilitate sustainable professional development in future. In saying this, a kind of learning community might be developed with their curriculum leader as a core member. Moreover, student self-evaluation of their learning should be included as part of the data source. Since the role of the researcher is co-worker of the teacher participants, trust relationship between T1/T2 should be a prerequisite so that the teachers will feel free to participate in the reflective practice for improving their classroom practices.

If you feel you need to discuss any issue further, or to highlight difficulties, please contact the GSoE's ethics co-ordinators who will suggest possible ways forward.

Signed: SL (Researcher)

Signed: KH (Discussant)

Date: 28-10-2016

(Page 3 of 4)

Summary of the Research Proposal

I. Background

A proactive student approach of “Learning to Learn” (CDC 2001 & EMB 2004) has remarked a new era of *change* in education reform of Hong Kong since 2000s. However, outcomes of student learning are unsatisfactory. With reference to Hong Kong Examinations and Assessment Authority, only about 29% of students who get better English results (Level 4 and above) reach the minimum requirement for admission of local universities these years. In other words, the majority of students (over 70%), who have received regular primary and secondary schooling (as they have learned English for 12 years), cannot gain but lose their better chances for tertiary education or job opportunity because of their bad English proficiency (with the fact that English is an international language). Among these less achieving students, each year we record about 20% of students who fail in English (Level 1 and below). Meanwhile, under the recent inclusion policy, teachers in schools have to manage not only the low achievers of mainstream students but also the non-Chinese students (NCS) as well as students with special education needs (SEN) in the same classroom with the normal students. As a lecturer in education of a local university, I have been receiving views from the in-service teachers concerning their challenges with student diversity and/or adversity in the classroom. So how can we help solve the problems of day-to-day classroom practice? In this regard, I propose an action research to probe the feasibility to improve the unfavourable situation in our local Chinese context.

II. Aims of the Research

Action research is a systematic approach to enable reflection, re-planning of action, observation and further evaluation for improvement (Schon 1983, Jaworski 1993 and Stern et al. 2014). As “*Reflection is action-oriented*” (Kemmis 1985:141), the concept of teachers as reflective practitioners that Schon (1983) proclaims will be employed in the study. The proposed action research aims to: (a) reveal the complexity of diverse culture of school education in Hong Kong context; (b) facilitate a reflective approach to make meaningful changes for classroom improvement in teaching and learning; and (c) develop critically the knowledge and skills of professional teachers’ thinking, planning and performing.

III. Design of the Action Research

Two local teachers who have different teaching experiences will be invited to participate in the action research. Within the systematic research cycles, I co-work with the teachers to wider the perspectives of observation, reflection and re-planning of action for change (Schon 1983 and Jaworski 1993). Three sources of data will be collected as: (a) teachers’ reflective journals; (b) class observations and (c) reflective discussions.

IV. Significance

There is an actual “need” to roadmap the magnitude of better classroom practice in teaching and learning, not just the propaganda of “*Learning to learn*” (CDC 2001) in the education reform. The significance of the proposed research includes: (a) to address the problems of student diversity in Hong Kong school culture; (b) to contribute to the evidence-basis for change in classroom practice; (c) to facilitate the reflective practice for teacher professional development and (d) to demonstrate the systemic action research for enhancing quality of teaching and learning in achieving the “win-win” empirical outcomes of school effectiveness.

Name: Sheung-kwan LEUNG / Title of the Research: “Action Research for Classroom Improvement: Embracing Reflective Practice for Teacher Development.”

Appendix 3 – Consent Letter

Reply Slip

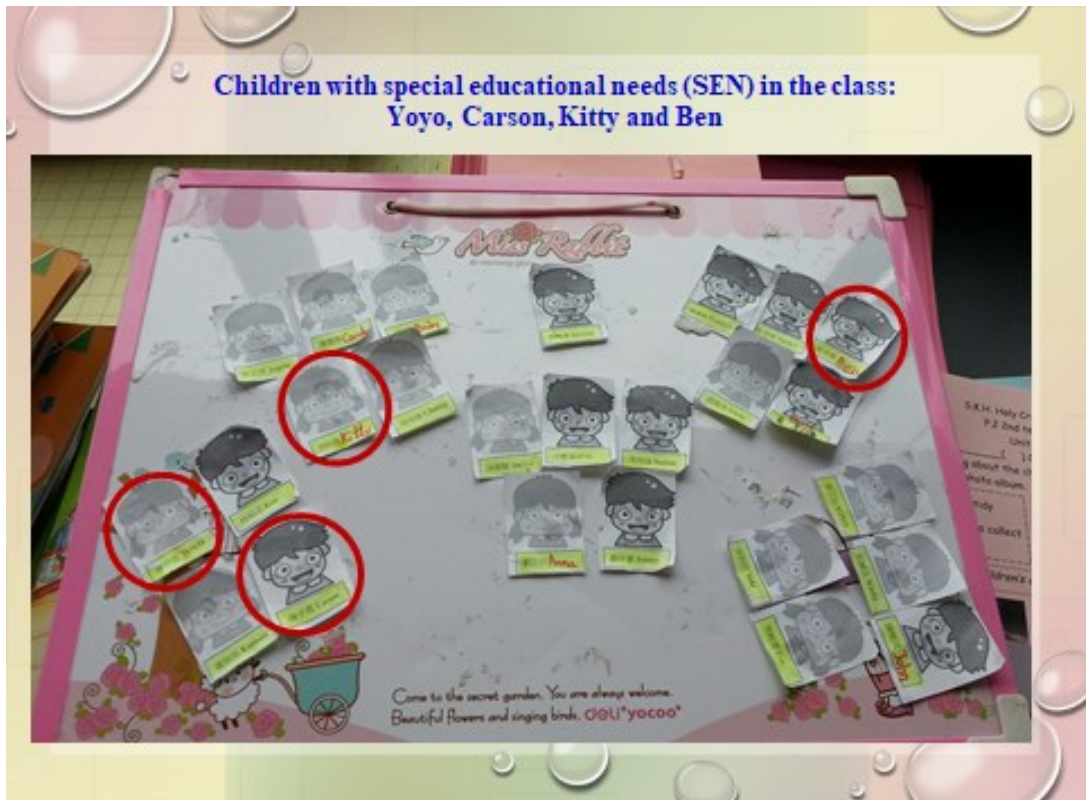
I have read Ms Sheung-kwan LEUNG's research plan. I consent to allow her to conduct her action research in my school, S.K.H. Holy Cross Primary School, for her doctoral programme at University of Bristol.

Signature of the Principal : _____

Name of Principal : Mr. Chung-hong CHAN

Date : 10-2-2017

Appendix 4 – Sitting Plan of Class P. 2D



Four SEN children circled in red (from the left) were: Yoyo, Carson, Kitty and Ben.

Appendix 5 – T1's Target-setting for Action Research

Action Research by S.K. LEUNG 2017

Target Setting

Focus: Classroom Practice

1. The parts of my teaching I do well are ① 教学讲解清晰, 有条理。
能辨识学生的学习差异。

2. The main challenge in my classroom practice is ① 不同SEN学生的学习差异及
学习动机学习能力。② 课堂秩序的管理 ③ 教学时间有限

3. The learning needs of students are ① 需要不同程度的学习内容, 以平
衡不同能力的SEN学生。

4. The sorts of support that would help improve teaching and learning are ① 课程的剪裁
② 教学时间 ③ 秩序的管理 ④ 评估考核

Target Setting

1. The parts of my teaching I do well are: My teaching is clear and organized. I am able to identify pupils' learning differences.
2. The main challenge in my classroom practice is: (i) the individual differences of SEN children's – their motivation & learning abilities; (ii) classroom management; (iii) insufficient time of teaching.
3. The learning needs of students are: Different levels of contents for balancing different levels of SEN children's abilities.
4. The sorts of support that would help improve teaching and learning are: (i) curriculum adaptation; (ii) teaching time; (iii) classroom management; (iv) assessment.

