Exploration of Pedagogical Use of Social Learning Platform and Word Processing Productivity Tool in Peer-Assessment and Self-Editing Tasks in Elementary English Writing Classrooms

by

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A Thesis Submitted to

The Education University of Hong Kong

in Partial Fulfillment of the Requirement for

the Degree of Doctor of Education

December 2016

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Statement of Originality

I, KWOK, Wai Ying, hereby declare that I am the sole author of the thesis and the material presented in this thesis is my original work except those indicated in the acknowledgement. I further declare that I have followed the University's policies and regulations on Academic Honesty, Copyright and Plagiarism in writing the thesis and no material in this thesis has been submitted for a degree in this or other universities.

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Abstract

This study aims to explore the pedagogical potential of the social learning platform Edmodo and the word processing productivity tool MS Word Processor in peer-assessment and self-editing tasks in elementary ESL/EFL writing classrooms. Peer-assessment and self-editing are pedagogical arrangements long advocated to be favorable to ESL/EFL writing classrooms. Social learning platforms and word processing productivity tools are digital technologies used for educational purposes. Everyday application and empirical research of these pedagogical arrangements and digital technologies are ample in tertiary and secondary education sectors; yet inadequate in the elementary education sector. This study therefore has designed a technology-mediated pedagogy for a synergy between the two pedagogical arrangements and two digital productivity tools abovementioned to enhance the quality of learning process and learning outcomes among local elementary school students in ESL/EFL writing classrooms. Four research questions were designed to investigate (1) students' achievements in ESL/EFL writing tasks; (2) the characteristics of students' peer-assessment feedback provision; (3) the characteristics of students' self-editing writing revisions; and (4) students' perceptions toward the designed pedagogy. A multiple case study was conducted for the trial of the designed pedagogy in three local ESL/EFL classrooms. Case Study 1 lasted for 10 sessions in a 25-student Grade 4 class, whose average age was 9.44, in a Chinese-medium school. Case Study 2 lasted for 7 sessions in a 28-student Grade 4 class, whose average age

was 9.36, in a Chinese-medium school. Case Study 3 lasted for 5 sessions plus 2 online assignments in a 17-student Grade 5 class, whose average age was 9.88, in an English-medium school. A mixed-method evaluation was conducted for (1) the scoring and syntactic maturity measurement of writing compositions by the 70 students; (2) a content analysis of 1,095 students' peer-assessment feedback items; (3) a content analysis of 359 students' self-editing revision items; and (4) a questionnaire survey with the 70 students followed by focus group discussions about their learning perceptions. The three case studies consistently confirmed the effectiveness of the designed pedagogy to improve students' achievement and interest in learning ESL/EFL writing. Case Study 1 particularly corroborated the cognitive benefits of the designed pedagogy to stimulate students' directions on performance improvement in ESL/EFL writing. Case Study 2 especially verified the affective benefits of the designed pedagogy to enhance students' enjoyment and satisfaction when learning ESL/EFL writing. Case Study 3 particularly substantiated the impact of the designed pedagogy on enhancing students' sense of responsibility to advance the peers' and their own learning. This study implies that senior elementary school students are feasible and keen to engage in pedagogical arrangements of peer-assessment and self-editing in ESL/EFL writing classrooms. The young students are manageable and pleased to make technological use of Edmodo and MS Word Processor for completing peer-assessment and self-editing tasks. The young students are able to achieve knowledge enhancement and attitudinal

changes when interacting with peers through the technology-supported peer-assessment tasks and consolidating own knowledge through the technology-supported self-editing tasks. The results of this study recommend that it is practicable and promising to implement the designed pedagogy for senior elementary school students to realize active, constructive and interactive learning in ESL/EFL writing curriculum.

Keywords: English writing pedagogy, digital productivity tools, peer-assessment, self-editing, social learning platform

Acknowledgments

I would like to take this opportunity to express my deep gratitude to everybody who has helped me to accomplish this thesis: my Thesis Principal Supervisor Prof. Siu-cheung Kong and Thesis Associate Supervisor Prof. Sing-kai Lo, my thesis committee, my caring teachers, my supportive friends, my dear family, and especially, the partner schools and participating students in this study who were kind and keen to support the smooth completion of this study.

I would like to express my heartfelt thanks to my Principal Supervisor Prof. Siu-cheung Kong for his generous and patient support on the long and demanding journey in my doctoral study. Prof. Kong has been keen on sharing his rich and practical experience in research on ICT in school education; and providing valuable and constructive advice throughout all stages of my study. Prof. Kong has not only obliged me with my study, but also inspired me with the hard work and proper attitudes toward rigorous academic research on technology-enhanced learning. I am indebted to Prof. Kong for his comprehensive support.

I would also like to express my sincere gratitude to Dr. Suk-yee Roxana Fung and Prof. Hun-tak Thomas Lee for their continuous support on my academic growth since their advisorship in my undergraduate and master studies. Their enthusiasm for language studies and scholarly research has greatly helped my development of essential competence and right attitudes toward language research, and also sharpened my current research to focus on technology-enhanced language learning. I also sincerely thank them for the kind and

continuous encouragement in my doctoral study.

Last but not least, I would like to wholeheartedly express my eternal gratitude to my family for their unswerving encouragement, unconditional support, and unfailing patience throughout the long and demanding journey in my doctoral study. My family always stands by me to share my happiness in my every progress made and cheer me up in my every tough time faced in the journey. Their utmost solicitude fosters my unremitting efforts in my academic pursuits. My deepest gratitude goes to my adoring parents and my two loving sisters. I dedicate the thesis to my beloved family.

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List of Abbreviations

CMI school	Chinese-medium school
EFL	English as Foreign Language
EMI school	English-medium school
ESL	English as Second Language
ICT	Information and Communication Technology
MS Word Processor	Microsoft Word Processor
Tablet PCs	Tablet personal computers

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Chapter 1: Introduction

This chapter will brief about the background and motivation, design and methods, as well as the significance and contributions of the study. The organization of the thesis will be introduced at the end of this chapter.

1.1 Background and Motivation of the Study

The ultimate goal of the study was to find ways to coordinate 21st century technology with 21st century pedagogy. The study targeted at addressing the pressing need for ESL/EFL teachers to effectively make pedagogical designs that optimally use digital productivity tools for subject learning and teaching; and contributing to the preparation of Chinese learners in local elementary schools for a sustainable development of linguistic intelligence.

In the 21st century, the school education sector has a growing emphasis of the meaningful integration of Information and Communication Technology (ICT) with practical pedagogies for learner-centered learning across different subject areas (Chan, 2010; Davies & Merchant, 2009; Kong et al., 2014). There is a growing use of digital productivity tools for subject teaching and learning in school education (Halse & Mallinson, 2009; Kong et al., 2014; Säljö, 2010). For the elementary school sector in many Asian cities such as Hong Kong wherein English language is not the native language of the majority of student population, there is a genuine need to empower local English as Second Language / English as Foreign

Language (ESL/EFL) teachers to plan and implement effective and efficient methods for the pedagogical integration of ICT into the delivery of ESL/EFL curriculum.

In Hong Kong elementary school sector, there is a decade-long effort on the pedagogical use of ICT for supporting ESL/EFL curricular activities, as English language is not the native language of the majority of local student population (Education Bureau, 2008). The use of ICT is considered helpful to support young ESL/EFL students in local elementary schools to effectively learn the very important but comparatively difficult components in English language usage, such as syntactic knowledge (Hegelheimer & Fisher, 2006; Zhao & Lai, 2008). ESL/EFL writing lessons always require students to demonstrate their syntactic knowledge. This in turn entails the need for ESL/EFL teachers to innovate the pedagogical use of ICT for fostering students to develop English syntactic knowledge through day-to-day ESL/EFL writing lessons.

It is well established that students' performance of writing tasks is reciprocally related with their development of high-level linguistic knowledge (Hegelheimer & Fisher, 2006; Yin, Sims, & Cothran, 2012). This drives the ESL/EFL research community in recent years to devote continuous effort to research into the use of different types of digital productivity tools for supporting school students to enhance the processes and outcomes of developing English syntactic knowledge through day-to-day ESL/EFL writing tasks (Andrews et al., 2007; Hegelheimer & Fisher, 2006). In this vein, social learning platforms and word processing

productivity tools are increasingly adopted across varying subject areas in elementary school education over the world (Pasfield-Neofitou, 2008; Wang, Hsu, & Green, 2013). On the other hand, the components of peer-assessment and self-editing in the process writing pedagogy are long advocated to be favorable to ESL/EFL writing classrooms. This advocacy of pedagogical influence for effective learning of English writing forms the theoretical premise of the empirical investigation in this study. This study therefore focuses on these two pedagogical arrangements that are recognized important for fostering students' English writing competence through the process-oriented approach in ESL/EFL writing curriculum; of which students in peer-assessment tasks could actively engage in interactive learning with other peers for reviewing the peers' writing products, and in self-editing tasks could reflectively engage in constructive learning on their own for editing their own writing products (Gielen, Dochy, & Onghena, 2011; Stellmack, Keenan, Sippl, Sandidge, & Konheim-Kalkstein, 2012; Suzuki, 2009; Topping, 2009).

These promising directions reveal the need of long-term research effort to the pedagogical innovations which take advantage of the meaningful use of emergent ICT for supporting student learning in elementary ESL/EFL writing curriculum. Based on the extensive review of literature in the related research fields, everyday application and empirical research of these pedagogical arrangements and digital productivity tools are ample in tertiary and secondary education sectors; yet inadequate in the elementary education sector.

This study therefore has designed a technology-mediated pedagogy for a synergy between the two pedagogical arrangements and two digital productivity tools abovementioned to enhance the quality of learning process and learning outcomes among local elementary school students in ESL/EFL writing classrooms.

1.2 Design and Methods of the Study

This study explores a pedagogy that incorporated two technology-supported pedagogical designs for ESL/EFL writing curriculum, namely: the peer-assessment task supported by Edmodo—a social learning platform increasingly popular for peer communication in a digital way; and the self-editing task supported by Microsoft Word Processor (MS Word Processor)—a word processing productivity tool commonly used for text editing in a digital way.

Such pedagogy was developed for fostering students to master and reflect on the high-level linguistic knowledge about grammar use and language expression in English writing. Three components were designed for students' progressive engagement in the draft-review-edit process: (1) individual work on the double-blind peer-assessment of two writing compositions produced by two classmates; (2) teacher-led whole-class discussion about a number of typical writing issues in targeted writing tasks; and (3) individual work on self-editing of their own writing compositions based on the feedback from two classmates.

This study has adopted the multiple case study approach for the trial of the designed pedagogy in three ESL/EFL writing classrooms in three elementary schools in Hong Kong. Case Study 1 was a 10-session trial teaching at a Chinese-medium school, with the participation of 25 Grade 4 students whose average age was 9.44. Case Study 2 was a 7-session trial teaching at another Chinese-medium school, with the participation of 28 Grade 4 students whose average age was 9.36. Case Study 3 was a trial teaching lasted for 5 sessions (plus 2 online assignments) at an English-medium school, with the participation of 17 Grade 5 students whose average age was 9.88.

This study has designed four research questions to investigate (1) students' achievements in ESL/EFL writing tasks; (2) the characteristics of students' peer-assessment feedback provision; (3) the characteristics of students' self-editing writing revisions; and (4) students' perceptions toward the designed pedagogy. The multiple study conducted a mixed-method evaluation in response to the four research questions. Both quantitative and qualitative methods were adopted for a comprehensive investigation into the trial implementation of the designed technology-mediated pedagogy.

First, a two-part content analysis was conducted to identify students' achievements in grammar accuracy and language expression in ESL/EFL writing tasks. The writing compositions of all 70 students across the three case studies were collected before and after the trial teaching. Each of these 140 writing compositions was analyzed in two ways to (1)

quantify students' writing performance under a four-dimension scoring rubric; and (2) measure students' syntactic maturity through counting four types of syntactic units and then calculating two ratios of syntactic measurement. The results of the two-part content analysis at the two time points were compared for answering the first research question.

Second, a content analysis was conducted to identify the characteristics of students' peer-assessment feedback provision in ESL/EFL writing tasks. All peer-assessment feedback items on the peer-assessment forms completed by all 70 students in the three case studies were collected via Edmodo. Each of the 1,095 feedback items was analyzed in two ways to (1) classify the type of feedback items into four categories: evaluations, clarifications, suggestions, and alterations; and (2) classify the depth of feedback items into two categories: surface copy-editing and content meaning enhancement. The number of different categories of feedback items was statistically analyzed for answering the second research question.

Third, a content analysis was conducted to identify the characteristics of students' self-editing revision-making in ESL/EFL writing tasks. All self-editing revision items in the final revision-tracked writing files produced by all 70 students in the three case studies were collected via MS Word Processor. Each of the 359 revision items was analyzed by classifying the type of revision items into two categories—form-edits and content-edits. The number of different categories of revision items was statistically analyzed for answering the third research question.

Fourth, a questionnaire survey with two rounds of focus group discussions was conducted at the end of each trial teaching to identify students' perceptions of the designed pedagogy. For the former, all students in each case study completed a self-administered questionnaire survey on the pedagogical arrangements, technological use and overall process of the designed pedagogy. For the latter, two 6-student groups in each case study expressed further opinions on the designed pedagogy, with the discussion guide based on the survey questionnaire for data triangulation. The students' opinions from the three questionnaire surveys and six focus group discussions across the three case studies were analyzed for the descriptive statistics and the systematic summary respectively, to answer the fourth research question.

1.3 Significance and Contributions of the Study

The study is of significance in inspiring teaching professionals to cope with the hotly debated challenges for the meaningful integration of digital productivity tools into subject-specific curriculum delivery in school education. The study has two important knowledge contributions to the pedagogical innovations for English learning in ESL/EFL writing classrooms in elementary schools.

First, the study targets at addressing the shift to the emergent paradigm of learning through digital productivity tools in language learning. The study innovates a technology-mediated pedagogy addressing both peer-assessment and self-editing

arrangements to meet the official advocacy of draft-review-edit process in ESL/EFL writing curriculum in local elementary schools; and enables teachers to capitalize on the peer-supported learning process to foster individual learning progression of different students according to their own learning needs, as well as to maintain the overall teaching support to the whole class of students, and at the same time without additional teaching burden. The outcomes of the study could provide ESL/EFL teachers with recommendations on the subject-specific approach to the meaningful integration of practical pedagogies with the use of ICT in ESL/EFL writing classrooms.

Second, the study targets at investigating the process and development of English writing competence among ESL/EFL students during the classroom use of digital productivity tools for active, constructive and interactive learning in writing lessons. The methodology of the study focuses on the collection of empirical data on the process of peer-discussion and self-editing involving the use of digital productivity tools in the real classroom environment in the elementary school sector, which is comparatively lacking in the research community. The outcomes of the study could provide evidence-based and process-oriented explanations for the occurrence of true learning under technology-mediated pedagogies involving the use of digital productivity tools for subject learning in ESL/EFL writing classrooms.

All in all, the evidence-based research outcomes of the study could contribute to

pedagogical advancement in the use of digital productivity tools for supporting ESL/EFL students in elementary schools to develop high-level linguistic knowledge. The study could help to reveal both the real potentials and the actual challenges in integrating digital productivity tools into ESL/EFL writing classrooms for enhancing the quality of learning, and in turn prompt opportunities for ESL/EFL students in elementary schools to experience the most effective process in developing English writing competence.

1.4 Organization of the Thesis

The thesis compiles eight chapters for a holistic reporting on this study. This chapter has highlighted the general background, underlying motivation, research design, evaluation methods, scholarly significance and promising contributions of the technology-mediated pedagogy designed in this study for fostering learner-centered learning in local elementary ESL/EFL writing classrooms.

Chapter 2 will present a reflective literature review for grounding this study to cater for the global research trends and local curriculum foci related to ICT integration for learning ESL/EFL writing in elementary schools; and to capitalize on the promising pedagogical elements and emergent technological integration for learner-centered learning in ESL/EFL writing curriculum for elementary schools.

Chapter 3 will provide an elaborative description of the three-component pedagogical design for the technology-supported review-discuss-edit process in writing lessons; the

real-school trial implementation through a multiple case study in three local Grade 4 and Grade 5 classrooms; and the mixed-method empirical evaluation in response to the four research questions targeted in this study.

Chapter 4 to Chapter 6 will present a detailed report on the participating schools and student profile, the teaching arrangement and lesson schedule, as well as the quantitative and qualitative research findings of the trial implementation of the designed technology-mediated pedagogy in the three case studies, respectively.

Chapter 7 will give a comprehensive summary of the similarities and differences observed from the main findings across the three case studies as reported in Chapter 4 to Chapter 6, and then make an evident discussion about the noteworthy issues related to the design and implementation of the technology-mediated pedagogy.

Chapter 8 will make a rounded conclusion of the goal, aims, design, methodology, findings, implications, contributions, and recommendations of this study, coupled with a highlight of the limitations of this study and directions for future research.

Chapter 2: Literature Review

This chapter will provide a critical review of extensive literature in the research fields related to technology-enhanced learning for ESL/EFL education for the underlying framework that has shaped this study. The literature review will summarize the global trends of ICT integration into ESL/EFL education in the 21st century; reveal the local curriculum foci of learning ESL/EFL writing in elementary schools in Hong Kong; identify the promising pedagogical elements for learner-centered learning in ESL/EFL writing curriculum for elementary schools; reveal the emergent technological integration of ICT into ESL/EFL education for learner-centered learning; and finally summarize the insights for this study.

2.1 Global Trends of ICT Integration into ESL/EFL Education in the 21st Century

This study is set to design a technology-mediated pedagogy that meets the important trends of ICT integration into ESL/EFL curriculum in the elementary school sector. This section therefore reviews academic and research literature to gain insights into the growing emphases and advocacies for ESL/EFL education supported by ICT in the 21st century.

2.1.1 Emphases of ICT in Education and ESL/EFL Education in the 21st Century

The prevalent use of ICT in daily pursuits since the late 20th century has induced the global trend toward the integration of the use of ICT into school education for curriculum delivery. With the capability to compute and store information and share information via

connectivity in digital form, ICT is considered potential to serve as a resource bank for storing learning materials in digital forms, and a communication hub for exchanging learning information through digital means (Greenhow, Robelia, & Hughes, 2009; Kong et al., 2014; Rodriguez, Nussbaum, & Dombrovskaia, 2012).

There are complex and nuanced relationships among the setting of educational goals, the design of pedagogical strategies and the deployment of technology integration (Chapelle, 2009; Kong et al., 2014; Rodriguez et al., 2012). When it comes to the digital era, the deployment of technology integration drives most decisions—the educational integration of a new technology into educational settings often reconstructs the dynamic equilibrium between the prescriptive objectives and the conventional practices in the teaching process. Teaching professionals in the 21st century are forced to reinterpret the fundamental purposes and rethink the core strategies in the teaching process, and thereby reconfigure the ways to appropriately use the new technology for accurately representing and delivering the actual subject matter to be taught.

The wave of educational use of ICT becomes one of the pushing factors for the paradigm shift to learner-centered learning in school education in the 21st century; in which such paradigm shift emphasizes the empowerment of learners with autonomy for an active engagement in the learner-centered process for knowledge construction with suitable resources, timely supports from teachers, and ample peer interactions in authentic learning

contexts (Chi & Wylie, 2014; Greenhow et al., 2009; Kong et al., 2014). In this regard, the realization of active, constructive and interactive learning becomes the centerpiece for the success of the abovementioned paradigm shift.

In the field of ESL/EFL education, two learning theories are central for premising the design and implementation of pedagogical integration of ICT for learner-centered learning (Chapelle, 2009; Tompkins, 2010, 2012; Yang, 2012). The first theory is constructivism (Piaget, 1969; Wadsworth, 1971). This theory views learning as a process of active construction of knowledge among students. It emphasizes the importance of students to create their own knowledge by linking their prior knowledge with the newly learned knowledge for knowledge application in new situation. The second theory is sociolinguistics (Vygotsky, 1978, 1986). This theory views learning a process that students use language to organize thought of the learned issues, as well as to interact with others for sharing and discussing ideas in authentic activities. It emphasizes the importance of language and social interaction on learning.

Researchers such as Chi and Wylie (2014), Greenhow et al. (2009) and Roessingh (2014) recommend three aspects characterized of effective technology-mediated pedagogies for promoting active, constructive and interactive learning underpinned by the constructivists' and sociolinguistic theoretical perspectives. First, those pedagogies should provide ample opportunities for students to activate prior knowledge relevant to the novel context while

learning new knowledge or solving new problems. Second, those pedagogies should provide ample opportunities for students to generate linkage between their prior knowledge with the newly learned knowledge for deepening their understanding of the learned topics. Third, those pedagogies should provide students with ample opportunities to interact with peers for a reciprocal construction, expansion and inference of knowledge via the exchange and discussion about alternative perspectives.

2.1.2 Advocacies for ICT Integration into ESL/EFL Education for Learner-centered Learning

Researchers in language education make four advocacies in response to the new pedagogical needs of school education in the digital era. First, future research should re-conceptualize the learning paradigm in language learning with the use of digital productivity tools (Domingo & Garganté, 2016; Garrett, 2009; Sundqvist & Sylvén, 2014). ICT in essence has three fundamental characteristics: the capability of data computation, the capability of information storage, and the connectivity between computing devices. When ICT is used in education, these three fundamental characteristics enable ICT to serve as a productivity and interaction tool in learning activities. In the 21st century, school education is advocated to realize a shift of learning paradigm from the teacher-centered knowledge acquisition to the learner-centered knowledge construction. Coupled with the advent of digital technology, this paradigm shift entails teaching professionals to change their practice

to focus more on the use of digital productivity tools for word processing and interpersonal communication, for enhancing learning and teaching quality.

Second, future research should emphasize more the investigations into the approaches of pedagogical use of different types of digital productivity tools for supporting learners to develop language competence in different modalities, including writing (Lin & Griffith, 2014; Richards, 2009; Sundqvist & Sylvén, 2014). The realization of the learning paradigm of learner-centered knowledge construction demands teaching professionals who are capable of providing suitable pedagogical supports that timely and properly scaffold learners to conceptualize subject knowledge during class time. In language education with the use of digital productivity tools, the role of suitable pedagogical supports is particularly important, because the design of most digital productivity tools is not pedagogically oriented. The previous studies in the related research fields could demonstrate the feasibility of digital productivity tools as the alternatives of traditional paper-based learning and teaching materials. However, these studies could not successfully pinpoint the specific pedagogical potential inherent in each distinctive function of the particular digital productivity tool under investigation.

Third, future research should emphasize more the investigations into the impact of the use of digital productivity tools in language classrooms in the elementary school sector (Domingo & Garganté, 2016; Richards, 2009; Sundqvist & Sylvén, 2014). Throughout the

decades, there have been a lot of studies contributing evidence of the impact of the use of digital productivity tools on the quality of language education in tertiary institutions and secondary schools. Researchers in the related research fields pay less attention to the impact of the use of digital productivity tools on language education in the elementary school sector, and thereby provide inadequate evidence in this aspect. With the perspective that language education at the elementary school level is the critical foundation for young learners in their long-term development of linguistic intelligence, future research is therefore recommended to focus more on investigating the impact of the use of digital productivity tools on supporting learners at the elementary school level for language learning.

Fourth, future research should emphasize more the investigations into the development of high-level linguistic knowledge (Garrett, 2009; Lin & Griffith, 2014; Richards, 2009). Throughout the decades, a lot of studies have investigated the impact of the use of digital productivity tools on the competence of learners in different modalities of language use. It is observed that the research scope of these previous studies focuses on the basic-level linguistic skills such as the increase of vocabulary pool. Although such basic-level linguistic skills are considered to be the building blocks for the development of linguistic intelligence, it is the goal of language curricula in different countries to facilitate learners to develop high-level linguistic knowledge, in particular the knowledge about grammar accuracy (such as subject-verb agreement) and language expression (such as question formation), to lay a more

solid foundation for the development of integrated ability in language use. Future research is therefore recommended to focus more on investigating the impact of the use of digital productivity tools on supporting learners to develop high-level linguistic knowledge about syntactic rules.

2.2 Local Curriculum Foci of Learning ESL/EFL Writing in Elementary Schools in Hong Kong

This study is set to design a technology-mediated pedagogy that meets the true needs of ESL/EFL writing curriculum in elementary schools in Hong Kong. This section therefore reviews the official documents and research literature concerning the foci of the content and delivery of local elementary ESL/EFL writing curriculum.

2.2.1 Content Foci in Local Elementary ESL/EFL Writing Curriculum

In Hong Kong, the modality of writing is one of the essential pillars in ESL/EFL curriculum in school education (Bryant & Carless, 2010; Lee, 2004). For the ESL/EFL writing curriculum in the elementary school sector in Hong Kong, the ultimate educational goal is to empower students to master the language forms and communicative functions in written English (Curriculum Development Council, 2002, 2004).

The mastery of language forms focuses on the essential knowledge about vocabulary use, grammar items and structure patterns. Students in this regard are able to use grammar accurately in English writings (Birch, 2014; Liu, 2014; Tompkins, 2010, 2012). In Hong

Kong, the grade-specific expectation for the mastery of language forms in written English among young students at the senior elementary grades are characterized of the ability to, for instance, use simple tenses and perfect tenses correctly; make subject-verb agreement correctly; distinguish the use of adjectives with *"-ed"* and *"-ing"* suffixes; distinguish the use of personal pronouns and possessive pronouns; use proper *wh*-words for question formation; spell words correctly; and use punctuation marks correctly (Curriculum Development Council, 2002, 2004).

The mastery of communicative functions focuses on the flexible application of essential knowledge about vocabulary use, grammar items and structure patterns for expression formulation in interpersonal communication. Students in this regard are able to express ideas appropriately (Birch, 2014; Liu, 2014; Tompkins, 2010, 2012). In Hong Kong, the grade-specific expectation for the mastery of communicative functions in written English among young students at the senior elementary grades are characterized of the ability to clearly and coherently present information, ideas and feelings with the proper choice of vocabulary and the diverse variety of phrasal- and/or sentential-patterns (Curriculum Development Council, 2002, 2004).

2.2.2 Delivery Foci in Local Elementary ESL/EFL Writing Curriculum

The educational authority in Hong Kong officially recommends the local elementary schools to deliver ESL/EFL writing curriculum to the young students through the approach of

stepwise guided writing, and encourages subject teachers to consider integrating the elements of peer-supported reviewing and editing—peer-assessment and self-editing—into ESL/EFL writing classrooms. ESL/EFL teachers in elementary schools are officially recommended to adequately prepare students to provide feedback on the composition drafts of their own and other classmates for suitable revisions on language expression and then grammar accuracy (Bryant & Carless, 2010; Curriculum Development Council, 2002, 2004; Lee, 2011).