Appendix 6 – T2's Target-setting for Action Research

Action Research by S.K. LEUNG 2017

Target Setting

Focus: Classroom Practice

1. The parts of my teaching I do well are giving students interesting tasks.
 2. The main challenge in my classroom practice is giving students enough inputs and classroom management.
 3. The learning needs of students are understanding the vocabulary items and sentence structures.
 4. The sorts of support that would help improve teaching and learning are simplifying the learning materials and enhancing their motivations in learning English.
-

Appendix 7 – Sample of T1’s Reflection (Diary) – page 1

Action Research, by S.K. LEUNG 2017

Teacher’s Reflection

Name of the Reflective Practitioner: T1’s Name

Date: 19-6-2017

T1’s Name

Class: P. 2D

Part A: Class Organization

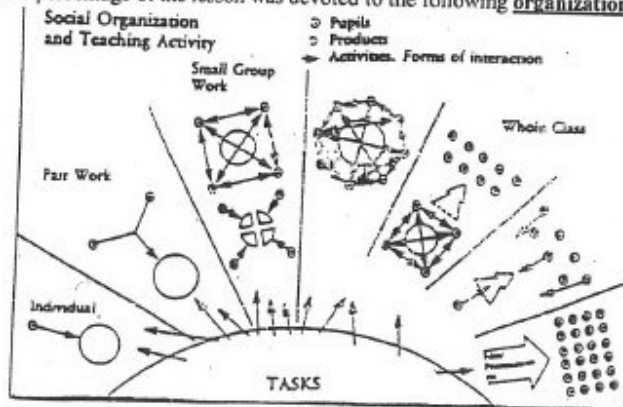
Please rate the lesson (1=the lowest and 5=the highest) according to the following items by putting “√” into the box below:

	1	2	3	4	5
Content of the lesson					
1. According to the lesson objectives, teaching contents and materials were adapted for the diverse needs of pupils with different abilities and/or learning difficulties. 因應學生不同的學習差異，我已把學習內容和教材作調適。					✓
2. All pupils were able to follow the learning procedures at all time. 所有學生都能完全跟隨學習的程序。					✓
Cognitive activation					
3. I have stimulated pupils’ learning by means of the meta-cognitive strategies (e.g. problem solving) 我已應用後設認知策略，來刺激學生認知領域的學習。					✓
4. Pupils were asked higher-order questions and/or the application of concepts in different contexts. 學習過程中，學生有機會被問及高層次的應用性問題。					✓
Classroom management					
5. The pace of teaching was appropriate and most pupils were involved at all time. 學與教的進度適中。					✓
6. I have applied disciplinary rules to monitor student behavior in the lesson. 我能管理秩序及處理學生行為問題。					✓
7. Most pupils’ reactions and attitude were positive at all time. 大部分時間，學生的反應及學習態度是正面的。					✓
Supportive classroom climate					
8. I have provided sufficient time for scaffolding students’ ideas and accomplishing learning tasks. 我能應用鷹架理論，輔助學生學習。					✓
9. Pupils have ample time to practice what has been taught and have received prompt feedback. 學生有充分的時間進行練習/做習作，並獲得適切的回饋。					✓
10. Students have opportunity to reflect on learning activities and their performance (individual/group). 學生有機會反思學習過程、行為表現及學習成果。					✓

[Modified from Scheerens, J. (2016). “Educational Effectiveness and Ineffectiveness. A Critical Review of the Knowledge Base”.]

Part B: Task Analysis

What percentage of the lesson was devoted to the following **organizational patterns**?



[Source of picture from: Wright, T. (1987). “Roles of Teachers and Learners”.]

Notes/Re-planning of actions, instructions and others: _____

目标: ① 既...也...

② 内容主旨 小马过河的道理

计划: 以角色扮演分组朗读课文

2. 不同层次提问, 让学生思考故事的道理

3. 以图画表达小马身体大小

4. 以 ppt 讲述句式

反思: 以不同方式容许学生回答问题(画图)

感觉有利不同能力同学表现个

2. 同学能掌握既...也句式, 表现合水平

Appendix 9 – Sample of T2’s Reflection (Diary) – page 1

Teacher’s Reflection

Name of the Reflective Practitioner:

T2’s Name

Date: 23rd May, 2016

Class: P. 2D

Part A: Class Organization

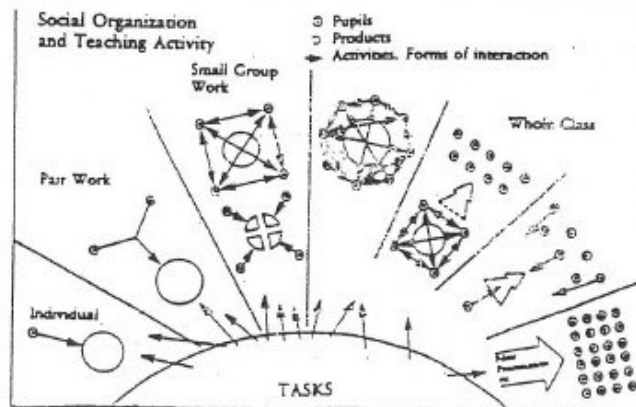
Please rate the lesson (1=the lowest and 5=the highest) according to the following items by putting ✓ into the box below:

	1	2	3	4	5
Content of the lesson					
1. According to the lesson objectives, teaching contents and materials were adapted for the diverse needs of pupils with different abilities and/or learning difficulties.					✓
2. All pupils were able to follow the learning procedures at all time.					✓
Cognitive activation					
3. I have stimulated pupils’ learning by means of the meta-cognitive strategies (e.g. problem solving)					✓
4. Pupils were asked higher-order questions and/or the application of concepts in different contexts.					✓
Classroom management					
5. The pace of teaching was appropriate and most pupils were involved at all time.					✓
6. I have applied disciplinary rules to monitor student behavior in the lesson.					✓
7. Most pupils’ reactions and attitude were positive at all time.					✓
Supportive classroom climate					
8. I have provided sufficient time for scaffolding students’ ideas and accomplishing learning tasks.					✓
9. Pupils have ample time to practice what has been taught and have received prompt feedback.					✓
10. Students have opportunity to reflect on learning activities and their performance (individual/group).					✓

[Modified from Scheerens, J. (2016). “Educational Effectiveness and Ineffectiveness. A Critical Review of the Knowledge Base”.]

Part B: Task Analysis

What percentage of the lesson was devoted to the following **organizational patterns**?



[Source of picture from: Wright, T. (1987). “Roles of Teachers and Learners”.]

Notes/Re-planning of actions, instructions and others: _____

Objectives

- ① Students are able to spell the four seasons and tell the weather in different seasons.

Activities

- ① Sing a Song
- ② Matching game (Weather and Seasons)
- ④ Spelling clapping with partners
- ⑤ Spelling competition between groups
- ⑥ Presentation

'It is hot and sunny in summer.'

Students' performance

1. They enjoy singing songs.
2. They are able to tell the weather and the seasons.
3. They are able to spell the target vocabulary items.

Appendix 11 – T1’s worksheet page 1 in Cycle 1

-Pupils were given a **blank sheet** for the task of story-writing:

- 1) to write the outline (page 1)
- 2) to write paragraphs of the story (page 2-3)

-**Pupils found it difficult to do.**

二年級下學期中文科寫作四 Writing worksheet - page 1

姓名：_____ () 班別：2_____

(4)先確定文章的寫作中心和內容，寫在_____上。

寫作內容

時間：_____

人物：_____

地點：_____

事情起因：_____

經過：_____

結果：_____

寫作中心

一件曾經讓我感到_____，瞭解後就_____的事情。

第三頁

Appendix 14 – T1’s adapted worksheet in Cycle 2:
 - writing Chinese words in correct order of sequence.