For the integration of peer-assessment element, teachers are officially recommended to set a limited and specific focus for students when assessing other classmates' writing compositions, such as focusing on subject-verb agreement first and then the use of tenses and punctuation. The conventional practice in the majority of local elementary ESL/EFL classrooms, meanwhile, is that teachers provide students with a paper-based peer-assessment form with a relatively simple design. Students are only required to indicate their perceived rating at a smiling-face scale on a few items under two main categories of grammar accuracy and language expression. No detailed feedback is required from students on peers' writing compositions.

For the integration of self-editing element, teachers are also officially recommended to set a limited and specific focus for students when editing their own writing compositions, similar to the practice in peer-assessment tasks. The conventional practice in the majority of local elementary ESL/EFL classrooms, meanwhile, is that students are asked to edit their own

writing compositions with the post-marking feedback from teachers. Students are assigned to read their marked compositions, and then rewrite their compositions by making changes highlighted by the teachers, especially for the errors in terms of spelling, punctuation and grammar. Students are normally not required to add or delete ideas and revise organization of their compositions in the rewriting assignments.

According to Bryant and Carless (2010), Lee (2011) and Lee and Coniam (2013), the elementary ESL/EFL writing curriculum in Hong Kong officially targets at a process-oriented approach with a recursive draft-review-edit process. The conventional practice in the majority of ESL/EFL writing classrooms in Hong Kong, however, becomes a product-oriented and test-liked one-shot writing process. The simultaneous integration of peer-assessment and self-editing elements is rare in ESL/EFL writing lessons in the majority of local elementary schools. These researchers suggest the need to put more efforts to realize the process-oriented writing tasks in local ESL/EFL writing classrooms, in which students are guided to draw upon their language knowledge for a confident feedback-provision when assessing other classmates' writing products and a critical revision-making when editing their own writing products.

2.3 Promising Pedagogical Elements for Learner-centered Learning in ESL/EFL Writing Curriculum for Elementary Schools

The trends of ICT in ESL/EFL education around the world advocate the learner-centered learning paradigm; of which students actively engage in personal reflection and social interaction for constructing and consolidating knowledge. The official documents in ESL/EFL writing curriculum in Hong Kong advocate the process-oriented approach; of which students draft, review and edit their compositions in each writing assignment. Peer-assessment and self-editing are then worthy of consideration for the learner-centered learning in ESL/EFL writing classrooms in local elementary schools. The former is a kind of student-led activity for interactive learning with the peers; while the latter is a kind of student-led activity for constructive learning on their own. All these pedagogical elements have a common emphasis on the active learning engagement by students who have the autonomy and assume the responsibility to better the writing products.

2.3.1 Peer-assessment

In ESL/EFL writing curriculum, peer-assessment by individual learners is an important component at the revision stage in the writing process. It is the step that individual learners use criteria to make judgments and give feedback on the writing products of their peers (Topping, 2005, 2009; Tompkins, 2010, 2012; Strijbos & Sluijsmans, 2010). The educational value of peer-assessment lies in the action of feedback-provision which brings about external

influences to both peer-assessors and peer-assessees on stimulating motivation and sense of responsibility to enhance writing knowledge and skills (Gielen et al., 2011; Shih, 2011; Stellmack et al., 2012; Strijbos, Narciss, & Dunnebier, 2010).

In the field of ESL/EFL education, peer-assessment is a pedagogy often adopted for writing lessons across different grades with a high flexibility for classroom implementation, in terms of group size, member ability, proportion between peer feedback provision and teacher feedback provision, etc. The peer-assessment activities usually arrange learners to review and comment the writings produced by group members (Roberts, 2006; Shih, 2011; Wang, 2016; Xiao & Lucking, 2008; van Zundert, Sluijsmans, & van Merriënboer, 2010).

Learners are observed to provide four types of peer-assessment feedback items with two main intentions in general (AbuSeileek & Abualsha'r, 2014; Chang, 2012; Lee, 2011; Liu & Sadler, 2003; Moore & MacArthur, 2012; Woo, Chu, & Li, 2013). The first feedback type is evaluations—peer-assessors comment on certain features of the peer-assessed compositions with a performance remark. The second feedback type is clarifications—peer-assessees are asked to explain and justify certain writing issues in the peer-assessed compositions. The third feedback type is suggestions—peer-assessors mark the areas of concern and/or the directions for changes for peer-assessees to make further revision. The fourth feedback type is alterations—peer-assessors directly provide specific changes on certain writing issues in the peer-assessed compositions for peer-assessees' consideration. Regarding the two main

intentions of feedback-provision, the first intention is for surface copy-editing to enhance peer-assessees' accuracy of grammar, spelling and punctuation used in English writing; whereas the second intention is for content meaning enhancement to enhance idea presentation and text organization in the peer-assessed compositions.

As recommended by Tompkins (2010, 2012), learners as young as at Grade 1 are observed able to individually proofread peers' writing products based on the guidelines or checklists provided by teachers for peer-assessment in writing classrooms. Young learners enjoy informing their peers about what and how to improve writing products, especially giving comments and/or recommendations for correcting mechanical errors related to spelling, punctuation and grammar use.

As the official curriculum documents highlight the importance and encourage the arrangement of peer-assessment tasks in ESL/EFL curriculum in school education, there is a growing trend for elementary schools in Hong Kong to embed the element of peer-assessment in ESL/EFL writing classrooms (Bryant & Carless, 2010; Lee, 2004; Lo & Hyland, 2007). Considering the limited linguistic competence among young learners, the peer-assessment tasks in local elementary schools mainly ask learners to complete review forms that enlist a simple ranking rubric for relatively few assessment items; and the learners are normally not required to provide explanations or justification of their peer-review results (Bryant & Carless, 2010; Curriculum Development Institute, 2004; Lee & Coniam, 2013).

From the systematic review of refereed literature on peer-assessment for English writing curriculum since 2000 over the world, around one-third of the existing literature (35.90%) reports on rigorous research on the pedagogical arrangement on peer-assessment in ESL/EFL curriculum. Less than one-fifth of the existing literature (14.10%) reports on rigorous research on the pedagogical arrangement of peer-assessment in elementary education sector. It is noticed that around one-tenth of the existing literature (9.40%) reports on rigorous research into the pedagogical arrangement of peer-assessment in ESL/EFL curriculum in elementary education sector. In response to the lack of empirical research on the implementation of peer-assessment tasks in ESL/EFL writing classrooms in elementary schools, it is worthwhile to explore the pedagogical innovations which pedagogically arrange peer-assessment tasks in elementary ESL/EFL writing classrooms.

2.3.2 Self-editing

In ESL/EFL writing curriculum, self-editing by individual learners is an important step at the editing stage in the writing process. It is the step that students proofread own compositions to locate and correct language errors, if any, for the better readability of their writing products (Lee, 2004; Suzuki, 2009; Tompkins, 2012). It is a valuable opportunity for students to assume responsibility for reflecting on their own writing performance and consolidating their own writing knowledge (Stellmack et al., 2012; Tompkins, 2010, 2012). There are two main categories of writing revisions made by young learners (Faigley & Witte,

1981; Moore & MacArthur, 2012; Tompkins, 2010, 2012; Woo, Chu, Ho, & Li, 2011). The first type is form-edits, which refer to formal changes involving conventional copy-editing operations, such as those in grammar, spelling and punctuation. The second type is content-edits, which refer to meaning-preserving changes for the primarily syntactical or lexical changes without altering the original concepts in the text, such as additions, deletions, substitutions and rearrangements.

According to Liu and Sadler (2003) and Woo et al. (2011), the writing revisions made by learners in the self-editing process are reciprocally related to the feedback that they gain from teachers and peers. Based on Tompkins' (2010, 2012) rich observation of students' writing behaviors in school education, young learners focus on hunting mechanical errors in terms of punctuation, spelling and grammar use for making self-editing revisions at the word and phrase levels. They tend to make additions and substitutions more than deletions and rearrangements when editing their own compositions. It is natural that elementary school students cannot locate and correct every error in their compositions due to their limited linguistic competence. Meanwhile, learners as young as at Grade 1 are generally observed able to locate and correct explicit mechanical errors for polishing their writing products, in line with their capability to do peer-assessment tasks in writing lessons.

As noted by Bryant and Carless (2010), Lee (2004) and Lo and Hyland (2007), the Hong Kong school education sector inclines to embed the elements of self-editing into students'

post-marking rewriting assignments—after teachers have scored the original writing compositions with a number of remarks on error corrections and/or revision suggestions, the students are asked to rewrite the marked compositions by taking teachers' remarks into consideration. Those rewriting assignments normally focus on correcting mechanical errors.

From the systematic review of refereed literature on self-editing for English writing curriculum since 2000 over the world, half of the existing literature reports on rigorous research on the pedagogical arrangement on self-editing in ESL/EFL curriculum. Less than one-fifth of the existing literature (13.00%) reports on rigorous research on the pedagogical arrangement of self-editing in elementary education sector. It is also noticed that around one-tenth of the existing literature (6.50%) reports on rigorous research into the pedagogical arrangement of self-editing in ESL/EFL curriculum in elementary education sector. As the implementation of self-editing tasks in ESL/EFL writing classrooms in elementary schools is insufficiently investigated, it is worthwhile to explore the pedagogical innovations which pedagogically arrange self-editing tasks in elementary ESL/EFL writing classrooms.

2.4 Emergent Technological Integration of ICT into ESL/EFL Education for Learner-centered Learning

The process of writing per se is a manifestation of self-interpretation and self-reflection by individual writers (Tompkins, 2010, 2012). In Hong Kong, the ultimate expectation of ESL/EFL writing curriculum sets to empower individual students to capably draft, review

and edit writings on their own (Curriculum Development Council, 2004; Curriculum Development Institute, 2004). This entails a pressing need to explore pedagogical designs which allow students to perform the abovementioned writing tasks on their own, at the same time enable them to interact with peers for enriching their reflection and thereby advancing their own performance in the writing tasks (Lee & Coniam, 2013; Lee & Wong, 2014). The pedagogical arrangements of peer-assessment and self-editing in ESL/EFL writing classrooms help step forward in this aspect, with a potential to advance students' experience in a process-oriented approach to ESL/EFL writing as discussed in the previous sub-section.

The school education sector in Hong Kong conventionally relies on the pencil-and-paper-based approach when implementing the draft-review-edit process with students in ESL/EFL writing classrooms; in spite of the growing concern on technological use at the idea-brainstorming stage in ESL/EFL writing tasks (Bryant & Carless, 2010; Lee & Wong, 2014; Lo & Hyland, 2007). There are scarce research studies, such as Mak and Coniam (2008), Woo, Chu, Ho, and Li (2011) and Woo, Chu, and Li (2013), on investigating the potential of technology-supported approach to facilitate students' peer-assessment tasks and self-editing tasks in the local school education sector. These research studies meanwhile focus on the group-based collaborative writings in the project-based writing assignments; not on students' individual writings highlighted in official curriculum documents. This promising research issue can be addressed by riding on the global trend toward the use of digital

productivity tools for subject teaching and learning in school education.

Digital productivity tools refer to software applications that support users to accomplish specific tasks on searching, recording, collating, analyzing, reporting, presenting, and/or sharing information for the personal, learning or working purposes (Heinrichs & Lim, 2010; Ritzhaupt, Dawson, & Cavanaugh, 2012). In language subject area, there is a research advocacy of investigating how the use of digital productivity tools impacts on language classrooms at the elementary school level, especially on the development and application of high-level linguistic knowledge such as writing competence, as language learning at the elementary school level is the critical foundation for young students in their long-term development of linguistic intelligence (Andrews et al., 2007; Lin & Griffith, 2014; Richards, 2009). The pedagogical integration of social learning platforms and word processing productivity tools is one of the promising directions on the advancement of learning experience in elementary ESL/EFL writing classrooms. The existing literature in the related research fields recognizes that the social learning platform Edmodo and the word processing productivity tool MS Word Processor are two digital productivity tools sufficiently popular and user-friendly for school students to use.

2.4.1 Educational Use of the Social Learning Platform—Edmodo

Social learning platforms are emerging web-based tools specific for educational use. These websites have interface layouts and communication functions similar to those in social

networking sites, but their user groups and interaction contexts are limited for designated communities within schools for pedagogical purposes (Carlson & Raphael, 2015; Davies & Merchant, 2009; Ghamrawi & Shal, 2012). Social learning platforms provide affordances that support students across different grades to conveniently share and store multimedia resources, and easily exchange and track discussion ideas within restricted groups of teachers and students for learning purposes anytime, anywhere. These platforms are therefore considered conducive to active, constructive and interactive learning among students when appropriate subject topics and pedagogical designs are selected in classroom teaching (Coelho, Galante, & Pires, 2016; Halse & Mallinson, 2009; Säljö, 2010).

One of the typical social learning platforms that gain a high popularity in educational settings in recent years is Edmodo (Al-Said, 2015; Carlson & Raphael, 2015; Coelho et al., 2016). Edmodo (https://www.edmodo.com/) is a social learning platform designated for teaching and learning purposes in the education sector. The operation of Edmodo involves two main steps: (1) creation of learning groups—teacher users create individual learning groups, of each focuses on the selected subject discipline(s) and the selected learning grade(s) across prekindergarten to higher education levels; and (2) invitation to student members—teacher users invite the designated group of students to join the particular Edmodo learning group created for the community-based learning process. Edmodo allows teachers to invite parents of the student members to join the designed learning groups for monitoring

their own children's learning progress when needed.

Figure 2.1 shows the interface of Edmodo personal homepage for teacher users. Edmodo provides teacher users with a total of 18 functions for six actions to (1) check learning status of individual students; (2) manage learning resources for students; (3) manage user accounts for individual students; (4) manage user grouping at group and class level, (5) prepare learning assignments with flexible timeframe; and (6) link with online resources for students. The most remarkable feature of Edmodo is its capacity of instant and ubiquitous message-posting function, allowing the attachment of multiple-format files, for member communication within and across the learning groups owned by the same teacher users. This feature enables Edmodo to support pedagogical activities which emphasize peer communication among students across different subjects, including ESL/EFL education.

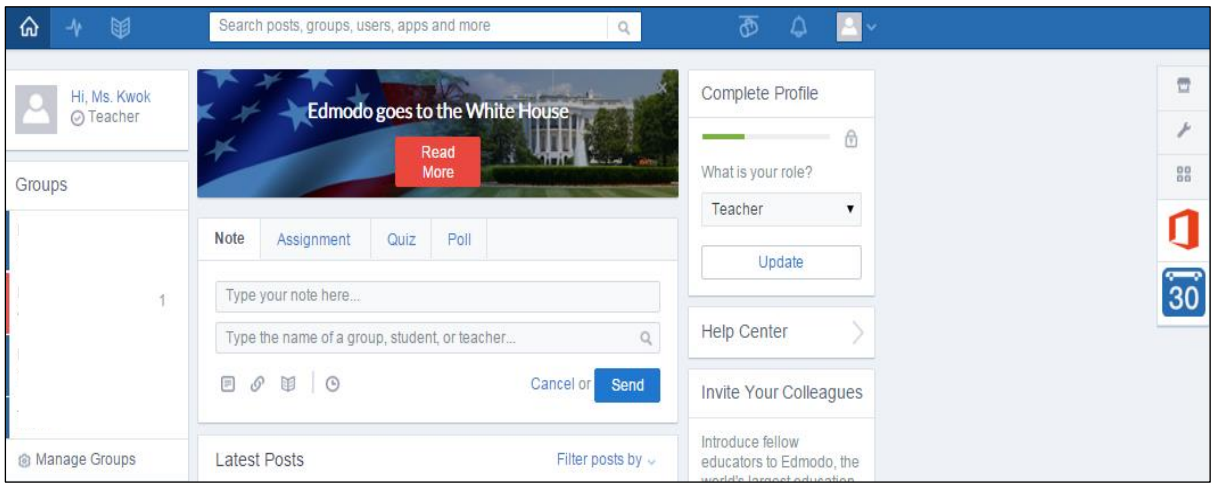

Figure 2.1. The interface of Edmodo account homepage for teacher users.

The social learning platform Edmodo has been increasingly integrated into curriculum delivery of varying subjects across different learning grades, especially in the tertiary

education sector. Its pedagogical use catches a growing attention in school education over the world; yet rare efforts have been found in the elementary education sector, especially for the learning of language subjects. From the systematic review of refereed literature on the use of Edmodo in English writing curriculum since 2000 over the world, less than one-fifth of the existing literature (16.00%) reports on rigorous research on the pedagogical integration of Edmodo in the elementary education sector such as Carlson and Raphael (2015) and Thibaut (2015); with none for ESL/EFL curriculum. It is also noticed that less than one-fifth of the existing literature (16.00%) reports on rigorous research on the pedagogical integration of Edmodo in ESL/EFL curriculum such as Al-Said (2015) and Coelho et al. (2016); with none for the elementary education sector. As the use of Edmodo in ESL/EFL writing classrooms at elementary school level is relatively unexplored, it is worthy of empirical research on the pedagogical innovations which use Edmodo for supporting the logistic arrangements and mutual interactions in learning tasks with an emphasis on peer communication among students in elementary ESL/EFL writing classrooms.

2.4.2 Educational Use of Word Processing Productivity Tool—MS Word Processor

School education around the world has habitually integrated the use of word processing productivity tools into writing tasks in language subjects, as these digital productivity tools have a series of functions that support users to conveniently compose, edit and format text documents in digital ways (Choi, 2013; Li & Hegelheimer, 2013; Lin & Yang, 2011). In

educational setting, MS Word Processor is one of the most popular word processing productivity tools used for supporting writing curriculum in language subjects. Six functions of MS Word Processor are recognized to be particularly helpful in writing classrooms (Elola & Oskoz, 2016; Lawley, 2016; Major, 2010). Figure 2.2 shows the interface of MS Word Processor for composing, editing and formatting text.

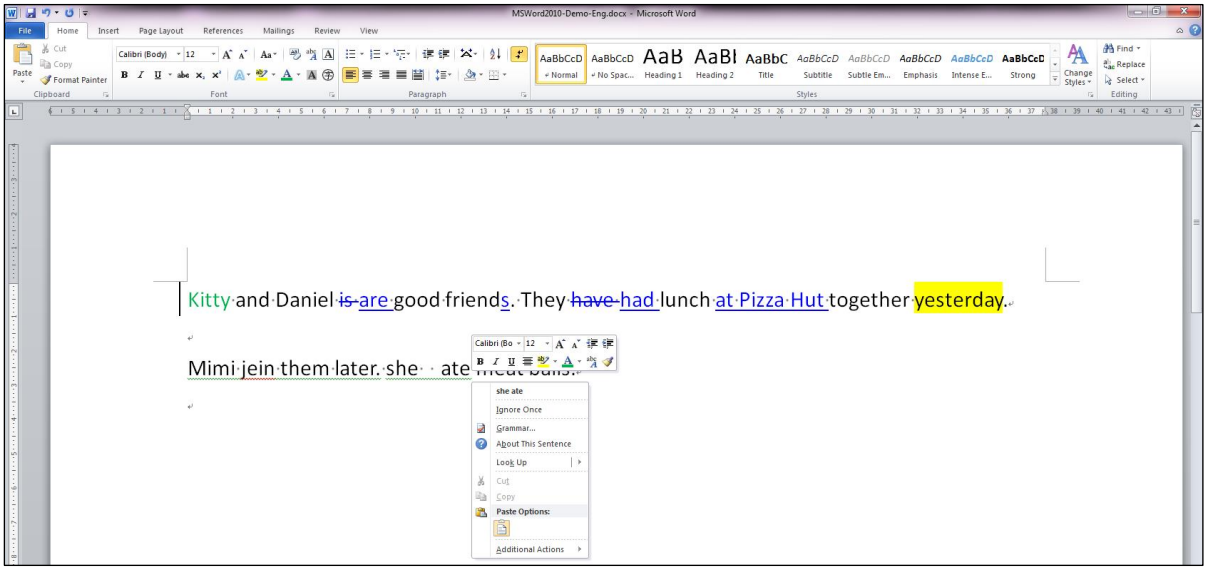

Figure 2.2. The interface of MS Word Processor for composing, editing and formatting text.

The first function is a threefold text composition function for cutting, copying and pasting text. Users can apply this threefold function to move text for a more effective communication when preparing digital document files. This threefold text composition function is commonly taught in elementary school curriculum around the world, as it is one of the fundamental and prerequisite competences for technology-enhanced learning (Greenhow et al., 2009; Major, 2010; Tompkins, 2010).

The next two functions are text-formatting functions: highlighter and change of font

color. Users can use the former function to mark the selected scope of text with an eye-catching color; and the latter function to change the selected scope of text with a different color for drawing readers' attention. These two text-formatting functions are commonly used in technology-supported writing tasks since the elementary schooling stage, especially for the tasks require students to show revisions in digital document products (Major, 2010; Tompkins, 2010, 2012).

The next three functions are text-editing functions: spelling-check, grammar-check and changes-tracker. For the spelling-check and grammar-check functions, the system automatically identifies and underscores typos and grammatical errors in terms of tense use, subject-verb agreement, punctuation, capitalization, etc. with curve lines in two different colors in the digital document files. Users can right-click the respective curve lines to check possible changes suggested by the system. In technology-supported writing tasks, students might be encouraged to use these two functions for bettering the accuracy in spelling and grammar use in their writing products (Lawley, 2016; Major, 2010; Zaini & Mazdayasna, 2015). Meanwhile, according to Major (2010), MS Word Processor on average can correctly identify around one-third of the errors in a digital document file—with the spelling-check function demonstrating around 90.00% accuracy and the grammar-check function demonstrating around 60.00% accuracy. As recommended by Tompkins (2010, 2012), students in technology-supported writing tasks should develop an awareness that their own

judgement of error occurrence is most important; and the spelling-check and grammar-check functions should be considered as a hints-provider instead of an error-hunter.

For the changes-tracker function, users edit text in the digital document files without removal of the original version, of which the newly-inserted text is underscored in a different color and the newly-deleted text is crossed out in a different color. In technology-supported writing tasks, students in general perceive this function as most useful because they can conveniently and clearly mark revisions in the digital document files, unlike the paper-and-pencil approach using tedious revision codes and unrecognizable revision notes (AbuSeileek & Abualsha'r, 2014; Elola & Oskoz, 2016; Liu & Sadler, 2003).

From the systematic review of refereed literature on the use of MS Word Processor in English writing curriculum since 2000 over the world, less than one-fifth of the existing literature (12.12%) reports on rigorous research into the pedagogical integration of MS Word Processor in the elementary education sector; but none for ESL/EFL writing classrooms. It is also noticed that less than one-fifth of the research literature (15.15%) reports on rigorous research into the pedagogical integration of MS Word Processor in ESL/EFL curriculum. Only the works by AbuSeileek and Abualsha'r (2014), Chang (2012), Elola and Oskoz (2016), Liu and Sadler (2003) and Zaini and Mazdayasna (2015) are empirical research on the pedagogical integration of MS Word Processor into ESL/EFL writing classrooms; with all for the tertiary education sector but not for the elementary education sector. In response to the

lack of empirical research into the use of MS Word Processor in ESL/EFL writing classrooms at elementary school level, it is worthwhile to explore the pedagogical innovations which use MS Word Processor in writing tasks, especially the one for peer-assessment and self-editing, in elementary ESL/EFL curriculum. The functions of MS Word Processor are anticipated to allow students in peer-assessment tasks to more easily provide corrective feedback; and facilitate students in self-editing tasks to more easily make informed changes based on the simultaneous viewing of the original and edited writing compositions.

2.5 Insights for This Study

The literature review in sections 2.1 and 2.2 identifies a pressing need of elementary ESL/EFL writing curriculum to expose students into a learner-centered learning process which emphasizes interactive communication among peers for their active engagement in knowledge construction in a reflective and responsible manner. The literature review in sections 2.3 and 2.4 reveals a promising direction for elementary ESL/EFL writing curriculum to integrate the pedagogical arrangements of peer-assessment and self-editing with the technological use of Edmodo and MS Word Processor for learner-centered learning.

In those previous studies involving the classroom implementation of peer-assessment and self-editing, the related pedagogical designs were mainly based on the principles that peer-assessment is a peer learning process fostering students' knowledge construction and application; while self-editing is an individual learning process fostering students' knowledge

construction and reflection. The strategies of those pedagogical designs commonly focused on arranging students in the peer-assessment tasks to apply knowledge for providing learning feedback for peer support; and in the self-editing tasks to reflect on knowledge for self-improvement after receiving learning feedback.

For those previous studies involving the educational use of Edmodo and MS Word Processor, the related pedagogical designs were mainly based on the principles that Edmodo is a communication portal which fosters students' learning interaction through affording efficient work on information access, resources distribution and ideas exchange; while MS Word Processor is a text editor which fosters students' learning engagement through affording efficient work on text-composition, text-formatting and text-editing. The strategies of those pedagogical designs commonly focused on arranging students to use the functions of Edmodo on distributing multimedia files and posting group messages for sharing and discussing learning products within designated groups of peers; and to use the functions of MS Word Processor on composing, formatting and editing text for making and polishing learning products on their own.

These literature review results inform three pedagogical issues and four research questions concerned in the development and investigation, respectively, of the technology-mediated pedagogy targeted in this study.

2.5.1 Pedagogical Concerns for Developing the Targeted Pedagogy

The official curriculum documents in Hong Kong recommend ESL/EFL writing classrooms in the school education sector to include the draft-review-edit process among students in between the teacher's instruction of language knowledge targeted in the respective writing tasks. Building on this advocated process, the technology-mediated pedagogy targeted in this study focused on exploring the potential of the review-discuss-edit process. Such pedagogy took three issues into consideration, in line with the advocacy of learner-centered learning in technology-supported ESL/EFL writing classrooms.

First, the designed pedagogy targeted on more opportunities for students' engagement. The technology-mediated pedagogy was designed to emphasize students' action to "review" other classmates' writing compositions, followed by an attempt to discuss their review outputs with other peer-assessors online, through peer-assessment tasks; as well as the action to "review" and "edit" their own writing compositions through self-editing tasks. These writing tasks allowed students to actively construct and consolidate English language knowledge through the authentic writing works with peer support.

Second, the designed pedagogy targeted at less emphasis on teachers' instruction. In the designed pedagogy, teachers' instruction was less emphasized and transformed as a precise and concise discussion session in between peer-assessment and self-editing tasks; in which the teacher led the whole class of students to apply and reflect on their English language

knowledge to tackle several writing issues for solving common writing errors in the respective writing tasks.

Third, the designed pedagogy targeted on more empowerment of students' responsibility. In the designed pedagogy, the students were empowered to be "Little Teachers" and informed of their expected responsibility to peer-assess writing compositions produced by their classmates. The "Little Teachers" used the peer-assessment form prepared by the teacher as a checklist to give rating and mark comments in the peer-assessment tasks. The students were continuously reassured that they were responsible "Little Teachers" when they tried their best to give as much as feedback on peers' writing compositions, as it was understandable that young students were unable to identify and/or correct every error in peers' writing compositions.