Page 1:

Step 1: to distinguish the first writing part of the word by putting a circle on it.

Step 2: to write the part in the bracket.

Step 3: to write the whole word in the box below.

Yim's Word-sequence writing page 1

聖公會聖十架小學

中文科筆順練習工作紙(1) - 單元(十一)

姓名 Pupil's Name () 班別: 2D 日期: 26-5-2017

(一) 試將下面的字詞,「最先」寫的部分圈出來,並寫在()內,然後按筆順寫字兩次。

① 丁 (目)	沾 (氵)	② 眨 (目)	③ 對 (堇)	④ 題 (頁)
盯	沾	眨	對	題
盯	沾	眨	對	題

道	邊	過	聰	明
(首)	(鼻)	(辶)	(耳)	(日)

道	邊	過	聰	明
道	邊	過	聰	明

Appendix 15 – T1’s adapted worksheet in Cycle 2:
- writing Chinese words in correct order of sequence.

Page 2:

Step 1: to use straight lines dividing parts of the word and to write (1), (2), or (3) in correct sequence.

Step 2: to write the whole word in the box below.

Step 3: to find three words from the passage (textbook) and to write on the line below.

(二)試把下面的字詞，加上「直線」劃分成兩部分或三部分，並在小格內之空白地方，依次序寫上(1) (2) 或(3)的步驟，然後按「筆順」寫字兩次。例如：

		「聲」	「音」			
(1)	(2)	聲	音			
目	丁					
「叮」						
搖	晃	糊	塗	算	吞	
搖	晃	糊	塗	算	吞	
搖	晃	糊	塗	算	吞	

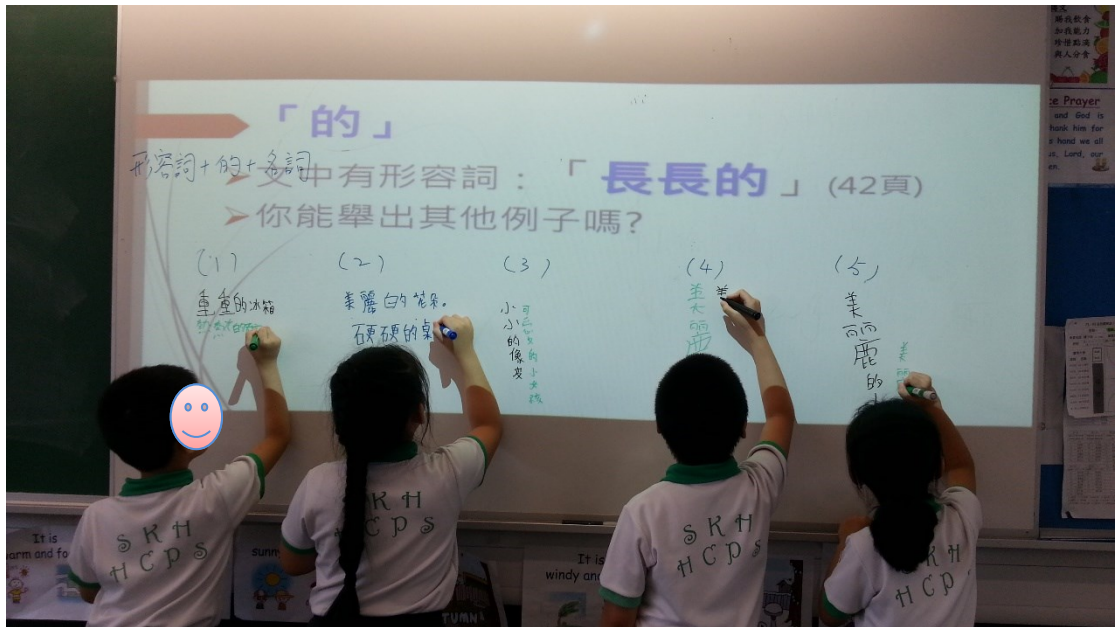
(三)從文中找出另外三個字詞，寫在下面的空線上，然後加上「直線」分成(1), (2) 或(3)的筆順步驟。

糊, 塗, 算

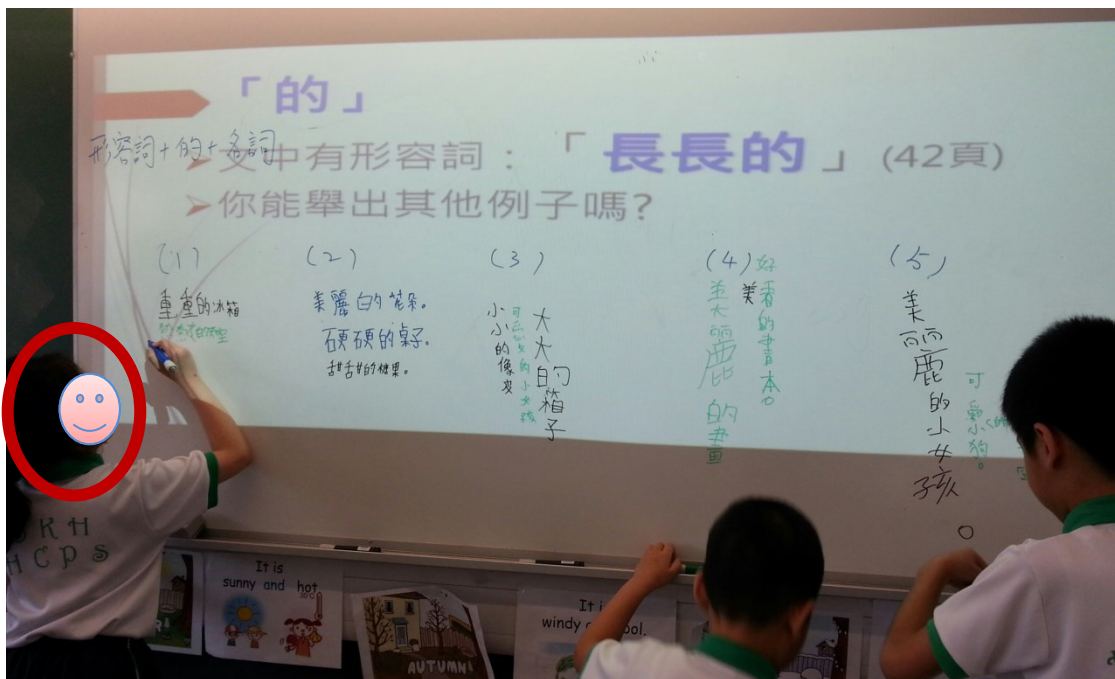
Appendix 16a) – T1's adapted strategy in Cycle 2:
 – Pupils' group-competition – writing Chinese adjectives

Step 1: to find phrases of adjectives from the passage;

Step 2: to write the answers on the whiteboard.



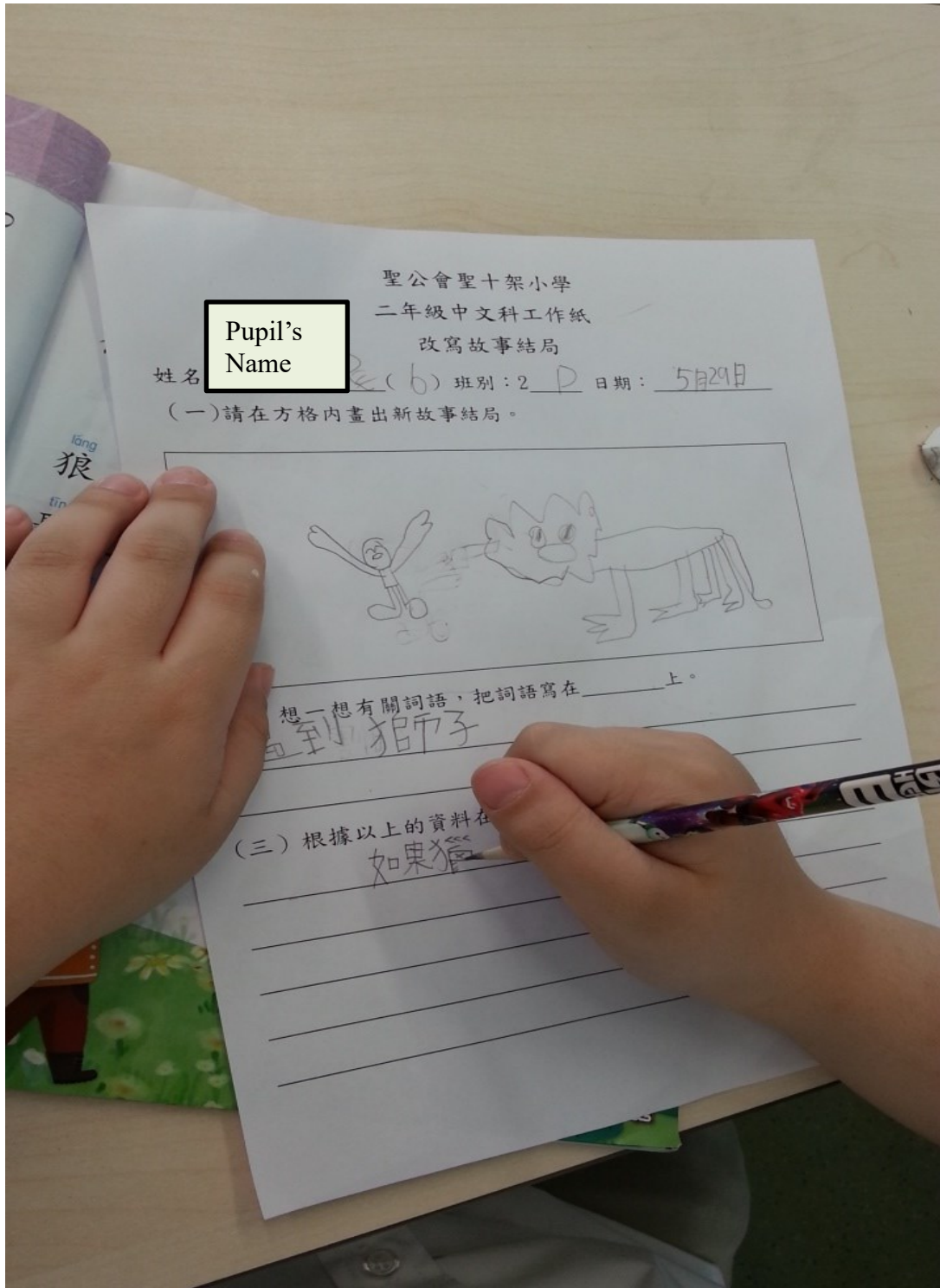
16b) – Yoyo in Group 1 - participating in the competition
 – she could not write a word.



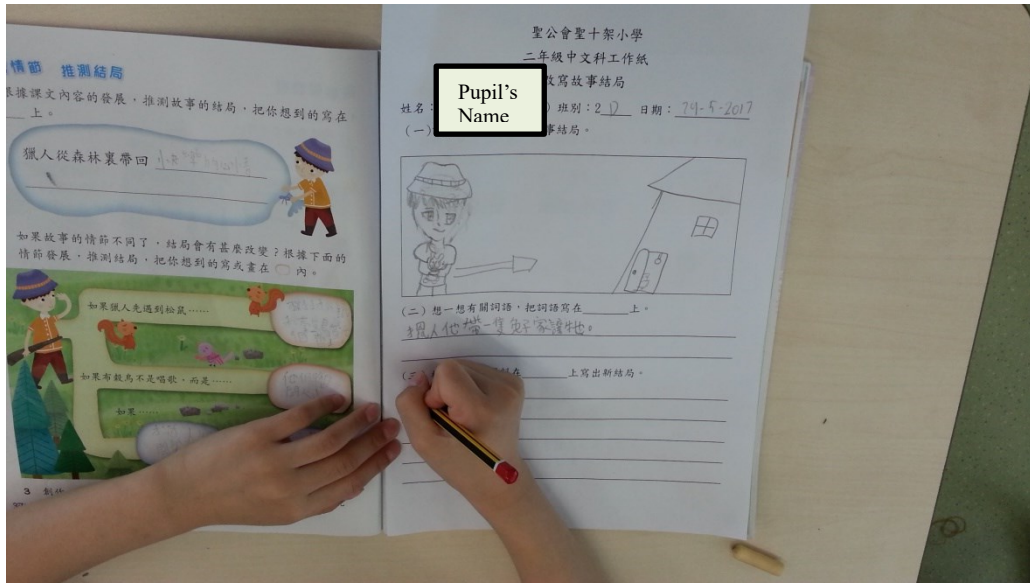
Appendix 17 – T1's adapted worksheet: story-writing

- Step 1: to draw a picture of the new story-ending;
- Step 2: to write some related vocabs;
- Step 3: to write sentences for the new story-ending.

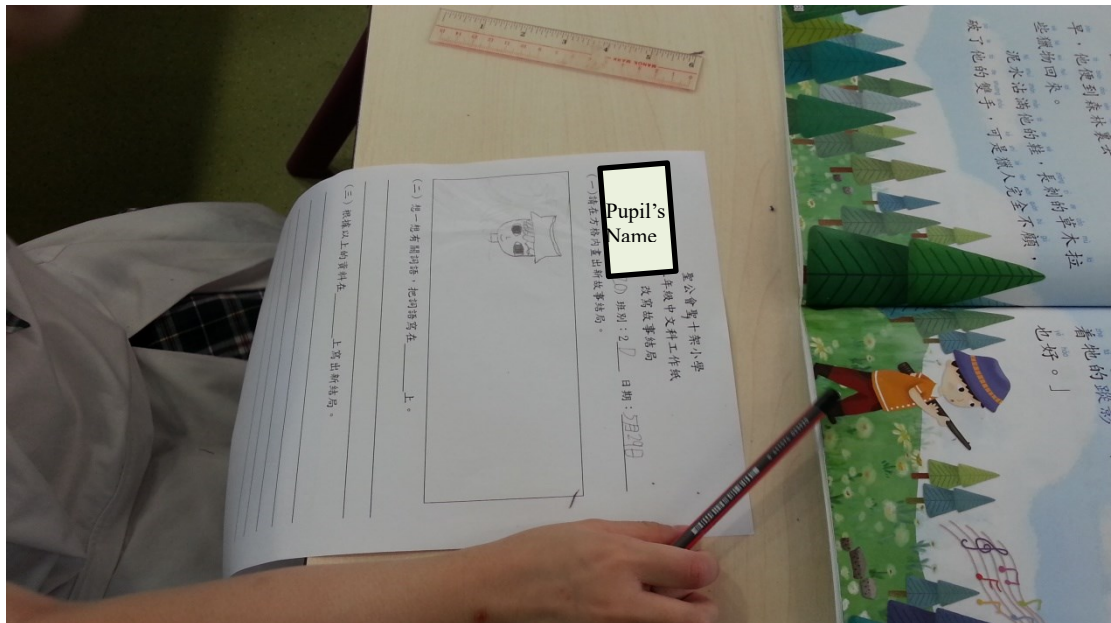
- Carson's picture and story writing



Appendix 18a) – T1's adapted worksheet: story-writing
-Kitty's picture and story writing



Appendix 18b) – T1's adapted worksheet: story-writing
-Yoyo's picture



Appendix 19 – T1's planned worksheet for pupils' story-writing
– not yet been used

Step 1: to choose one story-ending by giving a ✓ in the circle;

Step 2: to complete the sentence by filling-in the blank with the given hints.