2.5.2 Research Concerns for Investigating the Targeted Pedagogy

In Hong Kong, the content foci of ESL/EFL writing curriculum for elementary school students are grammar accuracy and language expression. The study aimed to explore the pedagogical use of digital productivity tools for supporting ESL/EFL students in Hong Kong elementary school sector to enhance their competence in using grammar accurately and expressing ideas appropriately in English writings. The technology-mediated pedagogy designed in this study innovated the current practice to include both peer-assessment and self-editing elements in writing tasks, with an innovative integration with the use of social

learning platform and word processing productivity tool for the sake of enhancing task efficiency and effectiveness, for ESL/EFL students in Hong Kong elementary schools.

This study focused on four research questions:

(i) What are the achievements of elementary ESL/EFL students in grammar accuracy and language expression in ESL/EFL writing tasks with the process of peer-assessment and self-editing using social learning platform and word processing productivity tool?

(ii) What are the characteristics of feedback provision among elementary ESL/EFL students in the process of peer-assessment when using social learning platform in ESL/EFL writing tasks?

(iii) What are the characteristics of writing revisions among elementary ESL/EFL students in the process of self-editing when using word processing productivity tool in ESL/EFL writing tasks?

(iv) What are the perceptions of elementary ESL/EFL students toward the use of social learning platform and word processing productivity tool for supporting peer-assessment and self-editing in ESL/EFL writing tasks?

This study developed an innovative technology-mediated pedagogy which aligned with the learning and teaching foci emphasized by official ESL/EFL writing curriculum and the

learning and teaching flow arranged in normal ESL/EFL writing classrooms in Hong Kong elementary school sector. This addresses the pressing need of technology-supported pedagogical innovations for the learning of ESL/EFL writing among elementary school students. The design of such technology-mediated pedagogy was trialed in the real classroom environment through a multiple case study in three local elementary schools. The impact of such technology-mediated pedagogy on learning process and learning outcomes was empirically investigated through a mixed-method evaluation in the multiple case study. This addresses the current gap in empirical research on technology-supported pedagogical innovations for the learning of ESL/EFL writing among elementary school students. This study, in turn, is a step forward for the advancement of empirical research and pedagogical practice in the field of technology enhanced learning in ESL/EFL writing curriculum in the elementary school sector.

Chapter 3: Methodology

This chapter will describe the pedagogical activity flow designed for the targeted technology-mediated pedagogy; the multiple case study for the trial of the designed technology-mediated pedagogy; and the research methods for the evaluation of the designed technology-mediated pedagogy.

3.1 The Design of the Technology-Mediated Pedagogy: The Pedagogical Flow

3.1.1 Rationale of the Designed Technology-Mediated Pedagogy

The goal of the designed technology-mediated pedagogy is to promote students to achieve active, constructive and interactive learning in ESL/EFL writing curriculum. It is set to address the existing limitations of conventional practice in ESL/EFL writing curriculum. In normal ESL/EFL writing lessons, the learning and teaching activities are conventionally sequenced as student writing, brief peer-assessment, teacher marking, and then student rewriting with corrections. Concerning the pedagogical arrangement of peer-assessment, the conventional practice is to ask students to complete a simple peer-assessment form by indicating their levels of satisfaction of the being-assessed writing compositions, without the need to provide concrete comments or suggestions for further revision or improvement. The peer-assessment often focuses on few key marking areas without specifications of knowledge points concerned. Regarding the pedagogical arrangement of self-editing, the conventional practice is that students only receive the marked compositions with teachers' brief remarks on

the writing errors and general comments on the whole compositions, without concrete revision suggestions. Students then rewrite their own compositions with an attempt to correct the writing errors based on teachers' related remarks. Teachers then read the corrected compositions without further detailed comments. There is seldom a pedagogical arrangement of whole-class discussion in between peer-assessment and self-editing; and the conventional practice is that teachers highlight few common errors in students' writing compositions to the whole class. Students in this regard lack opportunities not only to check peers' writing errors on their own, but also to interact with peers and make reflection on the writing errors identified. There are three limitations in the abovementioned conventional practices. First, students lack opportunities to actively engage in and reflect on knowledge application. Second, students lack opportunities to extensively interact with peers and teachers for knowledge exchange or discussion. Third, students lack opportunities to meaningfully construct or consolidate required knowledge.

In response to these three existing limitations faced by students in ESL/EFL writing classrooms, this study designed a technology-mediated pedagogy that was theoretically guided by the framework of active, constructive and interactive learning. The designed pedagogy included three pedagogical components and two technological elements. The three pedagogical components were: (1) peer-assessment tasks for active and interactive learning; (2) whole-class discussion for constructive and interactive learning; and (3) self-editing tasks

for active and constructive learning. The two technological elements were: (a) the use of Edmodo for an instant communication and file exchange and a convenient student grouping in the interactive learning process; and (b) the use of MS Word Processor for providing hints via spelling-check and grammar-check functions to scaffold students in the constructive learning process.

The overall three-component design is set to expose students to an active learning process conducive to the subsequent interactive and constructive learning process. Students' active learning, accompanying constructive and interactive learning in the designed pedagogy was realized at two levels: the action of providing feedback items in the peer-assessment tasks and the action of deciding feedback acceptance in the self-editing tasks. It is different from the conventional one focusing on teachers' highlights of general observations when marking the writing compositions without an explicit discussion with students about their specific language concerns.

The pedagogical arrangement of peer-assessment and the technological use of Edmodo are set to foster students' interactive learning experience. In the peer-assessment process, the students took the role as "Little Teachers". The medium of interaction in students' interactive learning was their writing compositions. The action of interaction in students' interactive learning was the process of feedback provision in peer-assessment. The form of interaction or communication in this interaction process was the action of giving individualized feedback or

comment. The social learning platform Edmodo provided a technological support via its instant messaging functions for students' convenient connection with designated peers and clear track of communication contents, and efficient exchange and easy management of writing comments and files with peers.

The pedagogical arrangement of self-editing and the technological use of MS Word Processor are set to foster students' constructive learning experience. Constructive learning is achieved by the process of self-editing of their own writing compositions, of which the action of self-editing entailed students' knowledge construction. The instructor also played a teaching role. Meanwhile, this teaching role was much simple yet critical than the one in normal ESL/EFL writing classrooms—only selecting a number of common writing errors and/or noteworthy language issues from the authentic student work for a meaningful discussion. The students read, checked and marked errors in peers' writing compositions sentence-by-sentence. This process involved authentic and meaningful tasks with more direct and concrete supports. This is different from the conventional practice that students can only receive few general comments from teachers and experience an impractical process in reflecting on writing process. The word processing productivity tool MS Word Processor provided a technological support via its varying text-editing functions for students' easy identification of writing errors, convenient check on possible corrections, efficient editing of writing text, and clear tracking of writing revisions.

3.1.2 Flow of the Designed Technology-Mediated Pedagogy

The technology-mediated pedagogy targeted in this study was designed with three components to expose students to three types of learning and teaching activities in a process-oriented writing unit in sequence, namely (1) students' individual peer-assessment of two classmates' writing; (2) teacher-led whole-class discussion about typical writing issues; and (3) students' individual self-editing of their own writing composition (see Figure 3.1). The social learning platform Edmodo was selected for allowing the teacher to conveniently manage the arrangement of task logistics and member communication without the constraint of classroom seating plan. The word processing productivity tool MS Word Processor was selected for supporting students on tracking changes and inserting comments in peer-assessment tasks, and in turn promoted them to make informed changes in self-editing tasks.

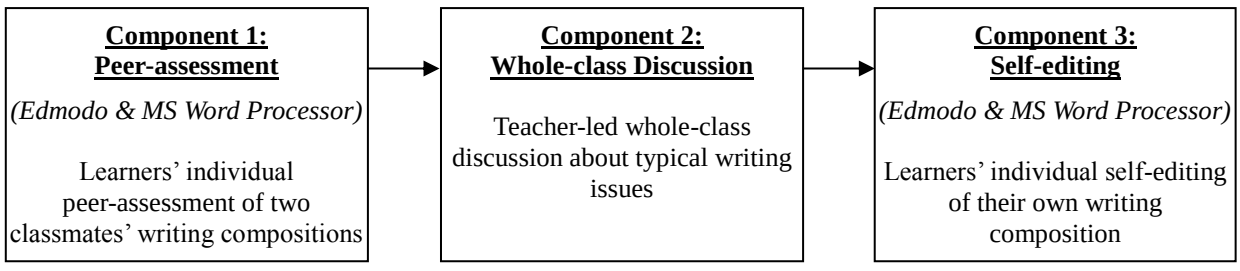

Figure 3.1. The flow of the technology-mediated pedagogy designed in this study.

For the classroom implementation of the three-component designed pedagogy in this study, the preparatory work paid attention to two issues. First, the primary writing compositions (i.e., the unmarked writing compositions produced by the students in a

paper-and-pencil manner) for the writing units under the designed pedagogy were collected from every participating student. The thesis author typed out each of the primary writing composition as an individual MS Word file without students' information revealed, and then assigned each file with a code in a system that author identity could hardly be estimated. This act had three purposes: (1) preparing for the electronic distribution of writing compositions under the designed pedagogy; (2) ensuring the anonymity for peer-assessment task in a non-biased manner; and (3) preventing possible misunderstanding by peer-assessors due to unclear handwritings. Second, the thesis author confirmed students' experience and/or ability in using Edmodo and MS Word Processor for learning. This ensured that the students were capable of doing the technology-supported peer-assessment and self-editing tasks under the three-component designed pedagogy. Third, a research-specific account was created on the social learning platform Edmodo for each writing unit for logistic arrangement (such as material distribution) and member communication (including student-teacher and student-student sharing and/or discussion).

3.1.2.1 Component 1: Students' Individual Peer-assessment of Two Classmates' Writings

The first component of the designed pedagogy was students' technology-supported peer-assessment tasks. Each student individually worked on the double-blind peer-assessment, with a tailor-made peer-assessment form, of two writing compositions produced by two classmates. For the classroom arrangement of the technology-supported peer-assessment

tasks in this study, the preparatory work involved three main steps.

First, a two-section file was created for each peer-assessment case: the first section was the to-be-peer-assessed writing composition; and the second section was the peer-assessment form tailored for this study. This arrangement intended to ensure the students to mark and/or make revisions on the to-be-peer-assessed writing composition, and then soon give overall ratings and detailed comments on the targeted assessment dimensions. The peer-assessment form (see Appendix A) provided students with a rating-cum-comment framework for guiding students to focus on specific dimensions in their individual work on peer-assessment. Such rating-cum-comment framework covered nine assessment dimensions, which were in response to the nine major areas emphasized in the development of writing skills among students at Key Stage 2 (i.e., Grade 4 to Grade 6) as stipulated in the official ESL/EFL curriculum documents in Hong Kong (Curriculum Development Council, 2002, 2004). The "rating" part in the peer-assessment form asked students to rate, denoted by a three-smiling-faces scale, the targeted nine assessment dimensions of the to-be-peer-assessed writing composition. The "comment" part in the peer-assessment form encouraged students to give their peers the detailed comments and/or elaboration on the rating, or other more concrete suggestions on improvement directions. The "other comments" part in the peer-assessment form was provided for overall comments on the whole piece of to-be-peer-assessed writing composition.

Among the nine assessment dimensions covered by the peer-assessment form, the first seven dimensions were related to the accuracy of grammar use in the writing compositions; and the remaining two were associated with the appropriateness of language expression in the writing compositions. The seven assessment dimensions about the accuracy of grammar use included: (1) "Tense"—focusing on the use of simple past, past continuous, present perfect, and future tenses; (2) "Subject-Verb Agreement"—about the difference between singular versus plural forms; (3) "Use of Adjectives and Adverbs"—focusing on the use of "-ing" versus "-ed" adjectives and the use of temporal adverbs such as "always", "sometimes", "seldom"; (4) "Use of Pronouns"—focusing on the use of personal pronouns "I / he / she / they" and possessive determiners "my / his / her / their"; (5) "Question formation"—about the use of *wh*-words, with a focus on "who", "whom" and "why"; (6) "Spelling"—focusing on spelling words correctly; and (7) "Punctuation"—focusing on using punctuation marks correctly and starting sentences with capital letters. The two assessment dimensions about the appropriateness of language expression included "Clarity"—about the appropriate use of verb, preposition, article; and "Presentation"—about the appropriate use of conjunctions, paragraphing, spacing, etc. The students were encouraged to try to start the peer-assessment process with the assessment dimension that they felt easiest to tackle first, and subsequently to look into the other eight assessment dimensions when peer-assessing writing compositions.

Second, a sub-group was created on the Edmodo platform for each to-be-peer-assessed

writing composition (see Figure 3.2 for an example). The Edmodo peer-assessment sub-groups were named in line with the composition code respectively assigned for anonymizing author identity. A group post was created in each Edmodo sub-group for the double-blind peer-assessment task by two peer-assessors. Each peer-assessment group post included a brief instruction for completing the peer-assessment task, and the corresponding two-section peer-assessment file. The two peer-assessors were asked to complete the peer-assessment task in two steps: (1) peer-assessing the writing composition in the first section of the attached peer-assessment file; and (2) filling in the peer-assessment form in the second section of the attached peer-assessment file. As defaulted by Edmodo, each student could identify the other peer-assessor in the same sub-group, and mutually access the peer-assessment forms in the same sub-group. The two peer-assessors in each sub-group were encouraged to discuss their opinions in the peer-assessment tasks via Edmodo when needed.

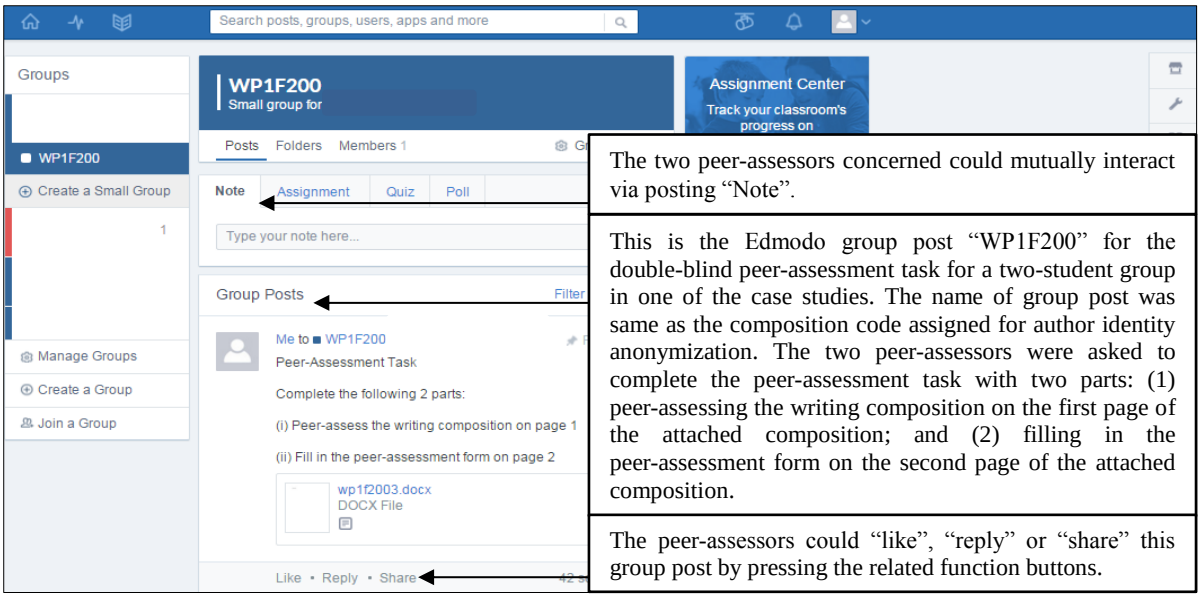

Figure 3.2. A sample Edmodo group post for the technology-supported peer-assessment task under the designed technology-mediated pedagogy.

Third, each writing composition was assigned to two peer-assessors. In this study, the length of writing compositions was taken as the criterion for assessor-assignment. The rationale behind was that one assessor produced the writing composition in the length compatible with the assessee's; and the other assessor produced the writing composition in the length far from the assessee's. This arrangement intended to allow each student to receive peer feedback with diversity due to the difference in assessors' English writing proficiency, in turn critically think of possible revisions based on the peer feedback collected.

After completing the peer-assessment task, the peer-assessors returned each of the assigned two-section peer-assessment files to the instructor (i.e., the thesis author) by replying to the corresponding Edmodo peer-assessment group post.

3.1.2.2 Component 2: Teacher-led Whole-class Discussion about Typical Writing Issues

The second component of the designed pedagogy was a teacher-led whole-class discussion about typical writing issues. The whole class of students joined a teacher-led discussion about a number of typical writing issues in the writing compositions.

This component required the preparatory work involving two main steps. First, the instructor (i.e., the thesis author) read through all the primary writing compositions in each of the writing units for identifying students' common errors and extracting several typical examples in the nine assessment dimensions covered by the peer-assessment form. Second, the instructor led the whole-class discussion through the steps of showing several sentences with the occurrence of common errors; inviting the whole class to spot out language errors; selecting students to suggest possible revisions and attempt to provide explanations; showing suggested revisions and explained the knowledge points behind; and finally summarizing the overall areas of concern for the self-editing task.

3.1.2.3 Component 3: Students' Individual Self-editing of Their Own Writings

The third component of the designed pedagogy was students' technology-supported self-editing task. Each student individually worked on the feedback from the two classmates for the self-editing of English writing compositions. Each student received two files with feedback from the two peer-assessors, respectively, in this regard. For the classroom arrangement of the technology-supported self-editing tasks in this study, the preparatory work

involved two main steps.

First, each of the two-section peer-assessment files was collected via Edmodo, and then systematically renamed according to the class number of the particular students for peer-assessees' easy reference. Second, the thesis author distributed the related two peer-assessment files to each of the peer-assessees via Edmodo after files collation. A sub-group was created on the Edmodo platform for each to-be-edited writing composition (see Figure 3.3 for an example). A group post was created in each Edmodo sub-group for the self-editing task by individual peer-assessee. Each self-editing group post included a brief instruction for completing the self-editing task, the corresponding two peer-assessment files, and the to-be-edited writing composition. Each peer-assessee was asked to complete the self-editing task with three attached files by (1) referring to the peer-assessment file from the first peer-assessor; (2) referring to the peer-assessment file from the second peer-assessor; and (3) revising the self-editing file for the final version of the writing composition. The students were asked to first read through the two peer-assessment files, and then check the ratings and comments given by their peers, and further think of the peer feedback for possible actions in self-editing.

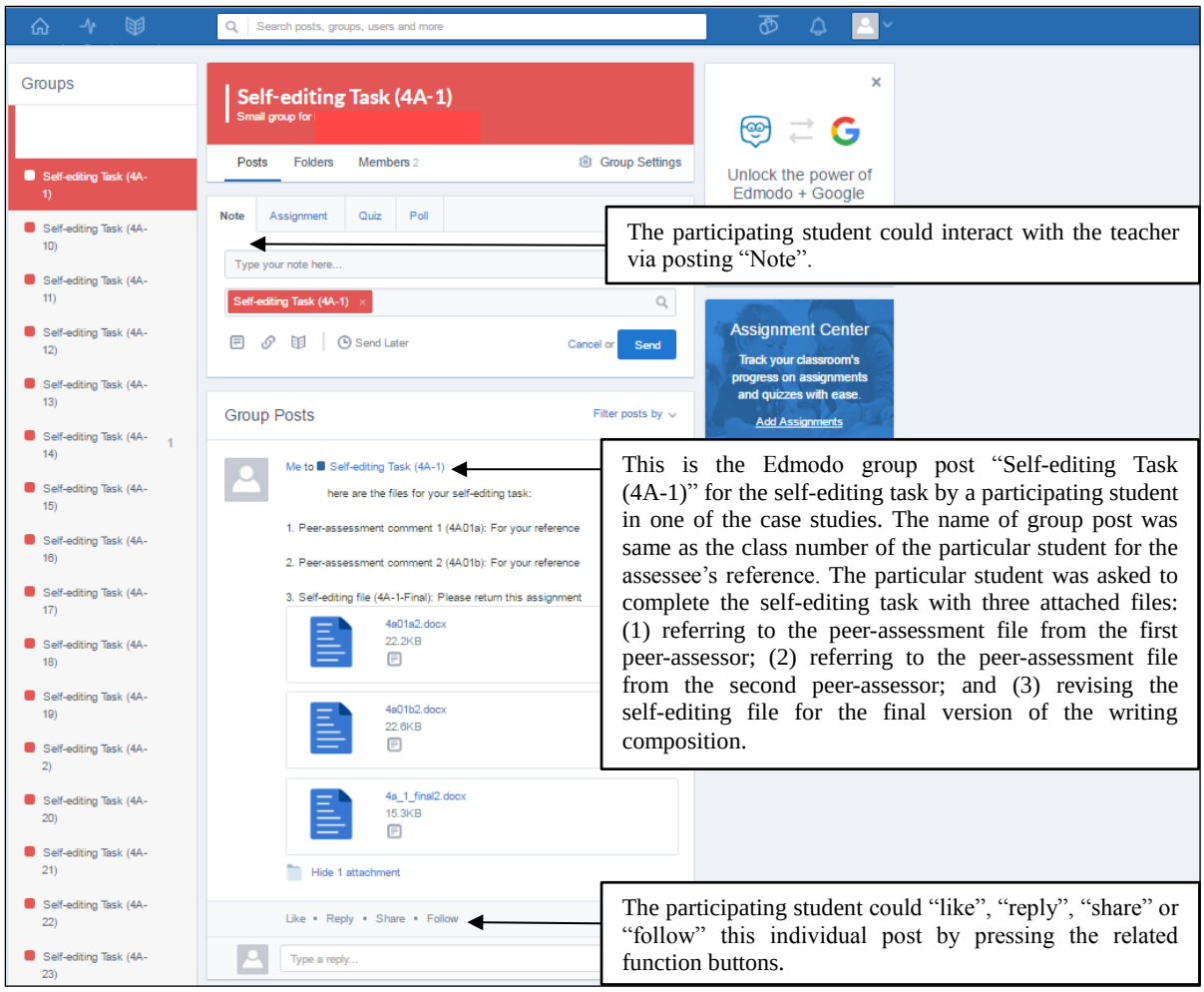

Figure 3.3. A sample Edmodo group post for the technology-supported self-editing task under the designed technology-mediated pedagogy.

After completing the self-editing task, each peer-assessee returned the self-edited file to the instructor (i.e., the thesis author) by replying to the corresponding Edmodo self-editing group post.

3.2 The Trial of the Technology-Mediated Pedagogy: The Multiple Case Study

The approach of multiple case study was adopted for the empirical investigation in this study for the trial of the designed technology-mediated pedagogy in ESL/EFL classrooms at senior grades in elementary schools in Hong Kong.

A case study is a research using multiple methods of data collection and analysis for an thorough investigation of the processes and outcomes of a specific phenomenon or issue. The replication of a single case study, in a manner that the separate case studies follow each other in different contexts, engenders a multiple case study with a sequential design (Creswell, 2015; Yin, 2003, 2009). A multiple case study incorporates a collection of single case studies for a holistic investigation into a specific phenomenon or issue on both within-case and across-case bases (Baxter & Jack, 2008; Stake, 2006; Yin, 2003). The value of a multiple case study lies in its richness, rather than in its width, of the holistic data collected for researchers to compare similarities and differences between the constituting single case studies for predicting similar or contrasting results across cases based on a theory (Baxter & Jack, 2008; Yin, 2003, 2009). The data triangulation and result assertion across cases in the multiple case study is more powerful than a single case study to give an extensive description of the phenomena or issues under investigation, so as to reach an evidence-informed generalization and assertive advocacy accordingly (Chmiliar, 2010; Stake, 2006; Yin, 2003).

In this study, a multiple case study incorporating three case studies was conducted for an empirical research which adopted both quantitative and qualitative methods to investigate the process and effectiveness of the technology-mediated pedagogy designed. Table 3.1 summarizes the background information of the participating students and the trial teaching in the ESL/EFL writing units across the three case studies.

Table 3.1. The background information of the participating students and the trial teaching in the ESL/EFL writing units across the three case studies in this study.

	Case Study 1 (CMI Grade 4 ; N = 25)	**Case Study 2 (CMI Grade 4 ; N = 28)**	**Case Study 3 (EMI Grade 5 ; N = 17)**
The Student Profile of the Multiple Case Study			
Medium of instruction	Chinese (CMI)	Chinese (CMI)	English (EMI)
Grade	Mid of Grade 4 learning	End of Grade 4 learning	Start of Grade 5 learning
Number of students	25	28	17
Age range	8.5 to 10.5	8.5 to 10.5	9 to 11
Average age	9.44	9.36	9.88
Gender (Male : Female)	12 M : 13 F	13 M : 15 F	17 F
Prior experience in peer-assessment	No for 88% of the students	No for 54% of the students	No for 24% of the students
Prior experience in self-editing	No for 88% of the students	No for 64% of the students	No for 18% of the students
Prior experience in using Edmodo	Yes for all students	No for all students	No for all students
Prior experience in using MS Word Processor	Yes for all students	Yes for all students	Yes for all students
Prior experience in using MS Word Processor for peer-assessment task	No for 92% of the students	No for 79% of the students	No for 29% of the students
Prior experience in using MS Word Processor for self-editing task	No for 92% of the students	No for 71% of the students	No for 29% of the students
The Trial Teaching in the Multiple Case Study			
Trial teaching period	10 sessions [300 min (5 hr)]	7 sessions [280 min (4 hr 40 min)]	5 sessions (with 2 rounds of 3-day online assignment) [175 min (2 hr 55 min)]
Theme of writing unit	Creative writing: A story about a sick princess (in 70 words or more)	Creative writing: Rewriting the story of "The Frog Prince" (in 60 words or more)	Report writing: Olympics (mascots, meaning of torch, logo, history, sports event etc.) (in about 100 words)
Provision of digital devices	1-student-to-1-computer (Using own tablet in school general classroom)	1-student-to-1-computer (Using desktop computer in school computer room)	1-student-to-1-computer (Using desktop computer in school computer room)
Daily learning use of Edmodo	Within 2 hours on average	Within 2 hours on average	Within 2 hours on average
Daily learning use of MS Word Processor	Within 2 hours on average	Within 2 hours on average	Within 2 hours on average
Average time for a peer-assessment task	Within 15 minutes for 64% of the students	Within 15 minutes for 75% of the students	Within 15 minutes for 59% of the students
Average time for a self-editing task	Within 15 minutes for 80% of the students	Within 15 minutes for 79% of the students	Within 15 minutes for 68% of the students
Functions of MS Word Processor used mostly	Highlighter (68%) Change of text color // Cut, Copy & Paste (60%) Changes-tracker (56%)	Changes-tracker (93%) Change of text color (57%) Highlighter (54%)	Highlighter (76%) Change of text color // Cut, Copy & Paste // Spelling-check (59%)

3.2.1 The Student Profile of the Multiple Case Study

This study invited two Chinese-medium (CMI) co-educational schools and one English-medium (EMI) girls school, by purposive sampling (Creswell, 2015; Fraenkel et al., 2015; McMillan & Schumacher, 2010), as the partner schools of the multiple case study which incorporated three case studies for the trial of the designed technology-mediated pedagogy (see Table 3.1). All of these three partner schools met three selection criteria set for the purposive sampling for this study, of which had (1) rich experience in ICT in education, such as e-Learning experience in recent three years; (2) at least one Grade 4 or Grade 5 class with around 20 to 30 students who have similar learning ability; and (3) existing practice in the classroom use of ICT for ESL/EFL curriculum delivery.