聖公會聖十架小學
二年級中文科工作紙
改寫故事結局

姓名：_____ () 班別：2_____ 日期：_____

一 你會怎樣改編課文中獵人打獵的情節？結局又會怎樣？選其中一個情節，在○內打✓，並創作結局，寫在_____上。



如果獵人先遇到松鼠，獵人會直接捕獵松鼠，然後_____



如果布穀鳥不是唱歌，而是正在照顧_____，獵人看見了，覺得_____，決定_____



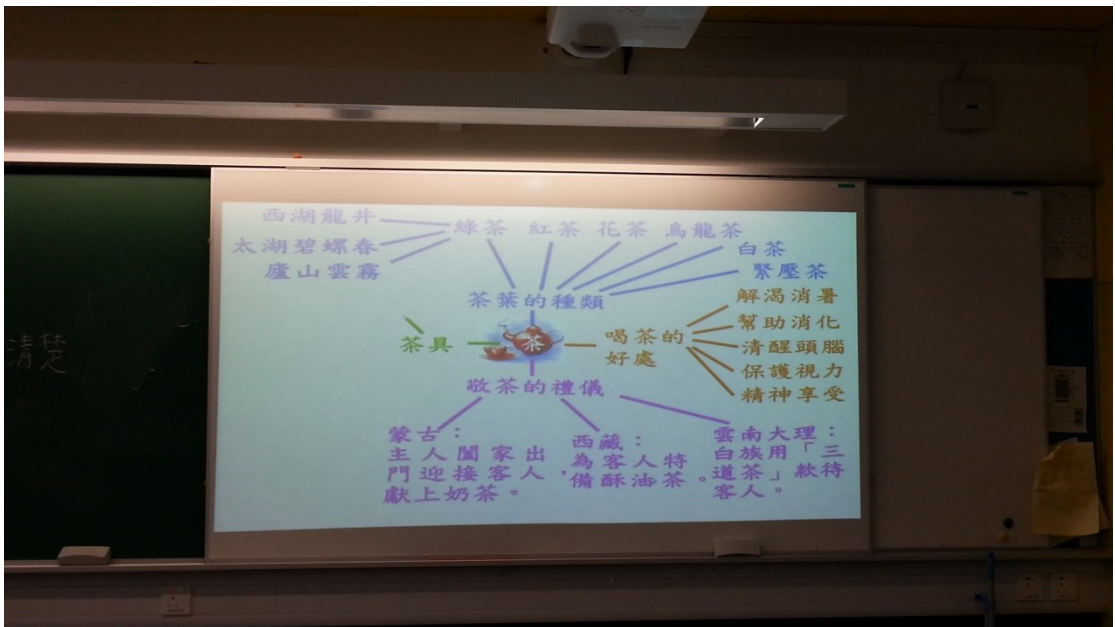
如果獵人把愛唱歌的布穀鳥帶回家，布穀鳥_____



Appendix 20a) – T1's lesson in Cycle 6



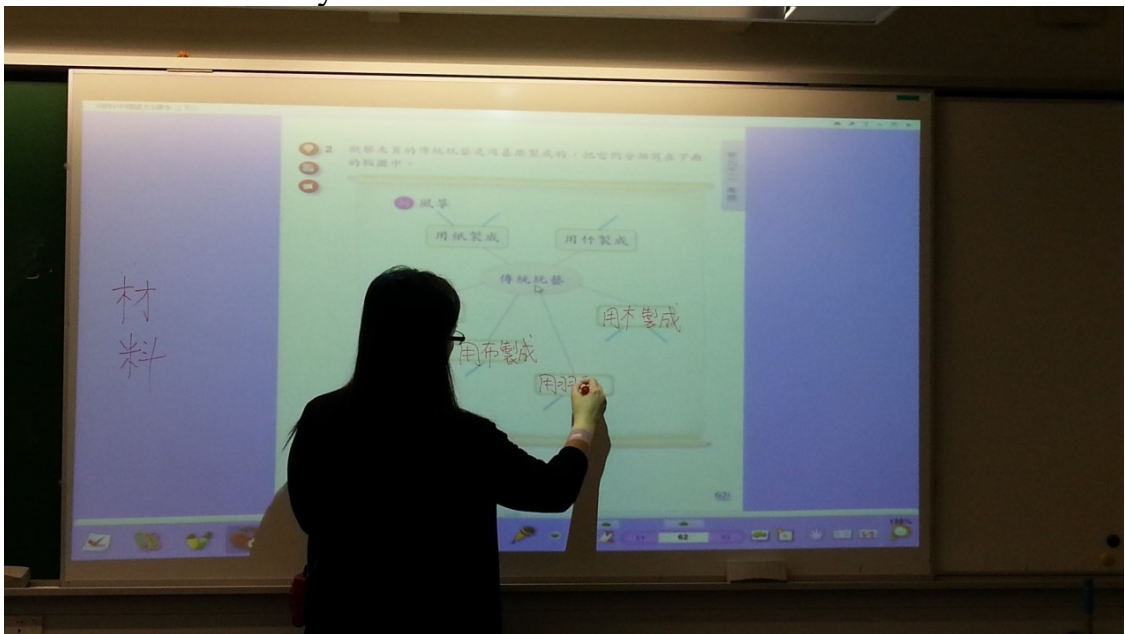
Appendix 20b) – Displaying a mind-map: Chinese tea



Appendix 21a) – Pupils were listening to T1's explanation
-using a mind-map for analysis















Appendix 21b) – T1 was demonstrating the mind-map:
- toys' materials



Appendix 22 – T2's group-worksheet in Cycle 1

Group name: Yuki, Eva, Wintly, John, YoYo









What does Candy usually wear in autumn?

head	<u>a hat</u> 	<u>a cap</u> 		
Upper body	<u>a sweater</u> 	<u>T-shirt</u> 		<u>a cardigan</u> 
	<u>gloves</u> 	<u>a jacket</u> 		<u>a scarf</u> 
	<u>a raincoat</u> 			
Lower limbs	<u>skirt</u> 	<u>jeans</u> 	<u>shorts</u> 	<u>trousers</u> 
feet		<u>boot</u> 	<u>trainers</u> 	

Candy usually wears a hat, trousers, a sweater, jeans and shoes, gym shoes in autumn.

Group name: Ben, Jacky, Mi'Kki, David, Frankie

What does Tom usually wear in summer?

head			
Upper body			
Lower limbs			
feet			

Tom usually wears a hat, a T-shirt, shorts and shoes in summer.

Appendix 23 – T2’s adapted worksheet: “Time” in Cycle 2
-page 1

Class: P. 2D Name: Pupil's Name Date: 23rd May, 2017

1. Fill in the correct number.

2. Complete the table below.

<p>a). It is a <u>clock</u>.</p>	<p>e). It is a <u>watch</u>.</p>
<p>b). The big hand is on <u>twelve</u>.</p>	<p>f). The little hand is on <u>eleven</u>.</p>
<p>c). The big hand shows min <u>ute</u>.</p>	<p>g). The little hand shows <u>hour</u>.</p>
<p>d). It is <u>one</u> o'clock.</p>	<p>h). What time is it? <u>eleven</u> o'clock.</p>

Appendix 24 – T2's adapted worksheet: "Time" in Cycle 2
-page 2

4. Talk to your group members about the time.

a). Look at the clock. What time is it?

b). It is four o'clock. (4)

c). Look at the clock. What time is it?

d). It is eight o'clock. (8)

e). Look at your watch. What time is it?

f). It is twelve o'clock. (12)

3. Write the sentence in the correct order.

a). clock / at / the / Look

Look at the clock

b). big / hand / The / shows / minute

The big hand shows minute

c). is / time / What / it

What time is it?

d). is / o'clock / It / nine.