Each partner school was invited to arrange one round of writing unit for a case study. A class of Grade 4 or Grade 5 ESL/EFL students, of each consisted of around 20 to 30 students, was purposefully invited from each of the three partner schools for the respective case study. There were a total of 70 students in the age of 9.59 on average, with 53 from two Grade 4 classes and 17 from one Grade 5 class, participated in the multiple case study. This gave the data pool of 70 sets of English writing compositions as the primary writing compositions for the writing units across the three case studies.

The participating students across the three case studies had different levels of prior experience in the pedagogical arrangements and technological use targeted in the designed

technology-mediated pedagogy. Concerning the pedagogical arrangements of peer-assessment and self-editing in ESL/EFL writing curriculum, the majority of the participating students in Case Study 1 (nearly 90%) and Case Study 2 (more than half) found these two pedagogical arrangements new in normal ESL/EFL writing lessons; whereas those in Case Study 3 (over three quarters) already had such prior experience.

Regarding the technological use of Edmodo, all the participating students in Case Study 1 had experience in using Edmodo for learning, mainly for classroom logistic purposes yet not for subject discussion activities, before the trial teaching; whereas those in Case Study 2 and Case Study 3 had none. As for the technological use of MS Word Processor, all the participating students across three case studies had prior experience in using MS Word Processor for learning. The participating students from the three different partner schools had different levels of prior experience in the use of MS Word Processor for peer-assessment and self-editing tasks in ESL/EFL writing curriculum. In Case Study 1, more than 90% of the participating students had no prior experience in this aspect. In Case Study 2, more than 70% of the participating students were in this situation. In Case Study 3, only less than 30% of the participating students were in this situation.

These three case studies therefore could afford rich insights into a spectrum of scenarios for the implementation of the designed technology-mediated pedagogy in diverse ESL/EFL classroom settings, ranging from schools using different media of instruction in non-English

subject delivery (i.e., CMI for Case Study 1 and Case Study 2 versus EMI for Case Study 3); students having different prior experience in the technology use concerned (e.g., the prior Edmodo usage experience among students in Case Study 1 but not in Case Study 2 and Case Study 3); and students having different prior experience in pedagogical arrangements in ESL/EFL classrooms (e.g., the more peer-assessment and self-editing experience among students in Case Study 3 but less in Case Study 1 and Case Study 2).

3.2.2 The Trial Teaching in the Multiple Case Study

As shown in Table 3.1, the trial teaching in the three case studies ranged from 5 to 10 sessions, with Case Study 1 lasted for 5 hours; Case Study 2 lasted for 4 hours and 40 minutes; and Case Study 3 lasted for 2 hours and 55 minutes plus 2 rounds of 3-day online assignments. The writing unit in the first two case studies focused on creative writing, with Case Study 1 in the theme of writing a story about a sick princess in 70 words or more; while Case Study 2 in the theme of rewriting the story of “The Frog Prince” in 60 words or more. In Case Study 3, the writing unit focused on report writing in the theme of Olympics in about 100 words. One-student-to-one-computer setting was implemented in the trial teaching across the three case studies. In Case Study 1, each participating student used his/her own tablet PC in the designated general classroom during the trial teaching period. In Case Study 2 and Case Study 3, each participating student used the assigned desktop computer in the school computer rooms for the trial teaching.

The three-component flow of the designed technology-mediated pedagogy was consistently implemented in the three respective writing units in three case studies. The students in each participating class were exposed to the review-discuss-edit process in ESL/EFL writing under the designed pedagogy in the task sequence of (1) peer-assessing two classmates' writing compositions on their own in the double-blind manner; (2) discussing the typical writing issues for re-thinking common writing errors in the writing units at the whole-class level; and (3) self-editing their own writing compositions on their own by taking feedback from two peer-assessors into consideration. The instructor's preparatory work and the in-class implementation flow in each case study strictly followed the relevant procedures as described in sub-section 3.1.2 of this chapter.

Three measures were adopted in each case study to promote students to take peer-assessment and self-editing seriously. Firstly, in the peer-assessment training session, the instructor (i.e., the thesis author) provided students with a comprehensive set of samples on feedback variations, in order to illustrate the expected inputs in peer-assessment tasks. Secondly, right before the peer-assessment tasks, the instructor encouraged students to provide writing feedback as much as they could for the goodness of peer learning; and reminded students to make reference to the samples introduced in the peer-assessment training session when needed. Thirdly, right before the self-editing tasks, the instructor encouraged students to read thoroughly and think critically the writing feedback given by

their peers for an insight into the possible suggestion-incorporation and/or revision-planning in the self-edited writing compositions when needed.

All the participating students across three case studies reported that, in the trial teaching period, they used Edmodo and MS Word Processor for learning within two hours every day on average. For completing a peer-assessment task, more than half of the participating students in each case study (64% in Case Study 1; 75% in Case Study 2 and 59% in Case Study 3) reported that they made it within 15 minutes on average. For completing a self-editing task, the average time for the participating students across the three case studies was also within 15 minutes (80% in Case Study 1; 79% in Case Study 2 and 68% in Case Study 3). The functions of highlighter and changing text color of MS Word Processor were commonly reported by the participating students across the three case studies to be most frequently used in their writing units.

3.2.3 The Ethical Concerns in the Multiple Case Study

This study involved Grade 4 and Grade 5 students aged from 8.5 to 11 in three elementary schools, who were research participants aged below 18 and so unable to give informed consent. A consent form and an information sheet tailored for this study were distributed to all of the three partner schools as well as all participating students and their parents to obtain consent from the schools and parents concerned prior to the start of the study.

The thesis author discussed with experts in the related research fields to identify possible risks and corresponding precautions related to this study prior to the start of investigation work. The partner schools, the participating students and their parents were fully informed that there was no risk identified in this study, as the pedagogy under investigation was designed to meet the teaching flow common in ESL/EFL writing curriculum in local elementary schools; and the collection of data was planned to be arranged to meet the on-campus learning schedule of the targeted students.

Without consent of the individuals, any data that might lead to disclosure of identity of any individual person was avoided in the preparation of research reporting documents. Safeguards were carried out to preserve anonymity of the participants in all research activities in this study. The names of individuals were not included in the written records of the research activities in this study to ensure confidentiality of research data. For example, codes such as "S1" were used in the research reporting documents to refer to individual students when presenting the research data from the content analyses of students' artifacts, the questionnaire survey and the focus group discussions in each partner school.

3.3 The Evaluation of the Technology-Mediated Pedagogy: The Research Methods

For each of the three case studies in the multiple case study, a mixed-method evaluation was conducted for the empirical evidence in response to the four targeted research questions:

(i) What are the achievements of elementary ESL/EFL students in grammar accuracy and

language expression in ESL/EFL writing tasks with the process of peer-assessment and self-editing using social learning platform and word processing productivity tool?

(ii) What are the characteristics of feedback provision among elementary ESL/EFL students in the process of peer-assessment when using social learning platform in ESL/EFL writing tasks?

(iii) What are the characteristics of writing revisions among elementary ESL/EFL students in the process of self-editing when using word processing productivity tool in ESL/EFL writing tasks?

(iv) What are the perceptions of elementary ESL/EFL students toward the use of social learning platform and word processing productivity tool for supporting peer-assessment and self-editing in ESL/EFL writing tasks?

As summarized in Table 3.2, a combination of quantitative and qualitative methods were used in this study for collecting and analyzing empirical data to understand how the designed technology-mediated pedagogy influenced the achievements, processes and perceptions of students on enhancing their competence in English writing with accurate grammar use and appropriate language expression.

Table 3.2. The methods of data collection across the three case studies in this study.

Data collection items	Data collection methods	Number of times
Students' achievement in the accuracy of grammar use and the appropriateness of language expression	Collection of writing compositions of all students in each writing unit for writing performance scoring	***1 time*** *per case study. The total was:* - 70 to-be-peer-assessed compositions - 70 self-edited compositions
	Collection of writing compositions of all students in each writing unit for syntactic maturity measurement	***1 time*** *per case study. The total was:* - 70 to-be-peer-assessed compositions - 70 self-edited compositions
Students' characteristics of feedback provision (in the process of peer-assessment via the selected social learning platform)	Capturing of online student artifacts (completed peer-assessment files on the selected social learning platform) in each writing unit via the selected social learning platform	***All student artifacts*** *per case study. The total was:* - 140 peer-assessed compositions (with 1,095 feedback items)
Students' characteristics of writing revisions (in the process of self-editing via the selected word processing productivity tool)	Capturing of student artifacts (final revision-tracked writing files on the selected word processing productivity tool) in each writing unit via the selected word processing productivity tool	***All student artifacts*** *per case study. The total was:* - 70 self-edited compositions (with 359 revision items)
Students' perceptions of the technology-mediated pedagogy	Questionnaire survey (for self-perception of the implementation and impact of the designed pedagogy)	***1 time*** *per case study. The total was:* - 70 survey questionnaires
	Focus group discussion (with two groups of six selected students per case study)	***1 time*** *per case study. The total was:* - 6 rounds of focus group discussions (2 rounds x 3 case studies)

3.3.1 Identifying Students' Achievements under the Technology-mediated Pedagogy

For identifying students' achievement in the accuracy of grammar use and the appropriateness of language expression in English writing under the designed pedagogy, a content analysis of student artifacts (Fraenkel, Wallen, & Hyun, 2015; Franzosi, 2008; Krippendorff, 2013) was conducted with all students at the end of the writing unit in each of the three case studies. A total of 140 pieces of writing products were collected before (i.e., 70 pieces of students' to-be-peer-assessed writing compositions) and after (i.e., 70 pieces of students' self-edited writing compositions) the respective writing units in the three case studies for content analysis with two emphases: the accuracy of English grammar usage and the appropriateness of language expression. The content analysis consisted of two parts:

evaluation of writing compositions with scoring rubric, and measurement of syntactic maturity of writing compositions.

3.3.1.1 Evaluation of Writing Compositions with Scoring Rubric

In the first part of content analysis, the writing compositions were evaluated with the use of the well-established scoring rubric developed by Tompkins (2010, 2012). It aimed to quantify the ESL/EFL writing performance of each student in four areas, of which the first two areas focused on grammar accuracy; while the other two focused on language expression. The first scoring area "Grammar use" concerned the accuracy of grammar use in English writing. Examples of students' mastery of this aspect include adding inflectional endings to words; combining words to form compound words; adding prefixes and suffixes to root words; combining sentences for writing simple, compound, and complex sentences, etc. The second scoring area "Spelling and punctuation" concerned the correctness of spelling and punctuation in English writing. Examples of students' mastery of this aspect include using words, especially homonyms, with correct spelling; indicating dialogs with quotation marks; using capitalization and punctuation to indicate beginnings and ends of sentences, etc. The third scoring area "Word choice" concerned the choice of vocabulary in English writing, and so with the focus on the lexical level. Students' mastery of this aspect, for example, includes the capability to distinguish synonyms and antonyms; select suitable words of which have multiple meanings, etc. The fourth scoring area "Sentence fluency" concerned the variety of

phrasal- and/or sentential-patterns in English writing, and so with the focus on the sentential level. Students' mastery of this aspect, for instance, includes the capability to use appropriate conjunctions to logically combine sentences without sentence fragments and run-on sentences, etc. This scoring rubric was selected for the reason that its area coverage and usage appropriateness were highly validated by many ESL/EFL writing research studies, such as Lo and Hyland (2007), Woo, Chu, and Li (2013), and Woo, Chu, Ho, and Li (2011).

A six-level scoring rubric was developed for the evaluation of students' writing compositions (see Appendix B). Each writing composition was scored by two raters who were familiar with the above scoring rubric. The thesis author served as one of the raters; while the other rater was an in-service English Language subject teacher who had a six-year experience, at the time of this study, in teaching ESL/EFL writing for senior grades in a CMI elementary school in Hong Kong. The raters first individually assigned a score, ranging from "0" ("Absence of this component") to "5" ("Excellent"), in terms of each of the four scoring areas according to the rubric in Appendix B. They then discussed discrepancies in their scoring results in order to reach a consensus on the final scores that were assigned differently (see Table 3.3). The Cronbach's alpha reliability coefficients for the inter-rater reliability of the scoring exercise, from the overall perspective, across the three case studies ranged from 0.88 to 0.96 (see Table 3.4).

Table 3.3. Example of consensus-reaching discussion for addressing discrepancies between the two raters in scoring students' writing compositions.

Example of scoring the area of "Grammar use"	
Text analyzed	*Once upon a time, there was an unhappy king. The unhappy king his daughter is ill the king is very worried she. The doctor said: "We can't help you, king your daughter is very ill" "I know who can come to help you." Said king's friends "Who? Who? Who? Who come to help my princess gote better" Then, they all doctors are gong home. A few hours late, the room came a young and smart prince, he said "I cant* (Word counts = 80)
Scoring results	• Rater 1: Score "3" (Average) • Rater 2: Score "2" (Below average)
Final consensus	The version of Rater 1 was adopted because more than a quarter yet less than half of the text had grammatical errors.

Table 3.4. The inter-rater reliability of the scoring exercise on students' writing compositions across the three case studies.

	Max. score	Cronbach's alpha reliability	
		For to-be-peer-assessed compositions	For self-edited compositions
Case Study 1 [25 compositions]			
(A) Grammar Accuracy			
(A-1) Grammar use	5	0.92	1.00
(A-2) Spelling and punctuation	5	0.96	0.96
(B) Language Expression			
(B-1) Word choice	5	0.88	1.00
(B-2) Sentence fluency	5	0.80	0.80
Overall	**20**	**0.89**	**0.94**
Case Study 2 [28 compositions]			
(A) Grammar Accuracy			
(A-1) Grammar use	5	0.89	0.86
(A-2) Spelling and punctuation	5	0.93	0.86
(B) Language Expression			
(B-1) Word choice	5	0.93	0.96
(B-2) Sentence fluency	5	0.93	0.82
Overall	**20**	**0.92**	**0.88**
Case Study 3 [17 compositions]			
(A) Grammar Accuracy			
(A-1) Grammar use	5	0.94	0.94
(A-2) Spelling and punctuation	5	1.00	1.00
(B) Language Expression			
(B-1) Word choice	5	1.00	1.00
(B-2) Sentence fluency	5	0.88	0.88
Overall	**20**	**0.96**	**0.96**

This part of content analysis gave a writing performance score for each of the 70 pieces of to-be-peer-assessed writing compositions before the writing units, as well as for each of the 70 pieces of self-edited writing compositions after the writing units. Statistical analyses were conducted for comparing scores before and after the respective writing unit in each of the three case studies. The detailed results will be reported and discussed in the corresponding sections in Chapter 4 to Chapter 6 in relation to the three case studies,

respectively.

3.3.1.2 Measurement of Syntactic Maturity of Writing Compositions

In the second part of content analysis, the syntactic maturity of writing compositions was measured through the long-standing and typical methods of comparing the counts of syntactic units and the ratios of syntactic measurements of students' writing compositions before and after the trial teaching. The counting work and ratio calculation in this content analysis was conducted in line with the common practice established by Hunt (1965, 1970) and widely adopted in the related research fields, including the recent work by Coniam and Wong (2004), Johansson and Geisler (2011), Mak and Coniam (2008), Ortega (2003) and Storch (2005). This content analysis in turn focused on four units of analysis—words, clauses, T-units, and sentences—in the syntactic measurement of students' integrated competence in grammar accuracy and language expression in writing tasks. Table 3.5 illustrates these four syntactic units for the purposes of this study. Two procedures were done in this content analysis, namely, counting syntactic units and calculating ratios of syntactic measurements of students' writing compositions.

For the first procedure, the counting of syntactic units involved two actions on each writing composition. The first action was using the word-counts function of MS Word Processor to count the total number of words. This was straightforward with perfect accuracy. The second action was arranging the two raters mentioned in the previous sub-section to

count the total number of clauses, T-units, and sentences. The two raters individually counted the number of clauses, T-units, and sentences in each of the 140 pieces of writing products collected before and after the writing units across the three case studies, in line with the practice adopted by the early studies abovementioned. After this, the two raters discussed differences in their counting results in order to reach a consensus on the final results that were differently classified (see Table 3.5). The Cronbach's alpha reliability coefficients for the inter-rater reliability of the counting process in the syntactic measurement across the three case studies ranged from 0.88 to 0.93 (see Table 3.6).

Table 3.5. Example of the process of counting syntactic units in students' writing compositions in this study.

Rubrics for counting the syntactic units *(adapted from Hunt, 1965, 1970)*	
Counting done by MS Word Processor	● Word: A single unit of language that has meaning and can be written.
Counting done by two raters	● Clause: A syntactic unit contains a subject or coordinated subjects and a finite predicate or coordinated predicate. ● T-unit: An intermediary structure between the clause and the sentence, which is minimal terminable, as coined by Hunt (1965, 1970) with the definitions below - "One main clause plus any subordinate clause or nonclausal structure that is attached to or embedded in it". (1970, p. 4) "The shortest possible unit that is grammatically allowable to punctuate as a sentence". (1970, p. 4) ● Sentence: A syntactic unit starts with a capital letter and ends with a period or other terminal mark.
Example	My aunt said she would go to Japan for a week in the coming month and my uncle would take a lot of photos for her. *(Word: 26 ; Clause: 3 ; T-unit: 2 ; Sentence: 1)*
Example of counting the syntactic units in this study	
Text analyzed	*A beautiful princess was bored, and went to the garden and the pond.* (Word counts = 13)
Counting results	● Rater 1 - Clause: 2 ; T-unit: 1 ; Sentence: 1 ● Rater 2 - Clause: 1 ; T-unit: 1 ; Sentence: 1
Final consensus	The version of Rater 2 was adopted because the syntactic entity after the comma per se was part of the finite set of coordinated verbs in the sentence.

Table 3.6. The inter-rater reliability of the counting process in the syntactic measurement of students' writing compositions across the three case studies.

	No. of compositions	**Cronbach's alpha reliability**	
		For to-be-peer-assessed compositions	**For self-edited compositions**
Case Study 1	50 (=25 x 2)	0.88	0.90
Case Study 2	56 (=28 x 2)	0.90	0.92
Case Study 3	34 (=17 x 2)	0.91	0.93

For the second procedure, the calculation of ratios of syntactic measurements focused on two useful ratios coined by Hunt (1965, 1970), which are empirically recognized as reliable

for measuring the syntactic maturity of young students at the early grades in school education (Hunt, 1965, 1970; Johansson & Geisler, 2011; Ortega, 2003). The first ratio is mean clauses per T-unit (i.e., subordinate clause index - SCI), which reflects the average frequency that a subordinate clause is added to a main clause in a sentence. The second ratio is mean T-units per sentence (i.e., main clause coordination index- MCCI), which reflects the average frequency that other T-units are added to the first one in each sentence. An increase in the values of these ratios indicates an increase in the complexity of sentence structures in a piece of writing composition; and so signifies a kind of grammatical development and thus an increase in the syntactic maturity of the student (Coniam & Wong, 2004; Johansson & Geisler, 2011; Mak & Coniam, 2008; Ortega, 2003; Storch, 2005).

The two-procedure content analysis gave two kinds of syntactic measures—(1) the mean number of words, clauses, T-units, and sentences in each piece of writing composition; and then (2) the ratios of mean clauses per T-unit and mean T-units per sentence in each case study—before and after the trial teaching for comparison. Such comparison set to look into whether students across the three case studies made significant syntactic progress after the respective writing units. The detailed results will be reported and discussed in the corresponding sections in Chapter 4 to Chapter 6 in relation to the three case studies, respectively.

3.3.2 Identifying the Characteristics of Students' Peer-assessment Feedback Provision

Another content analysis of student artifacts was conducted to identify the characteristics of students' feedback provision in the process of peer-assessment via the social learning platform Edmodo. The student artifacts (i.e., the two-section peer-assessment files) completed and returned by each student via the Edmodo platform in each writing unit, respectively, were collected and analyzed. As there were two writing compositions assigned for each of the 70 students in the three case studies for peer-assessment, this content analysis had a total of 140 pieces of students' peer-assessed compositions for locating students' peer-assessment feedback items.

Every peer-assessment feedback item made in each peer-assessed composition was tracked and recorded by using the changes-tracker function of MS Word Processor to compare the peer-assessed composition with the corresponding primary writing composition. There were a total of 1,095 feedback items identified among all of the 140 pieces of students' peer-assessed compositions. The identified peer-assessment feedback items were then contextualized by a two-focus classification step, which adopted a taxonomy of writing comments based on the established instruments originated from Liu and Sadler (2003) and further adapted by the studies in the related research fields such as AbuSeileek and Abualsha'r (2014), Chang (2012), Lee (2011) and Woo et al. (2013).

The first focus of the classification step was the type of peer-assessment feedback items.

It concerned how a specific peer-assessment feedback item was provided. There were four categories with respect to the type of peer-assessment feedback items, namely, (1) evaluations which commented on certain features of the peer-assessed compositions with a performance remark; (2) clarifications which asked the peer-assessees for explanations and justifications of certain writing issues in the peer-assessed compositions; (3) suggestions which marked the areas of concern and/or the directions for changes for peer-assessees to make further revision; and (4) alterations which directly provided specific changes on certain writing issues in the peer-assessed compositions for peer-assessees' consideration.

The second focus of the classification step was the depth of peer-assessment feedback items. It concerned why a specific peer-assessment feedback item was provided. There were two categories with regard to the depth of peer-assessment feedback items. The first category was surface copy-editing feedback for enhancing the accuracy of grammar, spelling and punctuation used in English writing (i.e., the three sub-categories "Grammar", "Spelling" and "Punctuation" of feedback items, in association with the scoring areas "Accuracy of grammar" and "Spelling and punctuation" described in sub-section 3.3.1.1). The second category was content meaning enhancement feedback for enhancing idea presentation and text organization (i.e., the two sub-categories "Idea presentation" and "Text organization" of feedback items, in association with the scoring areas "Word choice" and "Sentence fluency" described in sub-section 3.3.1.1).

The two raters mentioned in the previous sub-section continued to be the raters in the two-focus classification step in this content analysis. They individually classified the peer-assessment feedback items into the four categories regarding the type of peer-assessment feedback items, and then further into the two categories regarding the depth of peer-assessment feedback items. Afterward, they discussed differences in their classification results in order to reach a consensus on the final classification of peer-assessment feedback items that were differently classified (see Table 3.7). The Cronbach's alpha reliability coefficients for the inter-rater reliability of the classification of students' peer-assessment feedback items across the three case studies ranged from 0.94 to 0.98 (see Table 3.8).

Table 3.7. Example of consensus-reaching discussion for addressing discrepancies between the two raters in classifying students' peer-assessment feedback items.

Example of classifying a peer-assessment feedback item	
Text analyzed	*The torch relay has started ~~started~~ from 1920 till now.*
Classification results	Rater 1: • 2 alterations (1) Surface copy-editing feedback > Grammar (2) Content meaning enhancement > Idea presentation Rater 2: • 1 alteration (1) Surface copy-editing feedback > Grammar
Final consensus	The version of Rater 1 was adopted because the feedback item included not only the verb form change related to tense use (i.e., "Grammar"); but also the addition of a prepositional phrase for a content enrichment to emphasize the existence of the practice "torch relay" at the time of writing.

Table 3.8. The inter-rater reliability of the classification of students' peer-assessment feedback items across the three case studies.

	No. of compositions	Cronbach's alpha reliability	
		For classifying the depth of feedback items	For classifying the type of feedback items
Case Study 1	50 (=25 x 2)	0.94	0.94
Case Study 2	56 (=28 x 2)	0.96	0.94
Case Study 3	34 (=17 x 2)	0.98	0.98

The number of occurrence of peer-assessment feedback items in different categories was counted for further statistical analysis. The detailed results will be reported and discussed in the corresponding sections in Chapter 4 to Chapter 6 in relation to the three case studies, respectively.

3.3.3 Identifying the Characteristics of Students' Self-editing Revision-making

Another content analysis of student artifacts was conducted to identify the characteristics of students' writing revisions in the process of self-editing via the selected word processing productivity tool MS Word Processor. The student artifacts (i.e., the final self-edited composition files in the MS Word format) completed and returned by each student via the Edmodo platform in each writing unit, respectively, were collected and analyzed. This gave a total of 70 pieces of students' self-edited compositions across three case studies for locating students' self-editing revision items.

Every self-editing revision item made in each self-edited composition was tracked and recorded by using the changes-tracker function of MS Word Processor to compare the self-edited composition with the corresponding primary writing composition. There were a

total of 359 revision items identified among all of the 70 pieces of students' self-edited compositions. The identified self-editing revision items were then contextualized by a two-category classification framework tailored for elementary school students, which adopted a revision taxonomy building on the established instruments originated from Faigley and Witte (1981) and further adapted by studies in the related research fields such as Jones (2008), Lee (2011), Mak and Coniam (2008) and Woo et al. (2011).

The first category concerned in the classification step was form-edits. It focused on changes involving conventional copy-editing operations, such as those in spelling, grammar, abbreviations, punctuation, and format. There were three sub-categories with regard to the writing revisions in the nature of form-edits: (1) "Grammar"—the changes attempting to correct grammatical errors; (2) "Spelling"—the changes attempting to correct misspelled words, and (3) "Punctuation"—the changes attempting to correct improper use of punctuation marks in English writing (in association with the scoring areas "Accuracy of grammar" and "Spelling and punctuation" described in sub-section 3.3.1.1).