It is nine o'clock

o'clock

Appendix 25 – T2’s adapted worksheet: “Festival” in Cycle 3

Name: Pupil's Name Class: 2D Date: 31st May, 2017
 Title: Special Days

Page	Special Day	Do they sing? <input checked="" type="checkbox"/>	Do they dance? <input type="checkbox"/>	What do they do?
4	<u>May Day</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	<u>Teachers' Day</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> People give teachers <u>flowers</u> .
8	<u>Canada Day</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> People watch f <u>ireworks</u> . <input checked="" type="checkbox"/> People watch p <u>arades</u> .
10	<u>Spring Festival</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> People watch f <u>ireworks</u> . <input checked="" type="checkbox"/> People have t <u>reats</u> . <input checked="" type="checkbox"/> Children get r <u>ed</u> <u>Packets</u> .
12	<u>Anzac Day</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> People think about their <u>brave</u> <u>soldiers</u> .
14	<u>Children's Day</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Children fly <u>kites</u> . those look like f <u>ish</u> .

Draw one of our festivals. What do people usually do?

Mud Festival — South Korea



The festival is Mud Festival.
It is in summer. People roll
in mud.

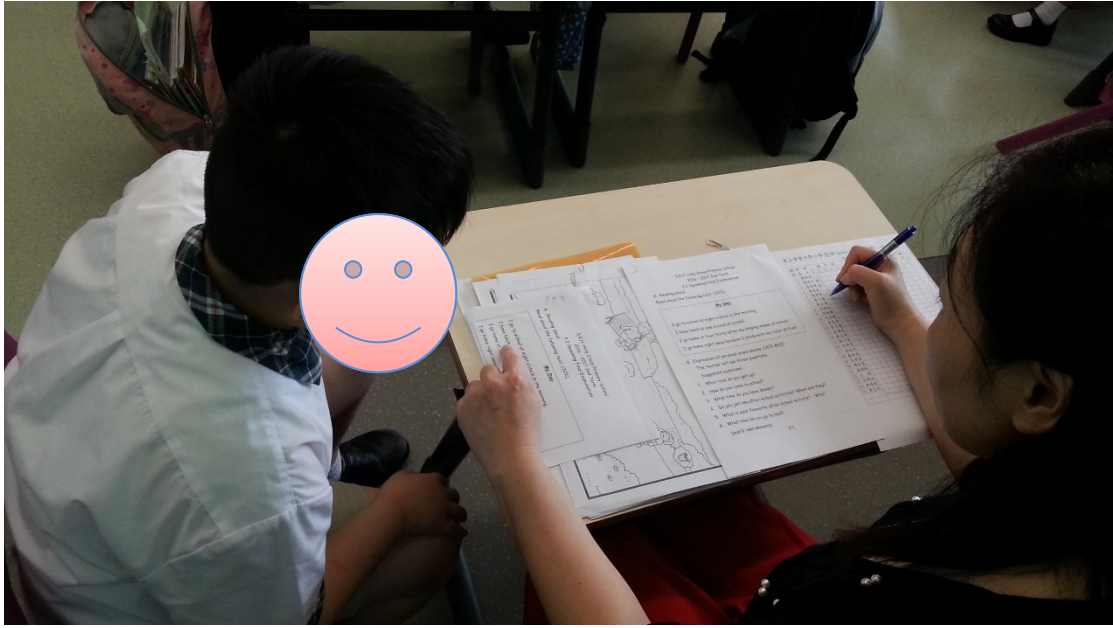
Tomatoes Festival — Spain



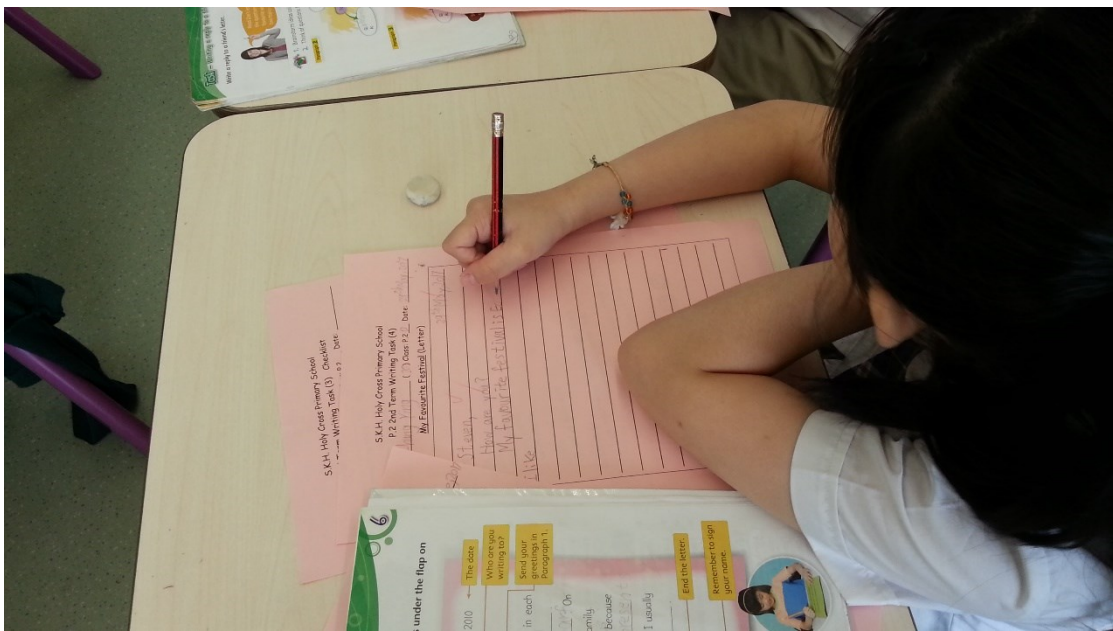
The festival is Tomatoes
Festival. It is in summer.
People throw tomatoes to
others.



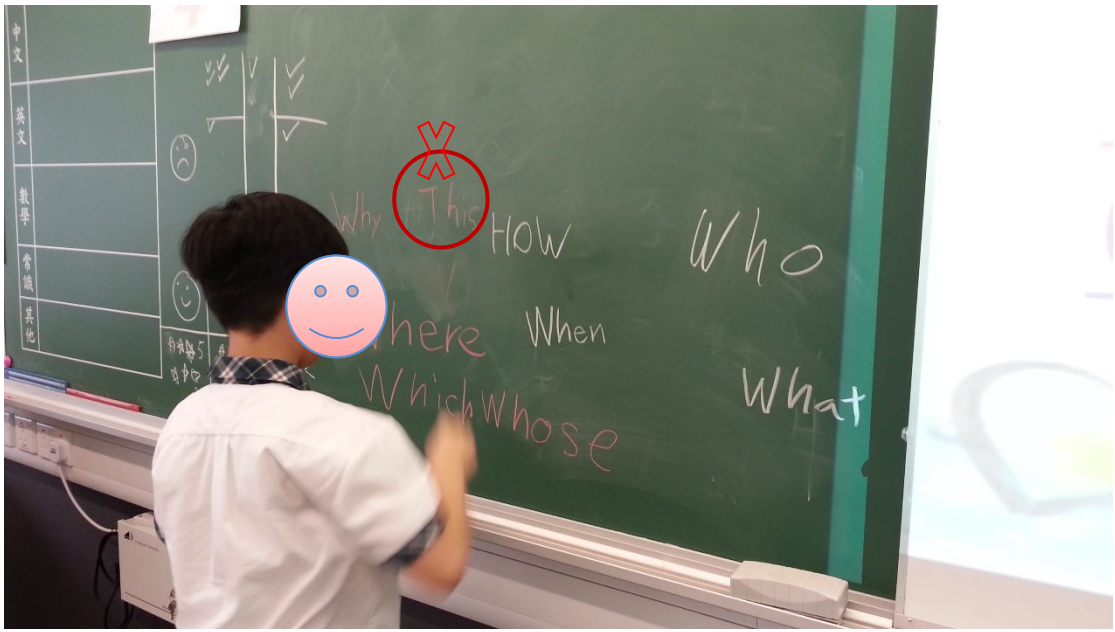
Appendix 27a) – T2 was helping Carson in the Speaking Exam in Cycle 4.



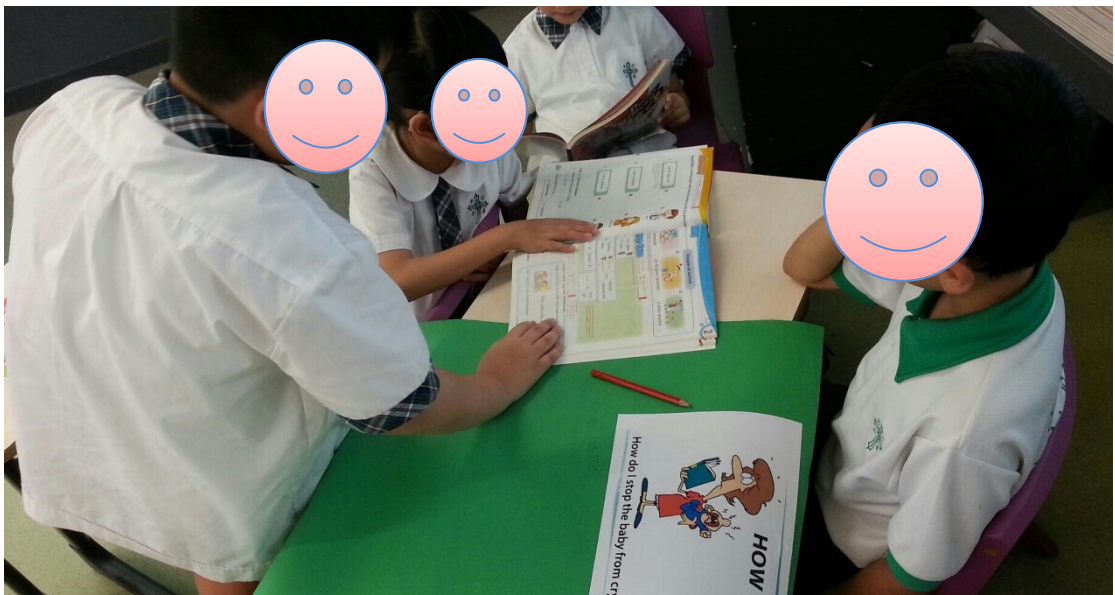
Appendix 27b) – Pupils were doing the writing task while the Speaking Exam was in progress.



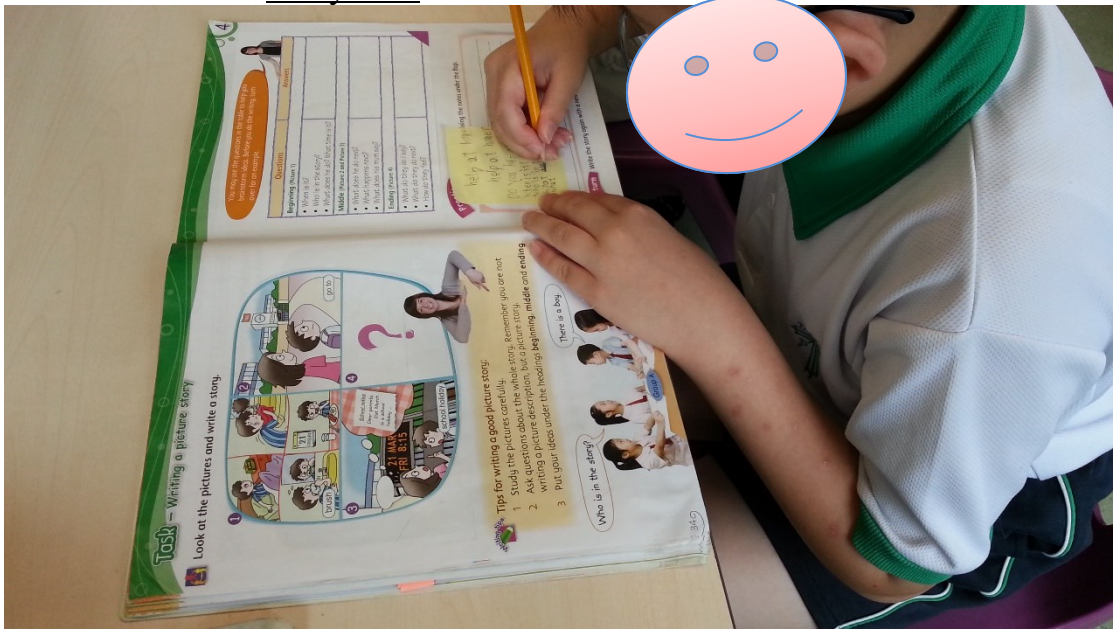
Appendix 28a) – Pupils tried to write “Wh-Questions” in Cycle 5.



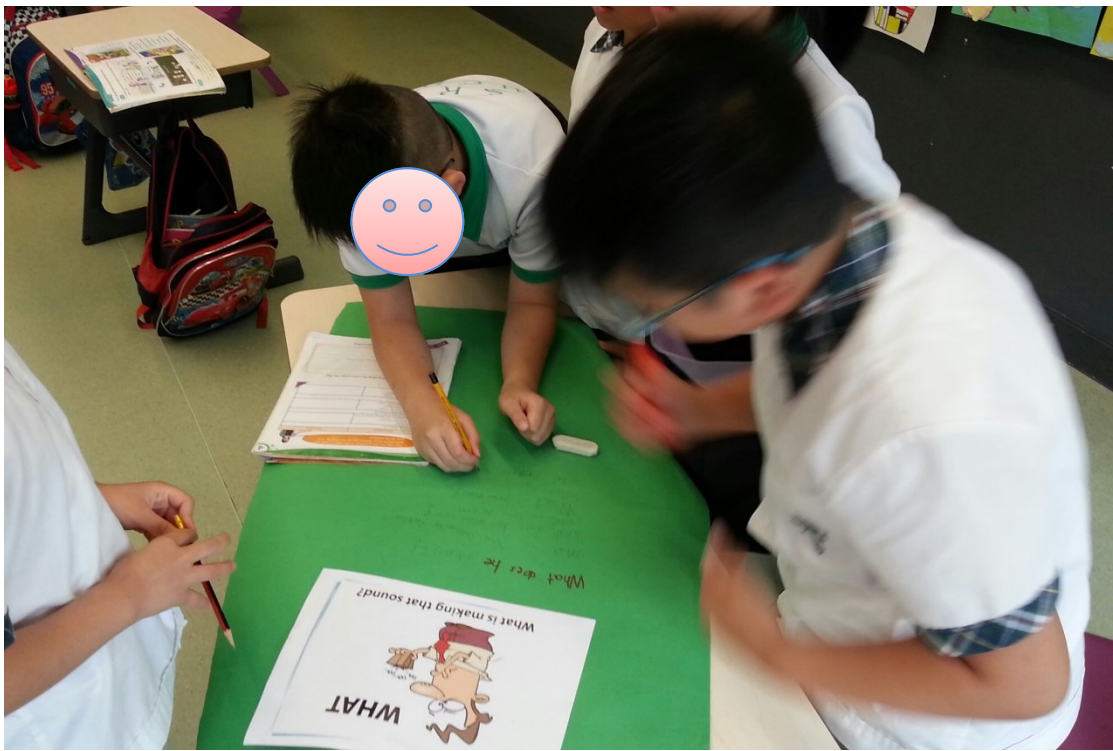
Appendix 28b) – Pupils’ group-work: finding “Wh-Questions” in Cycle 5