The second category concerned in the classification step was content-edits. It focused on syntactical or lexical changes for improving the idea presentation and text organization in the writings, without altering the original concepts in the text. There were four sub-categories with regard to the writing revisions in the nature of content-edits: (1) "Additions"—adding words, phrases, sentences and/or paragraph for an attempt to improve the presentation and

clarity of the text; (2) “Substitutions”—replacing words, phrases, sentences and/or paragraph for an attempt to improve the presentation and clarity of the text; (3) “Deletions”—deleting words, phrases, sentences and/or paragraph for an attempt to improve the presentation and clarity of the text; and (4) “Rearrangements”—moving words, phrases, sentences and/or paragraph in an attempt to improve the presentation and clarity of the text (in association with the scoring areas “Word choice” and “Sentence fluency” described in sub-section 3.3.1.1).

The two raters mentioned in the previous sub-sections continued to be the raters in this content analysis. They individually classified the self-editing revision items into appropriate categories; and then discussed differences in their classification results in order to reach a consensus on the final classification of revision items that were differently classified (see Table 3.9). The Cronbach’s alpha reliability coefficients for the inter-rater reliability of the classification of students’ self-editing revision items were 0.92 for Case Study 1 (with 25 compositions); 0.89 for Case Study 2 (with 28 compositions); and 0.90 for Case Study 3 (with 17 compositions).

Table 3.9. Example of consensus-reaching discussion for addressing discrepancies between the two raters in classifying students' self-editing revision items.

Example of classifying a self-editing revision item	
Text analyzed	*Let me try~~. I can~~ to help your princess.*
Classification results	Rater 1: • 2 revision items (1) 1 content-edit of "Deletion" (removing "I can") (2) 1 content-edit of "Addition" (inserting "to") Rater 2: • 1 revision item (1) 1 content-edit of "Substitution" (replacing "I can" with "to")
Final consensus	The version of Rater 2 was adopted because the revision item intended to use the preposition "to" for replacing the clause "I can" for one change in combining the originally two sentences as one complex sentence for a more precise and concise presentation—the originally second sentence as a *to*-infinitive clause subordinating the originally first sentence.

The number of occurrence of self-editing revision items in different categories was counted for further statistical analysis. The detailed results will be reported and discussed in the corresponding sections in Chapter 4 to Chapter 6 in relation to the three case studies, respectively.

3.3.4 Identifying Students' Perceptions toward the Technology-mediated Pedagogy

For identifying students' perceptions of the technology-mediated pedagogy, a questionnaire survey and two rounds of focus group discussions were conducted in the end of the respective trial teaching period in each of the three case studies.

3.3.4.1 The Questionnaire Survey with All Participating Students

A questionnaire survey (Creswell, 2015; Fraenkel et al., 2015; McMillan & Schumacher,

2010) was conducted with all 70 participating students across three case studies to understand their perceptions of the implementation and impact of the designed pedagogy. The survey questionnaire was adapted from the established relevant instruments (e.g., Hazari, North, & Moreland, 2009; Shih, 2011; Xiao & Lucking, 2008) to include a total of 18 questions (see Appendix C), of which were validated by experienced researchers and in-service teachers in the related research fields for ensuring these questions to be precise, concise and comprehensible for Grade 4 and Grade 5 students.

The first 10 questions in the survey questionnaire asked about students' experience and practice in the pedagogical arrangements of peer-assessment and self-editing as well as the technological use of Edmodo and MS Word Processor for English learning before and during the designed pedagogy. Questions 11 and 12, of each consisted of nine statements in a 5-point Likert-scale, asked students to express their level of agreement on the process and impact related to the peer-assessment and self-editing tasks, respectively, in the designed pedagogy. Questions 13 and 14, of each included eight statements in a 5-point Likert-scale, asked about students' level of agreement on the process and impact related to the use of Edmodo and MS Word Processor, respectively, in the designed pedagogy. Questions 15 and 16, of each was a multiple-choice question with six options, asked students to further indicate the most useful MS Word Processor functions in the peer-assessment and self-editing tasks, respectively. Question 17 contained 13 statements in a 5-point Likert-scale to ask students to indicate their

level of agreement on the overall implementation and benefits related to the designed technology-mediated pedagogy in this study. Question 18 included three statements in a 5-point Likert-scale to ask about students' level of agreement on the provision of digital devices in the designed technology.

All 70 participating students across three case studies completed the self-administered questionnaire in around 20 minutes at the end of the respective trial teaching period to indicate their perceptions of the implementation and impact of the designed pedagogy in ESL/EFL classrooms. The students were allowed to read the questionnaire once and seek clarification if needed before doing the survey, in order to ensure their understanding of some technical terms such as "pedagogy" for the validated completion of the questionnaire. The Cronbach's alpha reliability coefficients of this questionnaire survey, for all the question items, were 0.98 in Case Study 1; 0.95 in Case Study 2; and 0.98 in Case Study 3. Descriptive statistics including the mean rating for each question item and the corresponding standard deviation of each question item were calculated. The detailed results will be reported and discussed in the corresponding sections in Chapter 4 to Chapter 6 in relation to the three case studies, respectively.

3.3.4.2 The Focus Group Discussions with Selected Student Groups

Two rounds of focus group discussions (Creswell, 2015; Fraenkel et al., 2015; McMillan & Schumacher, 2010) were conducted with students subsequent to their completion of the

questionnaire survey in each case study, for data triangulation purposes. Two groups of six students were randomly selected in each case study for the semi-structured focus group discussion to further investigate their perceptions of the implementation and impact of the designed pedagogy. This gave a total of six rounds of focus group discussions with 36 participating students across the three case studies.

Each focus group discussion was chaired by the thesis author and lasted for around 30 minutes. A discussion guide (see Appendix D) was designed in line with the survey questionnaire as described in the previous sub-section, for collecting thorough opinions from the selected students on the classroom implementation and learning benefits of the designed pedagogy. The student respondents were invited to share their views in response to the nine questions in the discussion guide set in five main aspects: the prior experience in the pedagogical arrangements and technological use targeted in the designed pedagogy; the specific perception of the peer-assessment and self-editing tasks in the designed pedagogy; the specific perception of the use of Edmodo and MS Word Processor in the designed pedagogy; the overall perception of the general flow of the designed pedagogy; and the specific perception of the provision of digital devices in the designed pedagogy. The audio-taped discussion records were processed by content analysis for a systematic summary of students' opinions. The detailed results will be reported and discussed in the corresponding sections in Chapter 4 to Chapter 6 in relation to the three case studies, respectively.

Chapter 4: Case Study 1 in a CMI School in the Mid of Grade 4 Curriculum

This chapter will report on the profile of the partner school and participating students; the arrangement of the trial teaching schedule and lesson details; and the results of the trial implementation of the designed pedagogy in Case Study 1. A summary of this case study will conclude this chapter.

4.1 Case Profile

The partner school in Case Study 1 is a co-educational school with a well-recognized achievement in e-Learning development over the recent years. This first partner school is a Chinese-medium (CMI) school, in which the medium of instruction for the majority of school curriculum is Chinese language except the subject of English Language. The partner school selected one Grade 4 class for Case Study 1. The selected Grade 4 class had a total of 25 students, with 12 male students and 13 female students whose average age was 9.44, for the trial teaching (see Table 4.1).

Table 4.1. Demographic data on the participating students of Case Study 1.

Issue	**Details in Case Study 1**
Grade	4
Number of students	25
Average age	9.44
Gender (Male : Female)	12 M : 13 F

According to the questionnaire survey on students' background information (please refer to Appendix C Question 1 to Question 7), all the participating students had experience in

using the two targeted digital productivity tools—Edmodo and MS Word Processor—for daily learning purposes prior to this study. The participating students used these two digital productivity tools for learning within two hours every day on average.

As for their proficiency in the use of MS Word Processor prior to this study, more than 90% of the participating students indicated that they mastered the basic functions such as changing text color (96%) and cutting, copying and pasting text (92%). Meanwhile, the majority of the participating students at that time felt unfamiliar with the advanced functions of MS Word Processor, such as using highlighter (88%) and changes-tracker (72%).

With regard to the prior experience in peer-assessment and self-editing tasks in ESL/EFL writing process, nearly 90% (88%) of the participating students had no experience in both peer-assessment and self-editing tasks in normal ESL/EFL writing lessons, prior to this study. In addition, more than 90% of the participating students (92%) indicated that the use of MS Word Processor for doing both peer-assessment and self-editing tasks in ESL/EFL writing process was new to them.

4.2 Research Arrangement

The trial teaching in Case Study 1 was conducted within 10 school days across 10 sessions, each lasted for 30 minutes. All trial teaching sessions were conducted in the general classroom of the selected Grade 4 class, in which each student used his/her own tablet PC for the computer-required trial teaching activities. The school-based English Language writing

test papers completed by the participating students in the school-based English Language writing test just before the trial teaching period served as the primary writing compositions for the peer-assessment and self-editing tasks in the trial teaching period. The primary writing compositions were in the theme of creative writing; of which the students wrote a story about a sick princess in 70 words or more. The students' writing compositions were then digitalized by the thesis author, followed by a double-checking verbatim, for use in the writing unit. The thesis author was responsible for the research and instructional activities in each trial teaching session, with details as shown in Table 4.2.

Table 4.2. Arrangement of the 10 trial teaching sessions in Case Study 1.

Session	Length (min)	Activity
1	30	Training (1a): MS Word Processor
2	30	Training (1b): Edmodo
3	30	Training (2a): Peer-assessment
4	30	Training (2b): Self-editing
5	30	Peer-assessment
6	30	Peer-assessment (Follow-up)
7	30	Whole-class Discussion
8	30	Whole-class Discussion (Follow-up)
9	30	Self-editing
10	30	Self-editing (Follow-up)
Total	*300 min (5 hr)*	

Session 1 to Session 4: Student Training. The participating students were provided with a four-part training for the participation in the trial teaching. The first two parts were about the technical operation and application scenarios about the use of MS Word Processor (Word

XP version as the school adopted) and Edmodo in the ESL/EFL writing classroom. The last two parts were about the general process and notice points of peer-assessment and self-editing tasks in the ESL/EFL writing classroom.

Session 5 and Session 6: Peer-assessment. Each student individually provided feedback on the assigned two writing compositions produced by two classmates, on a double-blind basis, according to the peer-assessment scheme for this case study. The students used Edmodo for the access to and MS Word Processor for the editing of the related two digitalized files of writing compositions.

Session 7 and Session 8: Whole-class Discussion. The instructor discussed a number of typical writing errors in students' writing compositions in the targeted writing task, in order to stimulate students' reflection on their follow-ups in the self-editing task.

Session 9 and Session 10: Self-editing. Each student individually self-edited his/her own primary writing composition in the targeted writing task, based on the feedback from the two classmates. Each student used Edmodo for accessing the digitalized files of two classmates' peer-assessment forms; and MS Word Processor for editing the digitalized file of his/her own primary writing composition.

After the 10-session trial teaching, all the 25 participating students were asked to complete a self-administered questionnaire in around 20 minutes to express their perception of the designed technology-mediated pedagogy for the ESL/EFL writing classroom. In

addition, two groups of students, of each consisted of six students, were further selected on a random basis for the semi-structured focus group discussion. Each group of selected students was asked to further provide thorough opinions on the designed technology-mediated pedagogy in around 20 minutes, according to the discussion guide in line with the design of the survey questionnaire.

As mentioned, the technological use of Edmodo and MS Word Processor was implemented in the peer-assessment tasks in Session 5 and Session 6; and the self-editing task in Session 9 and Session 10, respectively. As self-reported in the questionnaire survey at the end of the trial teaching period, when completing the peer-assessment and self-editing tasks in the writing unit, the participating students in Case Study 1 used the function of highlighter most (68%); secondly, the functions of changing text color as well as cutting, copying and pasting text (both 60%); and thirdly, the function of changes-tracker (56%). More than half of the participating students tried to use the advanced functions that were new to them after the training sessions.

4.3 Research Results

4.3.1 Students' Overall Achievements under the Designed Pedagogy

The designed technology-mediated pedagogy was found to have significantly improved the participating students' writing performance in Case Study 1. From the content analysis that evaluated students' writing compositions with the four-area scoring rubric (see Appendix

B), the participating students had a statistically significant increase in the overall scores, as well as in the specific dimension of "Grammar Accuracy", of writing compositions between the start and the end of the trial teaching period (see Table 4.3). Specifically, the score increases in the areas of "Grammar use" and "Spelling and punctuation" were statistically significant. These results reveal that the designed technology-mediated pedagogy could support students on enhancing their English writing quality, especially for enhancing their capability to write in correct grammar, spell words correctly and use punctuation marks correctly.

Table 4.3. Scores of students' writing compositions before and after the trial teaching in Case Study 1.

		Before trial teaching (N = 25)		**After trial teaching (N = 25)**		***t*-test**
		Mean	**(S.D.)**	**Mean**	**(S.D.)**	
(A) Grammar Accuracy	***(max. mark = 10)***	***5.36***	***(1.58)***	***6.24***	***(1.79)***	***4.53****
(A-1) Grammar use	*(max. mark = 5)*	2.56	(0.92)	3.12	(1.01)	3.93***
(A-2) Spelling and punctuation	*(max. mark = 5)*	2.80	(1.00)	3.12	(1.05)	3.36**
(B) Language Expression	***(max. mark = 10)***	***7.00***	***(1.47)***	***7.08***	***(1.53)***	***1.45***
(B-1) Word choice	*(max. mark = 5)*	3.72	(1.02)	3.76	(1.01)	1.00
(B-2) Sentence fluency	*(max. mark = 5)*	3.28	(0.89)	3.32	(0.95)	1.00
Overall	**(max. mark = 20)**	**12.36**	**(2.27)**	**13.32**	**(2.59)**	**4.37****

** $p < 0.01$ *** $p < 0.001$

The positive results of syntactic maturity measurement of students' writing compositions echo with such score increases among the participating students. From the content analysis that measured the syntactic maturity of writing compositions, the participating students made a statistically significant increase in the number of T-units in their writing compositions after

the trial teaching; although there was no such increase in the numbers of words, clauses and sentences (see Table 4.4). Such increase in the number of T-units led to the students had an increase in the ratio of mean T-units per sentence—denoting students' tendency to increase the frequency of adding other T-units on top of the first one in each sentence; although such ratio increase is not statistically significant (see Table 4.5 for examples of syntactic unit increase in students' writing compositions). The increase in the counts of syntactic units and the ratio of syntactic measurements signify students' development of syntactic complexity. These results reveal the potential of the designed technology-mediated pedagogy to enhance students' ability in writing complex sentence in English writing compositions.

Table 4.4. Counts of syntactic units and ratios of syntactic measurements of students' writing compositions before and after the trial teaching in Case Study 1.

Counts of Syntactic Units

	Number of Words [W]			***Number of Clauses [C]***			***Number of T-units [T]***			***Number of Sentences [S]***		
	Pre-	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***
Mean	121.72	121.08	-1.03	28.52	29.48	1.78	17.84	18.64	2.38*	12.04	12.16	1.14
(S.D.)	(30.53)	(29.26)		(7.80)	(7.23)		(4.02)	(4.08)		(4.77)	(4.64)	
Max.	194	190		47	44		28	28		20	20	
Min.	80	80		18	19		12	12		4	5	

Ratios of Syntactic Measurements

Mean clauses per T-unit [C/T] ***(Subordinate Clause Index - SCI)***			***Mean T-units per Sentence [T/S]*** ***(Main Clause Coordination Index- MCCI)***		
Pre-	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***
1.60	1.58	-0.38	1.68	1.73	1.74

* $p < 0.05$

Table 4.5. Examples of syntactic unit increase in students' writing compositions in Case Study 1.

Example (A): Increasing 1 Word & 1 Clause	
Original	The doctors said, "We can't help! We try many times, king!" *[Word = 11 ; Clause = 2 ; T-unit = 1 ; Sentence = 1]*
Self-edited	The doctors said, "We can't help <u>because we</u> try many times, king!" *[Word = 12 ; Clause = 3 ; T-unit = 1 ; Sentence = 1]*
Remark	The student used the conjunction "because" to combine the 2 simple sentences in the utterance to be a cause-and-effect complex sentence. The originally second sentence became a subordinate clause in turn. This revision led to an increase in 1 word and 1 clause in the sentence.
Example (B): Increasing 9 Words & 2 Clauses & 2 T-units	
Original	The king said, "Yes! You can try!" *[Words = 7 ; Clauses = 2 ; T-units = 2 ; Sentences = 1]*
Self-edited	The king said, "Yes! You can try <u>but if you can't do it you go out</u>!" *[Words = 16 ; Clauses = 4 ; T-units = 4 ; Sentences = 1]*
Remark	The student added a coordinate clause, of which consisted of a conditional sentence, for content enrichment. This revision led to an increase in 9 words, 2 clauses and 2 T-units in the sentence.

The abovementioned results indicate that the designed technology-mediated pedagogy could foster the Grade 4 participating students' achievements in the ESL/EFL writing task, considerably in the dimension of grammar accuracy. The participating students made a significant improvement in the overall quality of English writing compositions. Additionally, the students had a significant enhancement of syntactic maturity of English writing compositions. The coming sub-sections are going to reveal how the peer-assessment and self-editing processes in the designed technology-mediated pedagogy contributed to the abovementioned results.

4.3.2 The Characteristics of Students' Peer-assessment Feedback Provision

From the content analysis of students' completed peer-assessment forms on the social

learning platform Edmodo, all of the participating students in Case Study 1 were able to provide feedback in the peer-assessment tasks. From students' self-reporting in the questionnaire survey at the end of the trial teaching period, more than 60% of the participating students (64%) were able to complete a peer-assessment task within 15 minutes. More than half of the participating students considered the advanced functions of MS Word Processor were useful for supporting their peer-assessment tasks in the trial teaching. The participating students pointed out that the function of changes-tracker was most useful (84%) in the peer-assessment tasks; the function of spelling-check came secondly important (68%) and grammar-check followed (56%).

A total of 586 feedback items were identified among all pieces of the peer-assessed writing compositions in Case Study 1. The number of feedback items per peer-assessed writing composition ranged from 1 to 68, with 13.02 feedback items on average (S.D. = 12.36). The participating students were found to have provided feedback in two major forms, namely alterations and suggestions. No feedback item in the forms of evaluation and clarification was found. As shown in Table 4.6, around 90% of the feedback items were alterations (91.3%), of which students provided specific changes on the under-assessment writing compositions. The students mainly adopted three ways to inform the peer-assessees about the specific changes made, namely (1) enabling the changes-tracker function for a direct display of markups in the text file; (2) amending the text file directly and then changing

the text color of the amendments for markups; and (3) amending the text file directly and then using the highlighter function to mark the amendments. The remaining 8.7% of the feedback items were suggestions, of which students pointed out the direction for changes for the under-assessment writing compositions. The students either highlighted or changed the color of the text which required further revision.

Table 4.6. Feedback provision among students in the peer-assessment tasks in Case Study 1.

	Surface copy-editing						**Content meaning enhancement**				**Sub-total**	
	Grammar		**Punctuation**		**Spelling**		**Idea presentation**		**Text organization**			
	N	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**
Alterations	175	(29.9)	146	(24.9)	106	(18.1)	89	(15.2)	19	(3.2)	535	(91.3)
Suggestions	20	(3.4)	8	(1.4)	15	(2.5)	7	(1.2)	1	(0.2)	51	(8.7)
Total	*195*	*(33.3)*	*154*	*(26.3)*	*121*	*(20.6)*	*96*	*(16.4)*	*20*	*(3.4)*	*586*	*(100.0)*

As shown in Table 4.6, the students focused on providing alterations for correcting grammar use (29.9%), alterations for improving punctuation use (24.9%), and alterations for correcting misspellings (18.1%). The feedback items provided by the students addressed all five areas under the two main intentions—surface copy-editing and content meaning enhancement—as described in sub-section 3.3.2. Examples of students' peer-assessment feedback items for surface copy-editing and content meaning enhancement can be found in Table 4.7 and Table 4.8, respectively.

Firstly, the majority of feedback items (80.2%) had the intention for surface copy-editing, which drew attention to the accurate use of grammar (33.3%), punctuation (26.3%) and spelling (20.6%) in English writing. As the examples shown in Table 4.7,

students' feedback concerning grammar use focused on the errors of tense use (e.g., the consistent use of past tenses in the writing unit in this case study); subject-verb agreement (i.e., the correct alignment of singular vs plural forms); and pronoun use (e.g., the correct use of subject pronouns and object pronouns as well as the proper use of personal pronouns and possessive determiners). The feedback regarding punctuation was to keep the consistency in starting sentences with capital letters as well as ending sentences in different sentence forms with correct punctuation marks. Students' feedback on spelling was to correct the misspelled words, including the occurrence of misusing homonyms, in the under-assessment writing compositions.

Secondly, around one-fifth of feedback items (19.8%) had the intention for content meaning enhancement, which drew attention to improving idea presentation (16.4%) and text organization (3.4%) for a better clarity in English writing. As the examples shown in Table 4.8, students' feedback with respect to idea presentation was to add, substitute and delete words or sentences in the under-assessment writing compositions without changing the overall text meaning for better clarity. Students' feedback on text organization was to replace conjunctions and/or move text for enhancing sentence fluency of the under-assessment writing compositions.

Table 4.7. Examples of students' peer-assessment feedback items for surface copy-editing in Case Study 1.

Category	Examples of students' feedback items
Grammar	***Feedback in the form of "Alternations"*** ● The young prince ~~kiss~~ kissed the princess … *[Remark: The student used changes-tracker function for an alternation to correct the present-tense verb "kiss" to the past-tense verb "kissed" in story-writing.]* ● "Let ~~my~~ me try, I can help." *[Remark: The student used changes-tracker function for an alternation to correct the possessive determiner "my" to the object pronoun "me" in the first imperative clause.]* ***Feedback in the form of "Suggestions"*** ● …The prince make sandwich … *[Remark: The student used highlighter function to indicate the need to correct the present-tense verb "make" in the text emphasizing the use of past tenses.]* ● We try to help she(her) … *[Remark: The student inserted a suggestion, in differently-colored text, on changing the subject pronoun "she" to object pronoun "her" in the predicate of the sentence.]*
Punctuation	***Feedback in the form of "Alternations"*** ● Who are you~~.~~? *[Remark: The student used changes-tracker function for an alternation to replace the period with a question mark to end the interrogative who-sentence.]* ● … there was an unhappy king. ~~he~~ He was in his palace … *[Remark: The student used changes-tracker function for an alternation to capitalize the personal pronoun "he" for starting a new sentence.]* ***Feedback in the form of "Suggestions"*** ● The King said … *[Remark: The student used highlighter function to indicate the need to un-capitalize the noun "king", which should not be a proper noun in the text context.]* ● The king said to the doctors sadly. "Who can help my lovely daughter?" *[Remark: The student used highlighter function to indicate the need to change the period to a comma, as a who-clause followed in the punctuated sentence.]*
Spelling	***Feedback in the form of "Alternations"*** ● His daughter ate ~~to~~ too much … *[Remark: The student used changes-tracker function for an alternation to correct the spelling "too" instead of "to" for the correct use of adverb of degree.]* ● The king was angry and the king mother and father were sad ~~said~~. *[Remark: The student used changes-tracker function for an alternation to correct the spelling "sad" instead of "said" for the correct use of adjective.]* ***Feedback in the form of "Suggestions"*** ● … you can tny but you need to make my daughter … *[Remark: The student used highlighter function to indicate the need of typo-correction for the verb "try" in the sentence.]* ● … the prince kisted the king's daughter … *[Remark: The student used highlighter function to indicate the need of typo-correction for the past-tense form of the verb "kiss" to be "kissed" in the sentence.]*

Table 4.8. Examples of students' peer-assessment feedback items for content meaning enhancement in Case Study 1.

Category	Examples of students' feedback items
Idea presentation	***Feedback in the form of "Alternations"*** ● "What is your ~~a~~ idea?" *[Remark: The student used changes-tracker function for an alternation to replace the indefinite article "a" with the possessive determiner "your" for delimiting who possessed "the idea".]* ● Then, the prince tried *[to]* kiss the princess ~~king's daughter~~. *[Remark: The student used changes-tracker function for an alternation to replace the phrase "king's daughter" with the noun "princess" for a more precise word use.]*
	Feedback in the form of "Suggestions" ● The young boy smiled. (Then, he said…) So, the king … *[Remark: The student inserted a suggestion, in differently-colored text, on the need to add a sentence describing further the thought of "the young boy" behind his smile.]* ● The king cried. (why there is a prince?) A prince said "Let me try … *[Remark: The student inserted a suggestion, in differently-colored text, on the need to add an explanation for the background of "a prince" whom was not mentioned in the text preceding the sentence "The king cried."]*
Text organization	***Feedback in the form of "Alternations"*** ● However, ~~But~~ the doctors said … *[Remark: The student used changes-tracker function for an alternation to replace the conjunction "But" with the adverb "However" for the start of a new sentence.]* ● After that, the boy took *[a]* bowl of soup to give the king's princess *[to]* drink. Suddenly ~~Next~~, princess woke up … *[Remark: The student used changes-tracker function for an alternation to replace the adverb "Next" with the adverb "Suddenly" to show the unexpected, rather than the conjectural, reaction of the princess.]*
	Feedback in the form of "Suggestions" ● Why there had *[an]* unhappy king? Because his daughter was ill. because the princess was … *[Remark: The student used highlighter function to indicate the need to reconsider the conjunction used for the clause further explaining the illness of the princess.]*

In summary, the participating Grade 4 students in Case Study 1 under the designed technology-mediated pedagogy could complete the peer-assessment tasks on their own in line with the assessment criteria delineated in the tailored peer-assessment form. With regard to the type of peer comments, the majority of the participating students in Case Study 1 intended to give peer comments in the form of alterations to directly provide specific changes on the under-assessment writing compositions. With respect to the depth of peer comments, the

majority of the participating students intended to give peer comments for the surface copy-editing of mistakes in grammar, punctuation and spelling in the under-assessment writing compositions. These results reveal that the participating students in Case Study 1 were willing and confident to give straight-forward and concrete support on their peers to improve English writing products, with a focus on the dimension of grammar accuracy.

4.3.3 The Characteristics of Students' Self-editing Revision-making

From the content analysis of students' final revision-tracked writing files in the MS Word format, the participating students in Case Study 1 were able to self-edit their own writing products in the self-editing task. Twenty-three participating students (92.0%) attempted to make revisions in the self-editing task. From the self-reporting through the student questionnaire survey at the end of the trial teaching period, the majority of the participating students (80%) completed the self-editing task within 15 minutes. More than half of the participating students considered the advanced functions of MS Word Processor were useful for supporting their self-editing task. The participating students indicated that the function of changes-tracker was most useful (80%) in the self-editing task; and the function of highlighter followed (64%).

A total of 148 revision items were identified among the 23 self-edited writing compositions. The number of revision items per self-edited writing composition ranged from 1 to 14, with 5.92 revision items on average (S.D. = 4.09). The students were found to make

two major types of self-revisions, namely form-edits and content-edits. As shown in Table 4.9, more than three quarters of the revision items were form-edits (76.4%), of which students focused on editing the use of grammar (34.5%), spelling (30.4%) and punctuation (11.5%) in their original writing compositions. In line with their experience in peer-assessment feedback provision, students' revisions concerning grammar use focused on the errors of tense use (e.g., the consistent use of past tenses in the writing unit in this case study); subject-verb agreement (i.e., the correct alignment of singular vs plural forms); and pronoun use (e.g., the correct use of subject pronouns and object pronouns as well as the proper use of personal pronouns and possessive determiners). The revision items on spelling were to correct the misspelled words, including the occurrence of misusing homonyms, in the self-edited compositions. The revision items regarding punctuation were to keep the consistency in starting sentences with capital letters as well as ending sentences in different sentence forms with correct punctuation marks.

The remaining 23.6% of the revision items were content-edits, of which students attempted to improve the clarity of content expression through adding new text for better clarity (8.8%); substituting existing text (8.1%); deleting duplicate and/or ill-structured text (6.1%); and rearranging existing text (0.6%). Examples of students' self-revisions made in the self-editing task can be found in Table 4.10.

Table 4.9. Self-revisions among students in the self-editing task in Case Study 1.

Types of self-revisions		**Number**	**(%)**
Form-edits	Grammar	51	(34.5)
	Spelling	45	(30.4)
	Punctuation	17	(11.5)
	Sub-total	113	(76.4)
Content-edits	Addition	13	(8.8)
	Substitution	12	(8.1)
	Deletion	9	(6.1)
	Rearrangement	1	(0.6)
	Sub-total	35	(23.6)
	Total	*148*	*(100.0)*

Table 4.10. Examples of students' self-editing revision items in Case Study 1.

Types of self-revisions		Examples of students' self-revisions
Form-edits	Grammar	● One day, the king ~~find~~ found three doctors. *[Remark: The student corrected the present-tense verb "find" to the past-tense verb "found" in story-writing.]* ● He asked them to ~~helped~~ help. *[Remark: The student corrected the past-participle "helped" to its bare verb form "help" as in the use of to-infinitive.]*
	Spelling	● The princess ~~sleeped~~ slept on the bed. *[Remark: The student corrected the spelling "slept" instead of "sleeped" for the correct use of the past-tense form of the verb "sleep".]* ● "~~Thankyou~~ Thank you very much prince!" *[Remark: The student added a space for the correct spelling of "Thank you" instead of "Thankyou".]*
	Punctuation	● After that, ~~The~~ the doctor went away. *[Remark: The student un-capitalized the definite article "the", which was not the starting word of the sentence; although it started a clause.]* ● I ~~Can~~ can help! *[Remark: The student un-capitalized the modal verb "can", which was not the starting word of the sentence.]*
Content-edits	Addition	● The king was very worried. *[Remark: The student inserted the adverb of degree "very" to specify the degree of worry of the king described in the text.]* ● "We can't help you!" *[Remark: The student inserted the object pronoun "you" after the transitive verb "help" to specify the person whom received helping action.]*
	Substitution	● Once upon a time, there was an unhappy king. He was sad because his daughter was ill, he only had one ~~child~~ daughter … *[Remark: The student replaced the noun "child" with the one "daughter" to specify the gender of "the child" of the king described in the text.]* ● *[The king]* felt very surprised because he ~~can't~~ didn't believe a little prince can make his doctor recover. *[Remark: The student replaced the use of modal verb "can" with the use of the auxiliary verb "do" to deemphasize the king's degree of trust to the "little prince" described in the text.]*
	Deletion	● The prince gave the king's daughter some drink ~~to her~~. *[Remark: The student removed the phrase "to her" to keep precise presentation, as the object "the king's daughter" already existed for the transitive verb "gave" in the sentence.]* ● He was sad because his daughter was ill, he only had one child, he was worried ~~about her~~. *[Remark: The student removed the phrase "about her" to keep a precise presentation, as the target of the king's worry—"the king's daughter" already mentioned in the sentence.]*
	Rearrangement	● It showed that the princess often *[ate]* dirty food and ~~before meals,~~ she did not wash her hands before meals. *[Remark: The student moved the phrase "before meals" from the start to the end of the sentence for a better sentence fluency.]*

In summary, the Grade 4 participating students in Case Study 1 under the designed

technology-mediated pedagogy could complete the self-editing task on their own based on the peer comments given in the completed peer-assessment form. The participating students intended to make form-edits to revise their writing products through conventional copy-editing operations in grammar, spelling and punctuation.

4.3.4 Students' Perceptions toward the Designed Pedagogy

From the questionnaire survey and focus group discussions with the participating students at the end of the writing unit, the participating students in Case Study 1 in general had a positive perception of the designed technology-mediated pedagogy.

4.3.4.1 Students' Overall Perception of the Designed Technology-mediated Pedagogy

As shown in Table 4.11, 80% of the students asserted that the teaching flow and learning materials in the designed pedagogy were appropriately arranged (Mean = 4.28 ; S.D. = 0.98). More than 70% of the students agreed or very agreed that the designed pedagogy could motivate them to become serious in English writing tasks (Mean = 4.16 ; S.D. = 0.94), feel responsible for their own learning (Mean = 4.12 ; S.D. = 0.97) and peers' learning (Mean = 4.16 ; S.D. = 0.99), and help them consolidate English language knowledge (Mean = 4.12 ; S.D. = 0.88). Around 70% of the students considered that the designed pedagogy could motivate them to reflect more on their English writing performance (Mean = 4.08 ; S.D. = 1.15), and perform better in English writing (Mean = 4.08 ;

S.D. = 1.15).

Table 4.11. The overall perception among the participating students in Case Study 1 toward the designed technology-mediated pedagogy.

Item	**Mean ***	**(S.D.)**
The flow of designed pedagogy was appropriate.	4.28	(0.98)
The designed pedagogy could motivate me to become serious in my English writing tasks.	4.16	(0.94)
The designed pedagogy made me feel responsible for other peers' learning.	4.16	(0.99)
The designed pedagogy helped me consolidate English language knowledge.	4.12	(0.88)
The designed pedagogy made me feel responsible for my own learning.	4.12	(0.97)
The designed pedagogy could motivate me to reflect more on my English writing performance.	4.08	(1.15)
I can perform better in English writing after learning under the designed pedagogy.	4.08	(1.15)
I was satisfied with the materials and arrangements in the designed pedagogy.	4.08	(1.19)
The designed pedagogy could motivate me to become active in learning English language.	4.00	(1.15)
I become more confident of writing in English after learning under the designed pedagogy.	4.00	(1.19)
I enjoy more the process of English writing after learning under the designed pedagogy.	3.92	(1.19)
The designed pedagogy could increase my interest in learning English language.	3.88	(1.36)
The designed pedagogy should be continued in normal English writing lessons.	3.80	(1.47)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions echoes with the above questionnaire survey results (see Table 4.12). All the student respondents expressed that the three components in the designed pedagogy were very meaningful. One-third of the student respondents indicated that the most impressive aspect of the designed technology-mediated pedagogy was its potential to support them on achieving better learning performance in English writing. Another one-third of the student respondents were most impressed by the impact of the designed technology-mediated pedagogy on increasing their motivation to learn seriously and their sense of responsibility for their own learning. One-fourth of the student respondents considered the most impressive impact of the designed

technology-mediated pedagogy was that this made them feel responsible for peers' learning.

Table 4.12. Students' overall feedback from focus group discussions in Case Study 1 on the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the designed pedagogy	- The students considered the designed pedagogy was appropriate and meaningful, with a series of interrelated activities stimulating them to check and correct language mistakes in peers' and their own writings. - The students enjoyed and valued this special and interesting experience which was more interesting and innovative than the conventional ESL/EFL writing curricular activities.
Learning benefits from the designed pedagogy	- The students stressed that the peer-assessment tasks increased their sense of responsibility to try their best to spot out language errors and suggest possible corrections to help their peers revise their writings. - The students appreciated the multiple opportunities of the designed pedagogy for knowledge application, which entailed them to iteratively recall, practice, and consolidate own knowledge of English writing. - The students asserted the reciprocal support of the designed pedagogy on the peer-assessment tasks for consolidating grammatical knowledge and the self-editing tasks for iteratively refining writing products.

The student respondents in general enjoyed this teaching flow. They appreciated that the interrelated activities in the three-component teaching flow gave them a special and interesting experience in learning English writing that is hardly found in normal ESL/EFL writing lessons. Two student respondents, both claimed themselves perform unsatisfactorily in English writing, further commented that this teaching flow suited their learning need very well. They thought that this teaching flow provided them with opportunities not only to iteratively improve their writing products in the self-editing task, but also consolidate their grammatical knowledge through the whole-class discussion. They considered that this

teaching flow allowed them to learn English language and writing skills step-by-step; and therefore hoped that this teaching flow can be kept implemented.

4.3.4.2 Students' Specific Perception of Pedagogical Arrangements of Peer-assessment and Self-editing

The participating students in Case Study 1 positively perceived the pedagogical arrangements of peer-assessment and self-editing tasks in the ESL/EFL writing classroom. The questionnaire survey (see Table 4.13 and Table 4.14) found that the majority of the students recognized the benefit and improvement in English writing brought about by the process of peer-assessment (72% ; Mean = 4.16 ; S.D. = 0.94) and self-editing (84% ; Mean = 4.28 ; S.D. = 0.85). Around 70% of the students agreed or very agreed to the need to know how to peer-assess (67% ; Mean = 4.20 ; S.D. = 0.91) and self-edit (72% ; Mean = 4.12 ; S.D. = 0.83) English writing compositions. Most of the students expressed their readiness to do peer-assessment and self-editing tasks. Around 75% of the students were confident of giving feedback in peer-assessment tasks (72% ; Mean = 4.08 ; S.D. = 1.00); and felt comfortable to take peers' feedback for making revisions in self-editing tasks (76% ; Mean = 4.20 ; S.D. = 0.82). It is noteworthy that 60% of the students indicated their capacity to think critically when making revisions in self-editing tasks (Mean = 4.20 ; S.D. = 0.76).

Table 4.13. The specific perception among the participating students in Case Study 1 toward the peer-assessment task in the designed technology-mediated pedagogy.

Item	**Mean ***	**(S.D.)**
It is necessary for me to know how to peer-assess my classmates' English writing compositions.	4.20	(0.91)
I was benefited from the peer-assessment process for learning English language.	4.16	(0.94)
I was confident of giving feedback in peer-assessment tasks.	4.08	(1.00)
The peer-assessment process could help me improve my English writing.	4.04	(0.84)
I could think critically to give feedback in peer-assessment tasks.	4.00	(0.76)
I liked to give feedback in peer-assessment tasks.	4.00	(0.91)
I could provide accurate and sufficient feedback to peers in peer-assessment tasks.	4.00	(1.04)
It was easy to give feedback in peer-assessment tasks.	3.80	(1.08)
The peer-assessment process could increase my interest in English writing.	3.80	(1.19)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

Table 4.14. The specific perception among the participating students in Case Study 1 toward the self-editing task in the designed technology-mediated pedagogy.

Item	**Mean ***	**(S.D.)**
The self-editing process could help me improve my English writing.	4.28	(0.85)
I could think critically to make revisions in self-editing tasks.	4.20	(0.76)
I felt comfortable to take feedback for making revisions in peer-assessment tasks.	4.20	(0.82)
It is necessary for me to know how to self-edit my own English writing compositions.	4.12	(0.83)
I liked to take feedback and then make revisions in self-editing tasks.	4.12	(0.93)
I was benefited from the self-editing process for learning English language.	4.12	(0.97)
The feedback given by peers was accurate and sufficient for my self-editing task.	4.04	(0.84)
It was easy to interpret feedback and then make revisions in self-editing tasks.	4.04	(1.02)
The self-editing process could increase my interest in English writing.	3.92	(1.12)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions echoes with the above questionnaire survey results (see Table 4.15 and Table 4.16). The student respondents in general considered the peer-assessment and self-editing tasks in the designed technology-mediated pedagogy were very valuable, as these tasks stimulated them to reciprocally help peers and themselves identify and improve their weaknesses in ESL/EFL writing tasks.

Table 4.15 summarizes students' overall feedback with regard to the peer-assessment

task in the designed technology-mediated pedagogy. All student respondents expressed they liked to perform peer-assessment task, even those who considered themselves as less-able achievers in English language learning. They indicated their enjoyment to check the mistakes that their peers made in English writing. Half of the student respondents considered the most impressive impact of the peer-assessment tasks was its help to improve English writing and advance English language learning. A quarter of the student respondents were most impressed that the peer-assessment tasks increased their interest in both English writing and English learning. Around one-fifth of the student respondents expressed their strong favor for the technology-supported peer-assessment tasks in ESL/EFL writing lessons.

Table 4.15. Students' overall feedback from focus group discussions in Case Study 1 on the peer-assessment task in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of peer-assessment task	- The students liked to perform peer-assessment tasks, as they enjoyed checking English writing errors made by peers. They agreed that peer-assessment is an essential process in ESL/EFL writing curriculum.
Learning benefits from peer-assessment task	- The student respondents indicated peer-assessment tasks enabled them to reciprocally apply existing knowledge and learn more knowledge about English language through assessing peers' writing compositions. - The students agreed that peer-assessment tasks could improve their interest and competence in English writing, as they were prompted to reflect on their own weaknesses after identifying peers' writing errors. - The students thought that peer-assessment tasks could help them enhance critical thinking skills, as they needed to spot out peers' writing errors and think of the appropriate amendments correspondingly.

All student respondents also agreed that peer-assessment is an essential process in ESL/EFL writing curriculum, as this task could promote them to reflect more on their own

competence in English writing. The student respondents pointed out that they were prompted to reflect on their weaknesses in English writing after identifying other classmates' writing mistakes. The student respondents thought this learning process enabled them to learn more knowledge about English language through assessing English writing compositions of their peers. The student respondents thought that after the peer-assessment task, their competence and performance in English writing had been enhanced as they felt able to assess English writings of other classmates. The student respondents, even those who consider themselves as less-able achievers in English language learning, believed that peer-assessment task could help them to prepare better for school tests/examinations in the English language subject. The student respondents thought that the peer-assessment task could help them to enhance their competence in critical thinking. It is because when they peer-assessed the English writings of other classmates, they needed to spot out their errors and think of the corresponding amendments.

Table 4.16 summarizes students' overall feedback with regard to the self-editing task in the designed technology-mediated pedagogy. The student respondents in general liked self-editing task, as they liked to see the ratings, comments and suggestions given by other classmates on their own writings for further improvement. More than 40% of the student respondents (41.67%) were most impressed by the benefits of the self-editing task to improve English writing and so to advance English language learning. A quarter of the student

respondents indicated that the most impressive aspect of the self-editing task was its potential to facilitate them to think critically when editing their own writing compositions with reference to revision feedback from peers. Another quarter of the student respondents considered the most impressive impact of the self-editing task was its influence on increasing learning interest in ESL/EFL writing classrooms.

Table 4.16. Students' overall feedback from focus group discussions in Case Study 1 on the self-editing task in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of self-editing task	- The students liked to perform self-editing task as they were curious how their peers rated and revised their own writing products. This stimulated them to rethink their own writing quality for further improvement. - The students considered the self-editing task interesting and meaningful, which enhanced their awareness to avoid existing writing errors in future; and so their willingness to advance English learning.
Learning benefits from self-editing task	- The students considered the self-editing task helpful to solve their uncertainties about some issues of vocabulary and grammar use, after checking how peers revised their primary writing compositions. - The students believed that the self-editing task could make them think critically about their writing, as they could judge their own writing errors after viewing the comments from their peers. - The students considered the self-editing task important for their self-reflection and so self-enhancement in English writing based on the comments, suggestions and ratings given by different peer-assessors.

The student respondents thought that the self-editing task was very meaningful, as they could reflect more on their weaknesses in ESL/EFL writing tasks. Some student respondents expressed that at first they were uncertain about some issues of vocabulary and grammar use when they produced their primary writing compositions. The student respondents pointed out

that the self-editing task allowed them to check the peer-assessed feedback from their peers for learning a lot of knowledge about English language. This not only let them know how the others revise their writing, but also made their self-editing process become easy and convenient, as they could refer to the revision feedback from their peers. The student respondents found that the process of self-editing the peer-assessed compositions not only enhanced their awareness to avoid making similar mistakes in future writing tasks; but also increased their learning interest and helped them to improve their English writing, and in turn, their English learning. Additionally, the student respondents believed that the self-editing task could make them think critically about their writing, as they needed to judge and rectify their language errors in English writing after viewing the comments from their peers.

The student respondents were also asked about their views on two situations. First, a small proportion (8.0%) of their classmates did not attempt to make revisions in the self-editing task. The student respondents who had such behavior indicated their relatively low motivation in English learning; and claimed that they needed not to make self-editing revisions as they considered their compositions error-free. The root of this situation may require efforts additional to pedagogical design for a satisfactory handling. Second, a proportion (no more than 20%) of their classmates in the questionnaire survey less affirmed the ease of feedback-provision in peer-assessment tasks and the impact of peer-assessment tasks on learning interest. Some student respondents who had such response in the

questionnaire survey, surprisingly, indicated that they actually thought it was not difficult to complete the peer-assessment tasks. The student respondents stressed that they were not as capable as their teachers, and thus unable to easily identify and correct all errors in writing compositions. These student respondents also expressed their generally low enthusiasm for learning English language, although they considered the peer-assessment tasks per se interesting.

4.3.4.3 Students' Specific Perception of Technological Use of Edmodo and MS Word Processor

For the technological use of Edmodo and MS Word Processor in the ESL/EFL writing classroom, the participating students in Case Study 1 highly appreciated the support from these two digital productivity tools on the peer-assessment and self-editing tasks in the designed technology-mediated pedagogy. The majority of the students in the questionnaire survey (see Table 4.17 and Table 4.18) indicated that it was easy to use Edmodo (84% ; Mean = 4.44 ; S.D. = 0.77) and MS Word Processor (76% ; Mean = 4.40 ; S.D. = 0.87) to handle peer-assessment and self-editing tasks. Regarding the use of Edmodo, most of the students (92% ; Mean = 4.56 ; S.D. = 0.65) liked to use Edmodo in peer-assessment tasks. More than three quarters of the students (76%) thought that the use of Edmodo could help to support ESL/EFL writing tasks (Mean = 4.28 ; S.D. = 1.06), especially to enhance their interaction with peers in ESL/EFL writing tasks (Mean = 4.28 ; S.D. = 0.94). As for the use

of MS Word Processor, there were 76% of the students agreed or very agreed that the use of MS Word Processor helped to support ESL/EFL writing tasks (Mean = 4.20 ; S.D. = 1.20), especially enhancing the efficiency of peer-assessment and self-editing tasks (Mean = 4.32 ; S.D. = 1.03); and so would continue exploring the use of MS Word Processor for supporting English writing (Mean = 4.20 ; S.D. = 1.00).

Table 4.17. Students' specific perception of the technological use of Edmodo in the designed technology-mediated pedagogy in Case Study 1.

Item	**Mean ***	**(S.D.)**
I liked to use Edmodo in peer-assessment tasks.	4.56	(0.65)
I felt easy to use Edmodo to handle peer-assessment tasks.	4.44	(0.77)
The use of Edmodo could enhance my interaction with peers in English writing tasks.	4.28	(0.94)
It was helpful to use Edmodo for supporting English writing tasks.	4.28	(1.06)
The use of Edmodo could enhance the efficiency of peer-assessment tasks.	4.24	(0.88)
The use of Edmodo could enhance my learning interest in English writing lessons.	4.16	(1.14)
The use of Edmodo could motivate me to actively learn from peers' writing compositions.	4.08	(1.04)
I will continue exploring the use of Edmodo for supporting English writing.	3.80	(1.19)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

Table 4.18. Students' specific perception of the technological use of MS Word Processor in the designed technology-mediated pedagogy in Case Study 1.

Item	**Mean ***	**(S.D.)**
I felt easy to use MS Word Processor to handle peer-assessment and self-editing tasks.	4.40	(0.87)
The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks.	4.32	(1.03)
I will continue exploring the use of MS Word Processor for supporting English writing.	4.20	(1.00)
It was helpful to use MS Word Processor for supporting English writing tasks.	4.20	(1.20)
The use of MS Word Processor in English writing tasks could motivate me to actively reflect on my areas of improvement in English writing.	4.16	(0.99)
I liked to use MS Word Processor in peer-assessment and self-editing tasks.	4.16	(1.14)
The use of MS Word Processor in English writing tasks could motivate me to actively identify peers' areas of improvement in English writing.	4.04	(1.10)
The use of MS Word Processor could enhance my learning interest in English writing lessons.	3.88	(1.36)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions echoes with the

above questionnaire survey results (see Table 4.19 and Table 4.20). The student respondents further acknowledged the positive impact of the technological use of Edmodo and MS Word Processor in the designed pedagogy.

Table 4.19 summarizes students' overall feedback with regard to the use of Edmodo in the designed technology-mediated pedagogy. More than 40% of the student respondents (41.67%) were most impressed by the potential of Edmodo to enhance the efficiency of peer-assessment tasks. One-third of the student respondents considered the most impressive impact of Edmodo was its potential to enhance their interaction with peers in ESL/EFL writing tasks. The remaining quarter of the student respondents were most impressed that Edmodo was easy to use and helpful to enhance learning interest in ESL/EFL writing lessons.

Table 4.19. Students' overall feedback from focus group discussions in Case Study 1 on the use of Edmodo in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the use of Edmodo	- The students liked to use Edmodo in the writing unit. They considered it was easy, useful and important to use Edmodo for learning interaction when they needed to seek help from peers during the writing tasks.
Learning benefits from the use of Edmodo	- The students valued the potential of Edmodo to increase the efficiency and joy of the writing unit, especially for instant communication with peers and teacher, without the restrictions from lesson schedule. - The students asserted the diverse functions of Edmodo to facilitate their flow of efficient assignments submission, timely online discussion and prompt comments check anytime, anywhere.

The student respondents explained that it was very important to interact with peers. It is because they could seek help from peers when they encountered problems on the writing

tasks. The use of Edmodo in the writing unit allowed them to promptly check comments from peers and the teacher on their writing compositions anytime, anywhere. The student respondents also appreciated the potential of Edmodo to support their easy and convenient discussion about subject issues with classmates. They expressed their strong favor for integrating the use of Edmodo into the writing unit for a smooth teaching flow, in particular allowing them to conveniently interact with classmates promptly and submit assignments to the teacher anytime anywhere, without the restrictions from lesson schedule.

Table 4.20 summarizes students' overall feedback with regard to the use of MS Word Processor in the designed technology-mediated pedagogy. Half of the student respondents expressed their strong impression that MS Word Processor was very helpful to support ESL/EFL writing tasks. One-third of the student respondents were most impressed by the support of MS Word Processor on enhancing the efficiency of peer-assessment and self-editing tasks. The remaining 16.67% of the student respondents indicated that the most impressive aspect of the use of MS Word Processor was its potential to enhance their learning interest in ESL/EFL writing lessons.

Table 4.20. Students' overall feedback from focus group discussions in Case Study 1 on the use of MS Word Processor in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the use of MS Word Processor	- The students asserted that it was easy, useful and important to use MS Word Processor for the writing unit. Its diverse functions could bring about convenience unfound in the paper-and-pencil-based arrangement.
Learning benefits from the use of MS Word Processor	- The students asserted the potential of varying editorial functions of MS Word Processor to increase their interest and confidence in providing revision feedback and making self-editing revisions. - The students noted the changes-tracker function could greatly support peer-assessment tasks for the convenient and clear tracking of revisions on the text files, which was hard to do in the paper-and-pencil manner. - The students indicated that the spelling-check and grammar-check functions could particularly support the self-editing task, as the system could automatically let them know the correctness of the revisions.

All student respondents agreed that the use of MS Word Processor could bring them about convenience unfound in paper-based peer-assessment, as it is difficult to conveniently mark revisions, track changes and exchange revised files when the paper-and-pencil-based approach is adopted. Two of the student respondents pointed out that they liked most the spelling-check and grammar-check functions, as the system could automatically let users know the correctness of the revisions. They also liked the highlighter function for easy and clear marking of their revisions. The student respondents explained that the use of MS Word Processor could help them to easily spot out the mistakes in peers' compositions for further corrections. The student respondents pointed out that the varying editorial functions of MS Word Processor increased their confidence to provide revision feedback to their peers and their interest in ESL/EFL writing tasks, especially for peer-assessment tasks.

The results of the questionnaire survey and focus group discussions as reported in this sub-section 4.3.4 reveal that students in Case Study 1 especially recognized the cognitive benefits of the designed pedagogy to stimulate directions on performance improvement in English writing. The choice of the primary composition for the trial teaching in this case study—a school-based English Language writing test paper—might be a possible cause of such case-specific perception. The students in Case Study 1 were fully informed of this arrangement of primary compositions prior to the three in-class processes of peer-assessment, whole-class discussion and self-editing. The majority of the students were then expectant to receive feedback from their peers for improving the quality of their primary compositions, viz. their writing test papers. After realizing the need for mutual feedback-provision in the peer-assessment tasks as a foundation for their receipt of peer feedback from other classmates, the students felt responsible for trying their best to provide feedback and/or suggestions for their peers to improve their primary compositions. Such learning experience entailed the students to recognize the positive support of the designed pedagogy on enhancing their English writing performance and sense of learning responsibility.

4.4 Case Summary

Case Study 1 implemented a 10-session trial of the designed technology-mediated pedagogy in a Grade 4 class, with 25 students whose average age was 9.44, in a Chinese-medium (CMI) co-educational school in the mid of Grade 4 ESL/EFL curriculum in

Hong Kong. All the 25 participating students already had experience in using the digital productivity tools Edmodo and MS Word Processor for learning purposes. The pedagogical arrangements of peer-assessment and self-editing tasks in ESL/EFL writing lessons were new to nearly 90% of the participating students in this case study.

The participating students in this case study gave a total of 25 pieces of creative writing compositions, with the average length of 121.72 words per writing composition, telling a story about a sick princess. Each participating student was arranged for a three-component pedagogical flow to peer-assess two writing compositions, join a whole-class discussion about noteworthy writing issues, and self-edit own writing composition based on peers' feedback. The social learning platform Edmodo and the word processing productivity tool MS Word Processor were used in the writing unit for supporting students' peer-communication and text-editing in a digital manner.

With the technological support from the two concerning digital productivity tools, the participating students could complete the peer-assessment and self-editing tasks as arranged in the writing unit. In the peer-assessment task, the participating students were able to provide 13.02 feedback items on average per peer-assessed composition. More than 90% of the peer feedback items were given in the form of alterations for directly providing specific changes on the under-assessment writing compositions. Around 80% of the peer feedback items were given for the purpose of surface copy-editing, which drew attention to the accurate use of

grammar, punctuation and spelling. In the self-editing task, the participating students made 5.92 self-revisions on average per self-edited composition. Over three quarters of the self-revisions were form-edits, which focused on editing the use of grammar, spelling and punctuation in the original writing compositions.