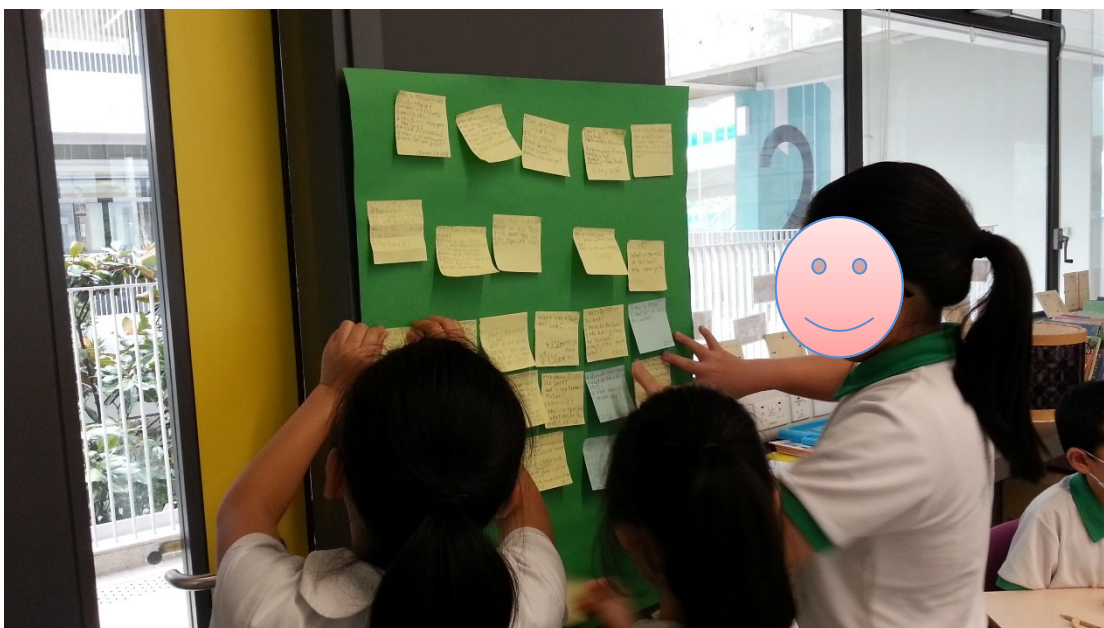
Appendix 29a) – Pupils were on-task: writing “Wh-Questions” in Cycle 5



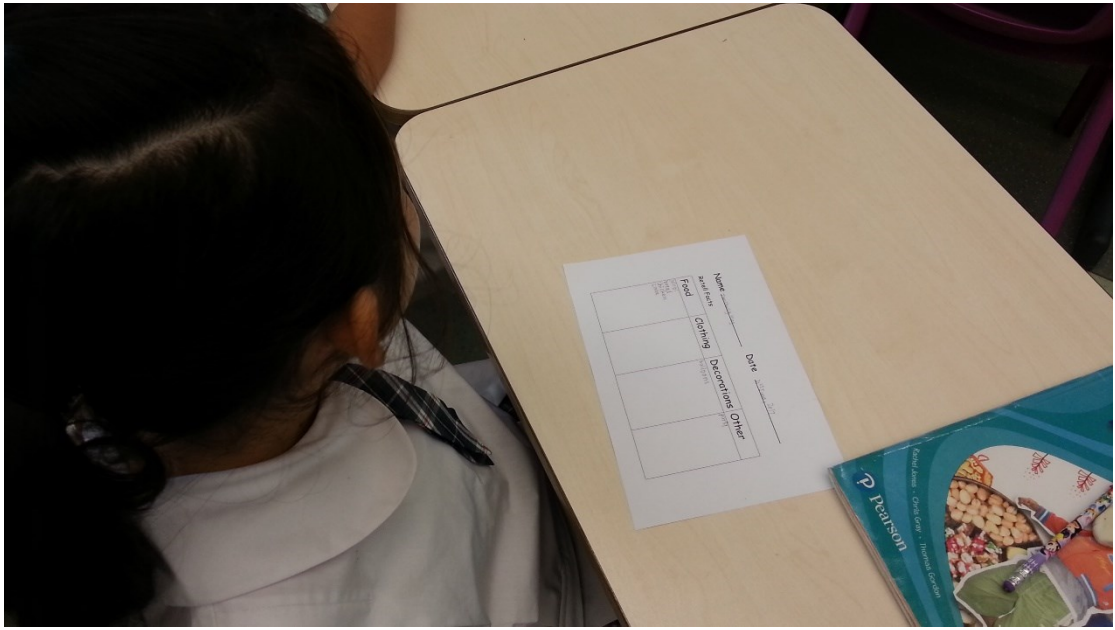
Appendix 29b) – Ben was writing “Wh-Questions” in Cycle 5.



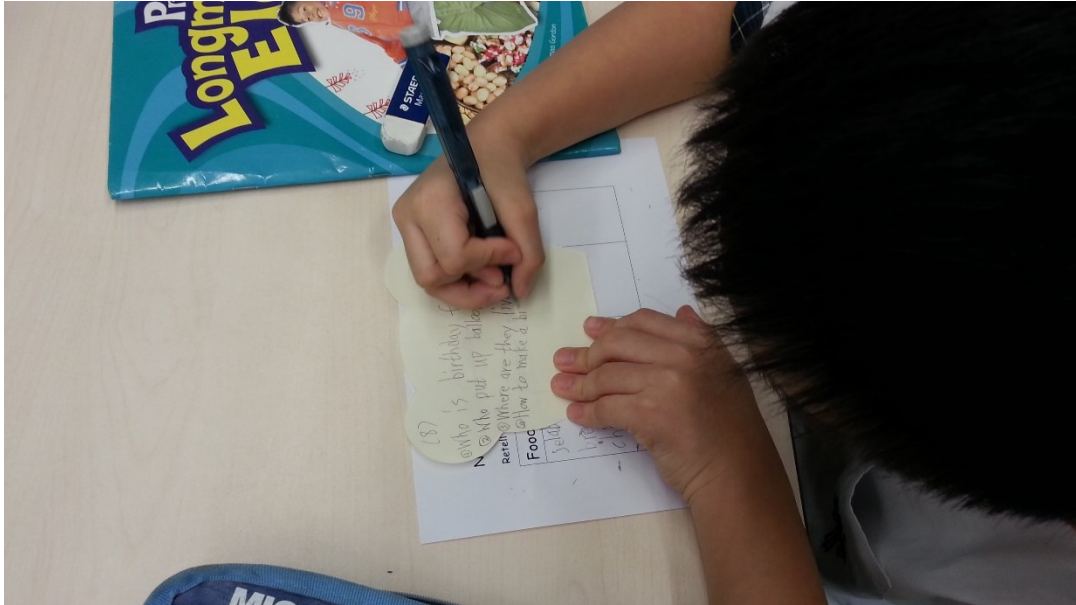
Appendix 30 – Pupils were displaying their group-work: writing “Wh-Questions” in Cycle 5.



Appendix 31 – Yoyo's work in Cycle 6: filling vocabs in the table



Appendix 32a) – Pupils were writing “Wh-Questions” on their own in Cycle 6.



Appendix 32b) – T2 was checking Andy's answers with the whole class in Cycle 6.