From the two-part content analysis on students' overall achievements under the designed technology-mediated pedagogy, the participating students were found to have a statistically significant improvement in the overall writing scores; and enhance the syntactic maturity in English writing between the start and the end of the trial teaching period. The participating students demonstrated a significant improvement in the specific dimensions about the accuracy of grammar use and the correctness of spelling and punctuation. From the questionnaire survey at the end of the trial teaching, around 80% of the participating students had positive perceptions toward the flow and support of the peer-assessment and self-editing tasks in the designed technology-mediated pedagogy. Over 75% of the participating students considered the designed technology-mediated pedagogy effective to foster them to improve English writing performance and consolidate English language knowledge. The student respondents in the focus group discussions all recognized the potential of the designed technology-mediated pedagogy, although some students less affirmed the ease of feedback-provision in peer-assessment tasks and the impact of peer-assessment tasks on learning interest. The designed technology-mediated pedagogy was considered capable of

enhancing students' motivation to engage in ESL/EFL writing tasks seriously, as well as strengthening their responsibility to support the peers on better learning.

This case study empirically affirms the feasible process and promising effectiveness of the designed technology-mediated pedagogy for ESL/EFL writing curriculum at the senior elementary school level. The results of this case study show that, when Grade 4 students are guided to pay attention to the specific language knowledge involved in individual writing tasks, the young students are capable of identifying and rectifying the major language errors, in particular the ones related to grammar, spelling and punctuation, in the relevant English writing compositions. The technological support in the designed pedagogy, especially the one from MS Word Processor, was observed helpful to increase students' confidence to identify and rectify the language errors in their writing compositions. This case study shows that the integration of Edmodo and MS Word Processor into peer-assessment and self-editing tasks in ESL/EFL writing classrooms has the potential to stimulate Grade 4 students to develop an awareness of accurate grammar use and appropriate language expression in ESL/EFL writing tasks. This in turn can lead the young ESL/EFL students to actively reflect on their English writing performance and thus significantly improving their English writing competence.

Chapter 5: Case Study 2 in a CMI School at the End of Grade 4 Curriculum

This chapter will report on the profile of the partner school and participating students; the arrangement of the trial teaching schedule and lesson details; and the results of the trial implementation of the designed pedagogy in Case Study 2. A summary of this case study will conclude this chapter.

5.1 Case Profile

The partner school in Case Study 2 is a co-educational school with a growing concern on e-Learning promotion in recent years. This second partner school is also a Chinese-medium (CMI) school, in which the medium of instruction for the majority of school curriculum is Chinese language except the subject of English Language. The partner school selected one Grade 4 class for Case Study 2. The selected Grade 4 class had a total of 28 students, with 13 male students and 15 female students whose average age was 9.36, for the trial teaching (see Table 5.1).

Table 5.1. Demographic data on the participating students of Case Study 2.

Issue	**Details in Case Study 2**
Grade	4
Number of students	28
Average age	9.36
Gender (Male : Female)	13 M : 15 F

According to the questionnaire survey on students' background information (please refer to Appendix C Question 1 to Question 7), all the participating students had experience in

using MS Word Processor for daily learning purposes before the trial teaching, but none in using Edmodo. After the start of this study, at least 90% of the participating students used Edmodo (90%) and MS Word Processor (96%) for learning within two hours every day on average.

As for their proficiency in the use of MS Word Processor prior to this study, more than 90% of the participating students indicated that they mastered the basic functions such as changing text color (96%) and cutting, copying and pasting text (96%). Meanwhile, the majority of the participating students at that time felt unfamiliar with the advanced functions of MS Word Processor, such as using grammar-check (50%) and changes-tracker (54%).

With regard to the prior experience in peer-assessment and self-editing tasks in ESL/EFL writing process, more than half of the participating students had no experience in peer-assessment tasks (54%) and self-editing tasks (64%) in normal ESL/EFL writing lessons, prior to this study. In addition, around three quarters of the participating students indicated that the use of MS Word Processor for doing peer-assessment tasks (79%) and self-editing tasks (71%) in ESL/EFL writing process was new to them.

5.2 Research Arrangement

The trial teaching in Case Study 2 was conducted across 7 sessions in 7 school days, of each session lasted for 40 minutes. The first session was conducted in the general classroom of the selected Grade 4 class for the paper-and-pencil-based research preparation. The other

six sessions were conducted in the computer room of the partner school, in which each student was provided with a desktop computer for the computer-required trial teaching activities. The thesis author was responsible for the research and instructional activities in each trial teaching session, with details as shown in Table 5.2.

Table 5.2. Arrangement of the 7 trial teaching sessions in Case Study 2.

Session	Length (min)	Activities
1	40	In-class Writing
2	40	Training (1): MS Word Processor & Edmodo
3	40	Training (2): Peer-assessment & Self-editing
4	40	Peer-assessment (1)
5	40	Peer-assessment (2)
6	40	Whole-class Discussion
7	40	Self-editing
Total	*280 min (4 hr 40 min)*	

Session 1: In-class Writing. The students were arranged for a creative writing task, in which they rewrote the story of "The Frog Prince" in 60 words or more. The students' writing compositions were then digitalized by the thesis author, followed by a double-checking verbatim, for use in the writing unit.

Session 2 and Session 3: Student Training. The students were provided with a two-part training in the trial teaching. The first part was about the technical operation and application scenarios about the use of MS Word Processor (Word 2010 version as the school adopted) and Edmodo in the ESL/EFL writing classroom. The second part was about the general process and notice points of peer-assessment and self-editing tasks in the ESL/EFL writing

classroom.

Session 4 and Session 5: Peer-assessment. Each student individually provided feedback on the assigned two writing compositions produced by two classmates, on a double-blind basis, according to the peer-assessment scheme for this case study. The students used Edmodo for the access to and MS Word Processor for the editing of the related two digitalized files of writing compositions.

Session 6: Whole-class Discussion. The instructor discussed a number of typical writing errors in students' writing compositions in the targeted writing task, in order to stimulate students' reflection on their follow-ups in the self-editing task.

Session 7: Self-editing. Each student individually self-edited his/her own primary writing composition in the targeted writing task, based on the feedback from the two classmates. Each student used Edmodo for accessing the digitalized files of two classmates' peer-assessment forms; and MS Word Processor for editing the digitalized file of his/her own primary writing composition.

After the 7-session trial teaching, all the participating students were asked to complete a self-administered questionnaire in around 20 minutes to express their perception of the designed technology-mediated pedagogy for the ESL/EFL writing classroom. In addition, two groups of students, of each consisted of six students, were further selected on a random basis for the semi-structured focus group discussion. Each group of selected students was

asked to further provide thorough opinions on the designed technology-mediated pedagogy in around 20 minutes, according to the discussion guide in line with the design of the survey questionnaire.

As mentioned, the technological use of Edmodo and MS Word Processor was implemented in the peer-assessment tasks in Session 4 and Session 5; and the self-editing task in Session 7, respectively. As self-reported in the questionnaire survey at the end of the trial teaching period, when completing the peer-assessment and self-editing tasks in the writing unit, the participating students in Case Study 2 used the function of changes-tracker most (93%); secondly, the function of changing text color (57%); and thirdly, the function of highlighter (54%). More than half of the participating students tried to use the advanced functions that were new to them after the training sessions.

5.3 Research Results

5.3.1 Students' Overall Achievements under the Designed Pedagogy

The designed technology-mediated pedagogy was found to have considerably improved the participating students' writing performance in Case Study 2. From the content analysis that evaluated students' writing compositions with the four-area scoring rubric (see Appendix B), the participating students had a statistically significant increase in the overall scores of writing compositions between the start and the end of the trial teaching period (see Table 5.3). Specifically, the score increases in the areas of "Grammar use", "Spelling and punctuation"

and "Sentence fluency" were statistically significant. These results reveal that the designed technology-mediated pedagogy could support students on enhancing their English writing quality, especially for enhancing their capability to write in correct grammar, spell words correctly and use punctuation marks correctly, as well as increasing the variety of phrasal- and/or sentential-patterns.

Table 5.3. Scores of students' writing compositions before and after the trial teaching in Case Study 2.

		Before trial teaching (N = 28)		**After trial teaching (N = 28)**		***t*-test**
		Mean	**(S.D.)**	**Mean**	**(S.D.)**	
(A) Grammar Accuracy	***(max. mark = 10)***	***6.11***	***(1.71)***	***7.89***	***(1.85)***	***5.68****
(A-1) Grammar use	*(max. mark = 5)*	2.79	(1.07)	3.71	(1.18)	4.67***
(A-2) Spelling and punctuation	*(max. mark = 5)*	3.32	(1.09)	4.18	(0.95)	4.50***
(B) Language Expression	***(max. mark = 10)***	***6.96***	***(1.40)***	***7.25***	***(1.60)***	***2.83****
(B-1) Word choice	*(max. mark = 5)*	3.79	(0.88)	3.82	(0.91)	1.00
(B-2) Sentence fluency	*(max. mark = 5)*	3.18	(0.82)	3.43	(1.00)	2.55*
Overall	**(max. mark = 20)**	***13.07***	***(2.64)***	***15.32***	***(3.10)***	***5.67****

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

The positive results of syntactic maturity measurement of students' writing compositions echo with such score increase among the participating students. From the content analysis that measured the syntactic maturity of writing compositions, the participating students made a statistically significant increase in the number of clauses and T-units, respectively, in their writing compositions after the trial teaching; although there was no such increase in the numbers of words and sentences (see Table 5.4). The increase in the number of clauses and T-units led the students to demonstrate an increase in all the two ratios of syntactic

measurements, especially the statistically significant increase in the ratio of mean T-units per sentence (see Table 5.5 for examples of syntactic unit increase in students' writing compositions). The increases in the counts of syntactic units and the ratios of syntactic measurements signify students' development of syntactic complexity, of which the students had a higher tendency to add a subordinate clause to a sentence and add other T-units on top of the first one in each sentence. These results reveal the potential of the designed technology-mediated pedagogy to enhance students' ability in writing complex sentence in English writing compositions.

Table 5.4. Counts of syntactic units and ratios of syntactic measurements of students' writing compositions before and after the trial teaching in Case Study 2.

Counts of Syntactic Units

	Number of Words [W]			***Number of Clauses [C]***			***Number of T-units [T]***			***Number of Sentences [S]***		
	Pre-	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***
Mean	99.10	98.79	-0.58	20.50	22.50	3.23**	14.71	15.43	2.39*	12.32	12.21	-1.00
(S.D.)	(33.14)	(33.55)		(7.02)	(8.58)		(6.50)	(6.44)		(5.88)	(5.84)	
Max.	194	191		38	43		33	34		33	33	
Min.	57	58		9	9		4	7		4	4	

Ratios of Syntactic Measurements

Mean clauses per T-unit [C/T] ***(Subordinate Clause Index - SCI)***			***Mean T-units per Sentence [T/S]*** ***(Main Clause Coordination Index- MCCI)***		
Pre-	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***
1.47	1.48	0.88	1.25	1.33	2.32*

* $p < 0.05$ ** $p < 0.01$

Table 5.5. Examples of syntactic unit increase in students' writing compositions in Case Study 2.

Example (A): 6 Words & 2 Clauses & 2 T-units	
Original	The frog change the prince, the princess so surprised. And the princess kiss the prince a lot of time. The end. *[Word = 21 ; Clause = 2 ; T-unit = 2 ; Sentence = 3]*
Self-edited	The frog changed into a prince, the princess was very surprised. And the princess kissed the prince a lot of times. At last, they went home happily. *[Word = 27 ; Clause = 4 ; T-unit = 4 ; Sentence = 3]*
Remark	The student added the verb "was" in the originally ill-structured coordinate clause in the first sentence. He also replaced the originally third and ill-structured sentence with a new simple sentence for a complete story-closing. These revisions led to an increase in 6 words, 2 clauses and 2 T-units in the text.
Example (B): Increasing 1 Clause & 1 T-unit	
Original	She said 'Ha! I am Gigi, Tau Wing Ci.' The frog said 'Kiss me!' 'You go to die!' Suddenly, Gigi droped down. And kissed. *[Words = 24 ; Clauses = 6 ; T-units = 4 ; Sentences = 5]*
Self-edited	She said 'Ha! I am Gigi, Tau Wing Ci.' The frog said 'Kiss me!' 'You go to die!' Gigi replied. Suddenly, Gigi dropped down and kissed the frog. *[Words = 28 ; Clauses = 7 ; T-units = 5 ; Sentences = 4]*
Remark	The student added a subordinate clause in the end of the third sentence to add information on the speaker of the utterance. He also combined the originally fourth simple sentence and the originally fifth ill-structured sentence for one compound sentence. These revisions led to an increase in 1 clause and 1 T-unit in the text.

The abovementioned results indicate that the designed technology-mediated pedagogy could considerably foster participating students' achievements of grammar accuracy and language expression in the ESL/EFL writing task. The participating students made a significant improvement in the overall quality of English writing compositions. Additionally, the students had a significant enhancement of syntactic maturity of English writing compositions. The coming sub-sections are going to reveal how the peer-assessment and self-editing processes in the designed technology-mediated pedagogy contributed to the abovementioned results.

5.3.2 The Characteristics of Students' Peer-assessment Feedback Provision

From the content analysis of students' completed peer-assessment forms on the social learning platform Edmodo, all of the participating students in Case Study 2 were able to provide feedback in the peer-assessment tasks. From students' self-reporting in the questionnaire survey at the end of the trial teaching period, three quarters of the participating students completed a peer-assessment task within 15 minutes. More than half of the participating students considered the advanced functions of MS Word Processor were useful for supporting their peer-assessment tasks in the trial teaching. The participating students pointed out that the function of changes-tracker was most useful (89%) in the peer-assessment tasks; the function of highlighter came secondly important (57%) and the functions of cutting, copying and pasting text followed (54%).

A total of 340 feedback items were identified among all pieces of the peer-assessed writing compositions in Case Study 2. The number of feedback items per peer-assessed writing composition ranged from 1 to 22, with 7.55 feedback items on average (S.D. = 4.98). The participating students were found to provide feedback in two major forms, namely alterations and suggestions. No feedback item in the forms of evaluation and clarification was found. As shown in Table 5.6, more than 70% of the feedback items were alterations (72.9%), of which students provided specific changes on the under-assessment writing compositions. The students mainly adopted three ways to inform the peer-assessees about the specific

changes made, namely (1) enabling the changes-tracker function for a direct display of markups in the text file; (2) amending the text file directly and then changing the text color of the amendments for markups; and (3) amending the text file directly and then using the highlighter function to mark the amendments. The remaining 27.1% of the feedback items were suggestions, of which students pointed out the direction for changes for the under-assessment writing compositions. The students either highlighted or changed the color of the text which required further revision.

Table 5.6. Feedback provision among students in the peer-assessment tasks in Case Study 2.

	Surface copy-editing						**Content meaning enhancement**				**Sub-total**	
	Grammar		**Spelling**		**Punctuation**		**Idea presentation**		**Text organization**			
	N	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**
Alterations	94	(27.6)	60	(17.7)	33	(9.7)	58	(17.0)	3	(0.9)	248	(72.9)
Suggestions	40	(11.8)	33	(9.7)	13	(3.8)	6	(1.8)	0	(0.0)	92	(27.1)
Total	*134*	*(39.4)*	*93*	*(27.4)*	*46*	*(13.5)*	*64*	*(18.8)*	*3*	*(0.9)*	*340*	*(100.0)*

Table 5.6 shows that the students focused on providing alterations for correcting grammar use (27.6%), alterations for correcting misspellings (17.7%), and alterations for improving idea presentation (17.0%). The feedback items provided by the students addressed the five areas under the two main intentions—surface copy-editing and content meaning enhancement—as described in sub-section 3.3.2. Examples of students' peer-assessment feedback items for surface copy-editing and content meaning enhancement can be found in Table 5.7 and Table 5.8, respectively.

Firstly, the majority of feedback items (80.3%) had the intention for surface copy-editing, which drew attention to the accurate use of grammar (39.4%), spelling (27.4%) and punctuation (13.5%) in English writing. As the examples shown in Table 5.7, students' feedback concerning grammar use focused on the errors of tense use (e.g., the consistent use of past tenses in the writing unit in this case study); subject-verb agreement (i.e., the correct alignment of singular vs plural forms); and pronoun use (e.g., the correct use of subject pronouns and object pronouns as well as the proper use of personal pronouns and possessive determiners). The feedback regarding punctuation was to keep the consistency in starting sentences with capital letters as well as ending sentences in different sentence forms with correct punctuation marks. Students' feedback on spelling was to correct the misspelled words, including the occurrence of misusing homonyms, in the under-assessment writing compositions.

Secondly, around one-fifth of feedback items (19.7%) had the intention for content meaning enhancement, which drew attention to improving idea presentation (18.8%) and text organization (0.9%) for a better clarity in English writing. As the examples shown in Table 5.8, students' feedback with respect to idea presentation were to add, substitute and delete words or sentences in the under-assessment writing compositions without changing the overall text meaning for better clarity. Students' feedback on text organization was to replace conjunctions and/or move text for enhancing sentence fluency of the under-assessment

writing compositions.

Table 5.7. Examples of students' peer-assessment feedback items for surface copy-editing in Case Study 2.

Category	Examples of students' feedback items
Grammar	***Feedback in the form of "Alternations"*** ● The frog ~~feel~~ felt very happy. *[Remark: The student used changes-tracker function for an alternation to correct the present-tense verb "feel" to the past-tense verb "felt" in story-writing.]* ● The Prince kissed the frog. *[Remark: The student used changes-tracker function for an alternation to correct the present-tense verb "kiss" to the past-tense verb "kissed" in story-writing.]*
	Feedback in the form of "Suggestions" ● Then it cry and said … *[Remark: The student used text-color change function to indicate the need to correct the present-tense verb "cry" in the text emphasizing the use of past tenses.]* ● The beautiful princess saw the frog was very cute so she kiss it. *[Remark: The student used highlighter function to indicate the need to correct the present-tense verb "kiss" in the text emphasizing the use of past tenses.]*
Spelling	***Feedback in the form of "Alternations"*** ● It is her ~~ture~~ true love. *[Remark: The student used changes-tracker function for an alternation to correct the typo from "ture" to "true".]* ● She ~~want~~ went to the garden and the pond. *[Remark: The student used changes-tracker function for an alternation for the typo-correction as the past-tense verb form "went" of the main verb in the sentence.]*
	Feedback in the form of "Suggestions" ● But she is juse 3 years old. *[Remark: The student made a suggestion, in differently-colored text, on the need to correct the typo from "juse" to "just" for the correct use of adverb of degree.]* ● The princess saw the frog was sad; and telk with the frog. *[Remark: The student used highlighter function to indicate the need of typo-correction for the past-tense form of the verb "talked" in the sentence.]*
Punctuation	***Feedback in the form of "Alternations"*** ● Can you kiss me~~.~~? *[Remark: The student used changes-tracker function for an alternation to replace the period with a question mark to end the interrogative sentence.]* ● I am prince but ~~Now~~ now I change the frog. *[Remark: The student used changes-tracker function for an alternation to un-capitalize the adverb "now" which was not the starting word of a sentence.]*
	Feedback in the form of "Suggestions" ● At last, the beautiful princess live with the young prince happily but The princess … *[Remark: The student used highlighter function to indicate the need to un-capitalize the definite article "the" which was not the starting word of a sentence.]* ● Who can fight with me! *[Remark: The student changed the color of the exclamation mark to indicate the need to change it to a question mark for ending an interrogative sentence.]*

Table 5.8. Examples of students' peer-assessment feedback items for content meaning enhancement in Case Study 2.

Category	Examples of students' feedback items
Idea presentation	***Feedback in the form of "Alternations"*** ● The *[princess was]* very surprised the prince *[was]* in the lilypad. The princess *[was]* very happy too. *[Remark: The student used changes-tracker function for an alternation to add the adverb "too" at the end of the second sentence to indicate the princess' dual feeling of "happiness" and "surprise" as described in the text.]* ● … the princess *[kissed]* the prince a lot of times. At last, they went home happily. ~~The end~~ *[Remark: The student used changes-tracker function for an alternation to replace the phrase "The end" with the sentence "At last, they went home happily" for a complete ending of the story.]*
	Feedback in the form of "Suggestions" ● The princess *[was changed]* the frog. In the END. *[Remark: The student changed the color of the final ill-structured sentence "In the END" in the text to indicate the need to extend this final sentence for a complete ending of the story.]* ● Suddenly, the frog *[changed]* to a young prince. However everyone felt surprised. *[Remark: The student used highlighter function to indicate the need to reconsider the conjunction used for the sentence elaborating people's feeling of the change of the frog.]*
Text organization	***Feedback in the form of "Alternations"*** ● At last ~~Suddenly~~, the prince married the princess. They had a happy ending. *[Remark: The student used changes-tracker function for an alternation to replace "Suddenly" with "At last" for the concluding sentences of the text.]* ● And they ~~was happy to go home~~ went home happily. *[Remark: The student used changes-tracker function for an alternation to rephrase the predicate for a better sentence fluency.]*
	Feedback in the form of "Suggestions" (N.A.)

In summary, the participating Grade 4 students in Case Study 2 under the designed technology-mediated pedagogy could complete the peer-assessment tasks on their own in line with the assessment criteria delineated in the tailored peer-assessment form. With regard to the type of peer comments, the majority of the participating students in Case Study 2 intended to give peer comments in the form of alterations to directly provide specific changes on the under-assessment writing compositions. With respect to the depth of peer comments, the

majority of the participating students intended to give peer comments for the surface copy-editing of grammatical and spelling mistakes, as well as for the content meaning enhancement of idea presentation in the under-assessment writing compositions. These results reveal that the participating students in Case Study 2 were willing and confident to strike for comprehensive support on their peers to improve the grammar accuracy and language expression in the English writing products.

5.3.3 The Characteristics of Students' Self-editing Revision-making

From the content analysis of students' final revision-tracked writing files in the MS Word format, the participating students in Case Study 2 were able to self-edit their own writing products in the self-editing task. Twenty-three participating students (82.1%) attempted to make revisions in the self-editing task. From the self-reporting through the student questionnaire survey at the end of the trial teaching period, around 80% of the participating students (79%) completed the self-editing task within 15 minutes. More than half of the participating students considered the advanced functions of MS Word Processor were useful for supporting their self-editing task. The participating students considered that the function of changes-tracker was most useful (86%) in the self-editing tasks; the function of highlighter came secondly important (57%) and the function of cutting, copying and pasting text followed (54%).

A total of 129 revision items were identified among the 23 self-edited writing

compositions. The number of revision items per self-edited writing composition ranged from 1 to 16, with 5.86 revision items on average (S.D. = 3.58). The students were found to have made two major types of self-revisions, namely form-edits and content-edits. As shown in Table 5.9, more than 70% of the revision items were form-edits (73.6%), of which students focused on editing the use of grammar (35.7%), spelling (23.3%) and punctuation (14.6%) in their original writing compositions. In line with their experience in peer-assessment feedback provision, students' revisions concerning grammar use focused on the errors of tense use (e.g., the consistent use of past tenses in the writing unit in this case study); subject-verb agreement (i.e., the correct alignment of singular vs plural forms); and pronoun use (e.g., the correct use of subject pronouns and object pronouns as well as the proper use of personal pronouns and possessive determiners). The revision items on spelling were to correct the misspelled words, including the occurrence of misusing homonyms, in the self-edited compositions. The revision items regarding punctuation were to keep the consistency in starting sentences with capital letters as well as ending sentences in different sentence forms with correct punctuation marks.

The remaining 26.4% of the revision items were content-edits, of which students attempted to improve the clarity of content expression through deleting duplicate and/or ill-structured text (11.6%); substituting existing text (7.0%); adding new text for better clarity (7.0%); and rearranging existing text (0.8%). Examples of students' self-revisions made in

the self-editing task can be found in Table 5.10.

Table 5.9. Self-revisions among students in the self-editing task in Case Study 2.

Types of self-revisions		**Number**	**(%)**
Form-edits	Grammar	46	(35.7)
	Spelling	30	(23.3)
	Punctuation	19	(14.6)
	Sub-total	95	(73.6)
Content-edits	Deletion	15	(11.6)
	Substitution	9	(7.0)
	Addition	9	(7.0)
	Rearrangement	1	(0.8)
	Sub-total	34	(26.4)
	Total	*129*	*(100.0)*

Table 5.10. Examples of students' self-editing revision items in Case Study 2.

Types of self-revisions		Examples of students' self-revisions
Form-edits	Grammar	● She ~~kiss~~kissed the frog. *[Remark: The student corrected the present-tense verb "kiss" to the past-tense verb "kissed" in story-writing.]* ● The frog ~~was~~ saw the tree. *[Remark: The student deleted the redundant auxiliary verb "was" for the past-tense verb "saw" in active voice in the sentence.]*
	Spelling	● It is her ~~ture~~true love. *[Remark: The student corrected the typo "ture" to "true".]* ● The Princess ~~thinked~~thought he was very young, smart and brave. *[Remark: The student corrected the spelling "thought" instead of "thinked" for the correct use of the past-tense form of the verb "think".]*
	Punctuation	● 'When can I had a girl friend~~.~~?' *[Remark: The student replaced the period with a question mark to end the interrogative when-sentence.]* ● 'I am prince but ~~Now~~now I change to the frog.' *[Remark: The student un-capitalized the adverb "now", which was not the starting word of the sentence.]*
Content-edits	Deletion	● A princess walked in front of the ~~the~~ frog. *[Remark: The student removed the definite article "the" repeated before the noun "frog" in the sentence.]* ● He called the princess to kiss him but she didn't want to kiss him. Then the prince cried ~~louder and louder~~ and turned to *[be]* disappeared. *[Remark: The student removed the words "louder and louder" to keep a precise description of the prince's act of crying.]*
	Substitution	● One day, a frog was sitting on a lilypad. Its name is ~~frogking~~frog king. *[Remark: The student replaced the phrase "frogking" to "frog king" for the intended clarity of the main character in the story.]* ● The frog ~~think~~thanked and ~~think~~thanked. *[Remark: The student replaced the verbs "think" to "thanked" for accurately presenting the meaning about the frog's thanking action.]*
	Addition	● The frog said 'Kiss me!''You go to die!' Gigi replied. Suddenly, Gigi dropped down. *[Remark: The student inserted the clause "Gigi replied" to specify the speaker identity for the preceding utterance.]* ● The princess was very surprised the prince was in the lilypad. The princess was very happy too. *[Remark: The student inserted the adverb "too" at the end of the second sentence to express the princess' dual feeling of "happiness" and "surprise".]*
	Rearrangement	● The princess said, "I was sad because nobody play with me". ~~The frog said~~ "You just kiss me, then somebody will play with you". The frog said. *[Remark: The student moves the clause "The frog said" at the end of the second utterance for the intended sentence fluency.]*

In summary, the Grade 4 participating students in Case Study 2 under the designed technology-mediated pedagogy could complete the self-editing task on their own based on

the peer comments given in the completed peer-assessment form. The participating students intended to make form-edits to revise their writing products through conventional copy-editing operations in grammar, spelling and punctuation.

5.3.4 Students' Perceptions toward the Designed Pedagogy

From the questionnaire survey and focus group discussions with the participating students at the end of the writing unit, the participating students in Case Study 2 in general had a positive perception of the designed technology-mediated pedagogy.

5.3.4.1 Students' Overall Perception of the Designed Technology-mediated Pedagogy

As shown in Table 5.11, nearly 80% of the students asserted that the teaching flow (Mean = 4.11 ; S.D. = 1.03) and learning materials in the designed pedagogy were appropriately arranged (Mean = 4.11 ; S.D. = 0.74). 75% of the students agreed or very agreed that the designed pedagogy increased their enjoyment (Mean = 4.14 ; S.D. = 0.80) and their sense of peer-support (Mean = 4.04 ; S.D. = 1.11) in English learning under the designed pedagogy. Around 70% of the students also thought that the designed pedagogy increased their motivation in English learning (Mean = 4.14 ; S.D. = 1.01); and it should be continued in normal ESL/EFL writing lessons (Mean = 4.07 ; S.D. = 0.81).

Table 5.11. The overall perception among the participating students in Case Study 2 toward the designed technology-mediated pedagogy.

Item	Mean *	(S.D.)
I enjoy more the process of English writing after learning under the designed pedagogy.	4.14	(0.80)
The designed pedagogy could motivate me to become active in learning English language.	4.14	(1.01)
I was satisfied with the materials and arrangements in the designed pedagogy.	4.11	(0.74)
The flow of designed pedagogy was appropriate.	4.11	(1.03)
The designed pedagogy should be continued in normal English writing lessons.	4.07	(0.81)
The designed pedagogy made me feel responsible for other peers' learning.	4.04	(1.11)
The designed pedagogy could motivate me to become serious in my English writing tasks.	4.00	(0.98)
The designed pedagogy could motivate me to reflect more on my English writing performance.	3.93	(1.06)
The designed pedagogy could increase my interest in learning English language.	3.93	(1.12)
The designed pedagogy made me feel responsible for my own learning.	3.89	(1.07)
The designed pedagogy helped me consolidate English language knowledge.	3.89	(1.10)
I can perform better in English writing after learning under the designed pedagogy.	3.89	(1.20)
I become more confident of writing in English after learning under the designed pedagogy.	3.86	(1.15)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The above questionnaire survey results were triangulated with the feedback from the participating students in focus group discussions (see Table 5.12). Nearly half of the student respondents (41.68%) expressed their strong satisfaction with the materials and arrangements in the designed technology-mediated pedagogy. A quarter of the student respondents were most impressed that the designed technology-mediated pedagogy increased their enjoyment in both English writing and English learning.

Table 5.12. Students' overall feedback from focus group discussions in Case Study 2 on the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the designed pedagogy	- The students agreed that the three-component technology-mediated pedagogy was appropriately designed. They enjoyed and felt satisfied with this new learning experience in ESL/EFL writing curriculum.
Learning benefits from the designed pedagogy	- The students asserted the effect of the designed pedagogy to engage them in the draft-review-edit process in English writing for an effective consolidation and active reflection of English language knowledge.

The student respondents stressed that designed technology-mediated pedagogy was appropriately designed. They were satisfied with this new experience in ESL/EFL writing lessons. The student respondents pointed out that the three-component pedagogical flow could progressively engage them in the review-discuss-edit process in English writing and self-reflection on English learning. The student respondents further added that the designed technology-mediated pedagogy promoted them to actively learn, reflect on and consolidate English language knowledge. They preferred to continue this learning process for an active learning and effective consolidation of language knowledge for English writing.

5.3.4.2 Students' Specific Perception of Pedagogical Arrangements of Peer-assessment and Self-editing

The participating students in Case Study 2 positively perceived the pedagogical arrangements of peer-assessment and self-editing tasks in the ESL/EFL writing classroom. The questionnaire survey (see Table 5.13 and Table 5.14) showed that 71% of the participating students asserted the support of peer-assessment process (Mean = 3.96 ;

S.D. = 1.10) and self-editing process (Mean = 4.07 ; S.D. = 1.15) on improving their English writing performance. It is noteworthy that the participating students were especially satisfied with their ability to think critically (71% ; Mean = 3.93 ; S.D. = 0.94) and to provide accurate and sufficient feedback to peers (64% ; Mean = 3.89 ; S.D. = 1.07) in peer-assessment tasks. The students were also found to especially agree that the self-editing tasks increased their interest in English writing (68% ; Mean = 4.00 ; S.D. = 1.19); and benefited their overall learning of English language (71% ; Mean = 3.93 ; S.D. = 1.18).

Table 5.13. The specific perception among the participating students in Case Study 2 toward the peer-assessment task in the designed technology-mediated pedagogy.

Item	**Mean ***	**(S.D.)**
The peer-assessment process could help me improve my English writing.	3.96	(1.10)
I could think critically to give feedback in peer-assessment tasks.	3.93	(0.94)
I could provide accurate and sufficient feedback to peers in peer-assessment tasks.	3.89	(1.07)
The peer-assessment process could increase my interest in English writing.	3.89	(1.17)
I liked to give feedback in peer-assessment tasks.	3.86	(1.04)
I was confident of giving feedback in peer-assessment tasks.	3.86	(1.11)
It is necessary for me to know how to peer-assess my classmates' English writing compositions.	3.86	(1.11)
I was benefited from the peer-assessment process for learning English language.	3.82	(1.16)
It was easy to give feedback in peer-assessment tasks.	3.75	(1.04)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

Table 5.14. The specific perception among the participating students in Case Study 2 toward the self-editing task in the designed technology-mediated pedagogy.

Item	**Mean ***	**(S.D.)**
The self-editing process could help me improve my English writing.	4.07	(1.15)
The self-editing process could increase my interest in English writing.	4.00	(1.19)
I was benefited from the self-editing process for learning English language.	3.93	(1.18)
It is necessary for me to know how to self-edit my own English writing compositions.	3.89	(1.07)
I liked to take feedback and then make revisions in self-editing tasks.	3.86	(1.30)
I could think critically to make revisions in self-editing tasks.	3.82	(1.19)
The feedback given by peers was accurate and sufficient for my self-editing task.	3.75	(1.17)
I felt comfortable to take feedback for making revisions in peer-assessment tasks.	3.75	(1.29)
It was easy to interpret feedback and then make revisions in self-editing tasks.	3.68	(1.06)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions further explains the above questionnaire survey results (see Table 5.15 and Table 5.16). The student respondents in general considered the peer-assessment and self-editing tasks in the designed technology-mediated pedagogy were very valuable, as these tasks stimulated them to reciprocally help peers and themselves identify and improve weaknesses in ESL/EFL writing tasks.

Table 5.15 summarizes students' overall feedback with regard to the peer-assessment task in the designed technology-mediated pedagogy. Half of the student respondents were most impressed by the benefits of the peer-assessment tasks to improve English writing and to advance English language learning. One-third of the student respondents indicated their strong confidence to the technology-supported peer-assessment tasks in ESL/EFL writing lessons.

Table 5.15. Students' overall feedback from focus group discussions in Case Study 2 on the peer-assessment task in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of peer-assessment task	- The students valued the meaningful and important opportunities in the peer-assessment tasks to apply their own language knowledge to help peers improve their writing products. - The students enjoyed the new learning experience as a "Little Teacher" to use teachers' marking scheme for the challenging yet interesting tasks on spotting language errors appeared in peers' writing products.
Learning benefits from peer-assessment task	- The students agreed that the peer-assessment tasks could entail a reciprocal enhancement among themselves and their peers in English writing performance and English language learning. - The students pointed out that they could provide peers with revision suggestions for improving the accuracy in grammar-use and word-spelling in ESL/EFL writing tasks. - The students indicated that they could learn more about English vocabulary (such as greeting words) and sentence patterns (such as rhetorical questions) through assessing peers' writing products. - The students denoted that the process of peer-assessment stimulated them to reflect more on their own language mistakes for future error-prevention, and so improve their own writing performance.

Many student respondents indicated that they enjoyed their role as "Little Teachers" in assessing peers' writing compositions and spotting language errors appeared in peers' writing compositions, which was a new learning experience in the conventional ESL/EFL writing curriculum. The students pointed out that after identifying the writing errors in peers' writing compositions, they could easily learn about how to correctly use grammar and spell words in the targeted ESL/EFL writing task. The students stated that this fostered them to reflect on their weaknesses in English writing, and to avoid making the same language errors in future ESL/EFL writing tasks.

Table 5.16 summarizes students' overall feedback with regard to the self-editing task in the designed technology-mediated pedagogy. One-third of the student respondents expressed their strong confidence to the technology-supported self-editing task in ESL/EFL writing lessons. A quarter of the student respondents were most impressed that the self-editing task increased their interest in both English writing and English learning. Another quarter of the student respondents were most impressed by the benefits of the self-editing task to improve English writing and thus enhancing English language learning.

Table 5.16. Students' overall feedback from focus group discussions in Case Study 2 on the self-editing task in in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of self-editing task	- The students liked the technology-supported self-editing task, which was new to the conventional ESL/EFL writing curriculum. The students felt easy and interesting to self-edit own writing products.
Learning benefits from self-editing task	- The students agreed that the self-editing task was helpful and important to enhance their confidence and capacity to write in English, as they could correct own writing errors based on peers' revision suggestions. - The students denoted that the self-editing task prompted them to beware of common language mistakes and so to reflect more on their own areas of improvement in English writing.

The student respondents considered the technology-supported self-editing task quite easy and interesting. They liked to use the spelling-check and grammar-check functions of MS Word Processor for this writing activity which was new to conventional ESL/EFL writing curriculum. The student respondents indicated that the self-editing task was helpful and important to enhance their confidence and capacity to write in English, as they could correct

the language errors in their own writing compositions after referring to the revision suggestions made by peers. The student respondents noted that the self-editing task prompted them to reflect on their own areas of improvement and to avoid making the previous language errors in English writing. The student respondents added that they transferred their feedback-provision experience gained from the peer-assessment tasks as an "examination-like feedback-collection" activity in the self-editing task. This promoted them to quickly recognize their common errors and so seriously work on their areas of improvement in English writing.

The student respondents were also asked about their views on two situations. First, a proportion (17.9%) of their classmates did not attempt to make revisions in the self-editing task. The student respondents who had such behavior indicated their relatively low motivation in English learning; and claimed that they needed not to make self-editing revisions as they considered their compositions error-free. The root of this situation may require efforts additional to pedagogical design for a satisfactory handling. Second, a proportion (about one-third) of their classmates in the questionnaire survey less affirmed the ease of feedback-provision in the peer-assessment tasks and the readiness of revision-making in the self-editing task. Some student respondents who had such response in the questionnaire survey, surprisingly, indicated that they actually thought it was not difficult to complete both peer-assessment and self-editing tasks. The student respondents stressed that they were not as

capable as their teachers, and thus unable to easily identify and correct all errors in writing compositions.

5.3.4.3 Students' Specific Perception of Technological Use of Edmodo and MS Word Processor

For the technological use of Edmodo and MS Word Processor in the ESL/EFL writing classroom, the participating students in Case Study 2 highly appreciated the support from these two digital productivity tools on the peer-assessment and self-editing tasks in the designed technology-mediated pedagogy. The majority of the students in the questionnaire survey (see Table 5.17 and Table 5.18) indicated that they liked to use Edmodo (82% ; Mean = 4.29 ; S.D. = 0.86) and MS Word Processor (75% ; Mean = 4.18 ; S.D. = 0.90) in the peer-assessment and self-editing tasks. It is noteworthy that the students impressed most by the improvement of task efficiency brought about by Edmodo, as well as the promotion of learning reflection in English writing brought about by MS Word Processor. Over 80% of the students asserted the ease (82% ; Mean = 4.29 ; S.D. = 0.85) and efficiency (82% ; Mean = 4.32 ; S.D. = 0.77) when using Edmodo to handle peer-assessment tasks. The majority of the students also agreed that the use of MS Word Processor in ESL/EFL writing tasks motivated them to actively reflect on their own weaknesses (86% ; Mean = 4.21 ; S.D. = 0.69) and to actively identify peers' areas of improvement (71% ; Mean = 4.11 ; S.D. = 0.99) in English writing.

Table 5.17. Students' specific perception of the technological use of Edmodo in the designed technology-mediated pedagogy in Case Study 2.

Item	Mean *	(S.D.)
The use of Edmodo could enhance the efficiency of peer-assessment tasks.	4.32	(0.77)
I felt easy to use Edmodo to handle peer-assessment tasks.	4.29	(0.85)
I liked to use Edmodo in peer-assessment tasks.	4.29	(0.86)
It was helpful to use Edmodo for supporting English writing tasks.	4.21	(0.83)
The use of Edmodo could enhance my learning interest in English writing lessons.	4.14	(1.01)
The use of Edmodo could enhance my interaction with peers in English writing tasks.	4.07	(0.98)
I will continue exploring the use of Edmodo for supporting English writing.	4.00	(1.15)
The use of Edmodo could motivate me to actively learn from peers' writing compositions.	3.89	(1.17)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

Table 5.18. Students' specific perception of the technological use of MS Word Processor in the designed technology-mediated pedagogy in Case Study 2.

Item	Mean *	(S.D.)
The use of MS Word Processor in English writing tasks could motivate me to actively reflect on my areas of improvement in English writing.	4.21	(0.69)
I liked to use MS Word Processor in peer-assessment and self-editing tasks.	4.18	(0.90)
The use of MS Word Processor in English writing tasks could motivate me to actively identify peers' areas of improvement in English writing.	4.11	(0.99)
It was helpful to use MS Word Processor for supporting English writing tasks.	4.07	(0.90)
The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks.	3.96	(0.88)
I felt easy to use MS Word Processor to handle peer-assessment and self-editing tasks.	3.93	(0.98)
The use of MS Word Processor could enhance my learning interest in English writing lessons.	3.89	(1.07)
I will continue exploring the use of MS Word Processor for supporting English writing.	3.86	(1.08)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions was in line with the above questionnaire survey results (see Table 5.19 and Table 5.20). The student respondents further acknowledged the positive impact of the technological use of Edmodo and MS Word Processor in the designed pedagogy. They indicated that it was more interesting to use computer for completing ESL/EFL writing tasks in the trial teaching period, which was different from the traditional paper-and-pencil approach in normal ESL/EFL

writing lessons.

Table 5.19 summarizes students' overall feedback with regard to the use of Edmodo in the designed technology-mediated pedagogy. Two-thirds of the student respondents considered the most impressive impact of the use of Edmodo was its support on enhancing their efficiency and interaction in ESL/EFL writing tasks. One-third of the student respondents expressed their strong favor for the use of Edmodo in the designed technology-mediated pedagogy in ESL/EFL writing lessons.

Table 5.19. Students' overall feedback from focus group discussions in Case Study 2 on the use of Edmodo in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the use of Edmodo	- The students felt it was interesting, convenient and useful to use Edmodo in ESL/EFL writing lessons, as they could easily share their writing products when Internet connectivity was available.
Learning benefits from the use of Edmodo	- The students expressed that the use of Edmodo could increase the opportunities of instant peer communication for exchange references or comments, which are lacked in conventional ESL/EFL writing lessons.

Without prior experience in the learning use of Edmodo, all student respondents felt it was interesting, convenient and useful to use Edmodo in ESL/EFL writing activities. The student respondents indicated Edmodo provided them with a platform for conveniently sharing different types of files, and instantly communicating with peers for exchanging ideas. This enabled them to easily share their writing products with the whole class for reference or comment anytime, anywhere when they could access the Internet. The student respondents appreciated that the use of Edmodo could increase the opportunities of instant peer

communication for learning purposes, which are lacked in conventional writing curricular activities.

Table 5.20 summarizes students' overall feedback with regard to the use of MS Word Processor in the designed technology-mediated pedagogy. More than half of the student respondents (58.33%) considered the most impressive impact of the use of MS Word Processor was that it enhanced the efficiency of peer-assessment and self-editing tasks in the writing unit. A quarter of the student respondents expressed their strong confidence to use MS Word Processor to handle peer-assessment and self-editing tasks.

Table 5.20. Students' overall feedback from focus group discussions in Case Study 2 on the use of MS Word Processor in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the use of MS Word Processor	- The students felt convenient and efficient to use the changes-tracker function of MS Word Processor to perform the peer-assessment and self-editing tasks, which were in general tedious and time-consuming in the paper-and-pencil manner.
Learning benefits from the use of MS Word Processor	- The students indicated that the spelling-check and grammar-check functions of MS Word Processor were helpful in supporting them to easily and efficiently identify and correct language errors in the peer-assessment and self-editing tasks.

All student respondents thought that the use of MS Word Processor could absolutely help with their peer-assessment and self-editing tasks in the writing unit. They pointed out that the spelling-check and grammar-check functions could help them to correct language errors easily. The student respondents asserted that the use of MS Word Processor could

increase the efficiency and convenience of peer-assessment and self-editing tasks in this study. They indicated that the changes-tracker function was particularly useful in the ESL/EFL writing tasks, which supported them to conveniently and clearly mark changes in their writing compositions. They valued the extra efficiency brought about by this function, comparing with the tedious annotation work in the traditional paper-and-pencil approach.

5.3.4.4 Students' Specific Perception of the Provision of Digital Devices

The participating students in Case Study 2, unlike their counterparts in Case Study 1 who used own tablet PCs throughout the trial teaching, were arranged by their school to use desktop computers in the school computer room for the writing unit. The questionnaire survey and focus group discussions with these participating students therefore asked about students' learning perception of the provision of digital devices in the trial teaching.

The results of student questionnaire survey (see Table 5.21) show that the participating students agreed that the use of desktop computers in the designed technology-mediated pedagogy was appropriate. The participating students held a neutral stance about the need and effectiveness of introducing the use of tablet PCs in the designed technology-mediated pedagogy. About half of the participating students (46.43%) thought that it would be better to use tablet PCs in the designed pedagogy; whereas around one-third of the student respondents (32.14%) held the opposing stance.

Table 5.21. Students' learning perception of the provision of digital devices.

Item	Mean *	(S.D.)
The use of desktop computers in the designed pedagogy was appropriate.	4.18	(1.33)
I hope to use tablet PCs in the designed pedagogy.	3.54	(1.64)
It would be better to use tablet PCs in the designed pedagogy.	3.50	(1.58)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The related feedback from student focus group discussions provides a clearer picture on the possible reasons for the above questionnaire survey results. Half of the student respondents indicated their preference to use desktop computers in the writing unit; whereas only one-third of the student respondents preferred the use of tablet PCs. For the student respondents who preferred the use of desktop computers, they concerned much that typing via a tablet PC with small screen and virtual keyboard would be more harmful to eye-sight and less convenient for text-entry, comparing with typing via a desktop computer with a keyboard. In contrast, the student respondents who preferred the use of tablet PCs explained that due to their habitual use of tablet PCs in daily pursuits, it would be easier and more convenient for them to use tablet PCs for learning purposes.

The results of the questionnaire survey and focus group discussions as reported in this sub-section 5.3.4 indicate that students in Case Study 2 particularly valued the affective benefits of the designed pedagogy to enhance the enjoyment and satisfaction when learning English writing. The arrangement of the primary composition for the trial teaching in this case study—a creative writing composition purposely produced by each participating student—might be a possible cause of such case-specific perception. The students in Case

Study 2 were arranged for the in-class writing of the primary compositions prior to the three in-class processes of peer-assessment, whole-class discussion and self-editing. A proportion of the students, especially those were less motivated in English learning, initially were indifferent to this preparatory work and so the subsequent trial teaching. When attempting to the learning tasks in the three-component designed pedagogy, the students felt more enjoyable and satisfied in the process of learning ESL/EFL writing, comparing with the conventional learning process in normal ESL/EFL writing lessons. Such learning experience led students to the positive perception toward the designed pedagogy on increasing their enjoyment and satisfaction when learning ESL/EFL writing.

5.4 Case Summary

Case Study 2 implemented a 7-session trial of the designed technology-mediated pedagogy in a Grade 4 class, with 28 students whose average age was 9.36, in a Chinese-medium (CMI) co-educational school in the mid of Grade 4 ESL/EFL curriculum in Hong Kong. All the 28 participating students had no experience in using the social learning platform Edmodo; yet already had experience in using the digital productivity tool MS Word Processor for learning purposes. The pedagogical arrangements of peer-assessment and self-editing tasks in ESL/EFL writing process were new to 54% and 64% of the participating students, respectively, in this case study.

The participating students in this case study gave a total of 28 pieces of creative writing

compositions, with the average length of 99.10 words per writing composition, which rewrote the story of "The Frog Prince". Each participating student was arranged for a three-component pedagogical flow to peer-assess two writing compositions, join a whole-class discussion about noteworthy writing issues, and self-edit own writing composition based on peers' feedback. The social learning platform Edmodo and the word processing productivity tool MS Word Processor were used in the writing unit for supporting students' peer-communication and text-editing in a digital manner.

With the technological support from the two concerning digital productivity tools, the participating students could complete the peer-assessment and self-editing tasks as arranged in the writing unit. In the peer-assessment task, the participating students were able to provide 7.55 feedback items on average per peer-assessed composition. Nearly three quarters of the peer feedback items were given in the form of alterations for directly providing specific changes on the under-assessment writing compositions. Around 80% of the peer feedback items were given for the purpose of surface copy-editing. Such feedback focused on the accurate use of grammar and spelling, as well as the appropriate idea presentation. In the self-editing task, the participating students made 5.86 self-revisions on average per self-edited composition. Nearly three quarters of the self-revisions were form-edits, which focused on editing the use of grammar, spelling and punctuation in the original writing compositions.

From the two-part content analysis on students' overall achievements under the designed technology-mediated pedagogy, the participating students were found to have a statistically significant improvement in the overall writing scores; and enhance the syntactic maturity in English writing between the start and the end of the trial teaching period. The participating students demonstrated a significant improvement in the specific dimensions about the accuracy of grammar use, the correctness of spelling and punctuation, as well as the variety of phrasal- and/or sentential-patterns. The questionnaire survey at the end of the trial teaching found that three quarters of the participating students enjoyed more the process of English writing after learning under the designed pedagogy. Over 70% of the participating students considered the designed technology-mediated pedagogy effective to motivate active learning in the subject of English Language. From the focus group discussions at the end of the trial teaching, the student respondents were well satisfied with the flow of the designed pedagogy, and positively perceived the potential of the designed pedagogy to motivate them to learn seriously and actively, although some students less affirmed the ease of feedback-provision in the peer-assessment tasks and the readiness of revision-making in the self-editing task.

This case study empirically affirms the feasible process and promising effectiveness of the designed technology-mediated pedagogy for ESL/EFL writing curriculum at the senior elementary school level. The results of this case study show that, when Grade 4 students are guided to pay attention to the specific language knowledge involved in individual writing

tasks, the young students are capable of identifying and rectifying the major language errors, in particular the ones related to grammar, spelling and punctuation, in the relevant English writing compositions. The technological support in the designed pedagogy, especially the one from MS Word Processor, was observed helpful to increase students' confidence to identify and rectify the language errors appeared in their writing compositions. This case study shows that the integration of Edmodo and MS Word Processor into peer-assessment and self-editing tasks in ESL/EFL writing classrooms have the potential to stimulate Grade 4 students to develop an awareness of accurate grammar use and appropriate language expression in ESL/EFL writing tasks. This in turn can lead the young ESL/EFL students to actively reflect on their English writing performance and thus significantly improving their English writing competence.

Chapter 6: Case Study 3 in an EMI School at the Start of Grade 5 Curriculum

This chapter will report on the profile of the partner school and participating students; the arrangement of the trial teaching schedule and lesson details; and the results of the trial implementation of the designed pedagogy in Case Study 3. A summary of this case study will conclude this chapter.

6.1 Case Profile

The partner school in Case Study 3 is a single-gender (girls) school with a growing concern on e-Learning promotion in recent years. This third partner school is an English-medium (EMI) school, in which the medium of instruction for the majority of school curriculum is English language. The partner school selected one Grade 5 class for Case Study 3. The selected Grade 5 class had a total of 17 female students whose average age was 9.88 for the trial teaching (see Table 6.1).

Table 6.1. Demographic data on the participating students of Case Study 3.

Issue	**Details in Case Study 3**
Grade	5
Number of students	17
Average age	9.88
Gender (Female)	17 F

According to the questionnaire survey on students' background information (please refer to Appendix C Question 1 to Question 7), all the participating students had experience in using MS Word Processor for daily learning purposes before the trial teaching, but none in

using Edmodo. After the start of this study, at least 90% of the participating students used Edmodo (94%) and MS Word Processor (90%) for learning within two hours every day on average.

As for their proficiency in the use of MS Word Processor prior to this study, more than 80% of the participating students indicated that they mastered the key functions of MS Word Processor, ranging from the basic ones for changing text color (88%) and cutting, copying and pasting text (88%); to the advanced ones of spelling-check (94%), grammar-check (94%) and changes-tracker (82%).

With regard to the prior experience in peer-assessment and self-editing tasks in ESL/EFL writing process, more than three quarters of the participating students already had experience in peer-assessment tasks (76%) and self-editing tasks (82%) in normal ESL/EFL writing lessons, prior to this study. Moreover, 71% of the participating students indicated that the use of MS Word Processor for doing both peer-assessment and self-editing tasks in ESL/EFL writing process was not new to them.

6.2 Research Arrangement

The trial teaching in Case Study 3 was conducted within 9 school days, across five 35-minute sessions with 2 rounds of online assignments. The school-based ESL/EFL writing homework assignment “Report Writing about Olympics (Mascots, Meaning of Torch, Logo, History, Sports Event etc.)” in about 100 words completed by the participating students

served as the primary writing compositions for peer-assessment and self-editing tasks in the trial teaching period. The students' writing compositions were then digitalized by the thesis author, followed by a double-checking verbatim, for use in the writing unit. The thesis author was responsible for the research and instructional activities in each trial teaching session, with details as shown in Table 6.2.

Table 6.2. Arrangement of the 5 trial teaching sessions in Case Study 3.

Session	Length (min)	Activities
1 & 2	70 min	Training (1): MS Word Processor & Edmodo [Computer room]
3	35 min	Training (2): Peer-assessment & Self-editing [Computer room]
Assignment A	(Across 3 school days)	Peer-assessment (2 online assignments)
4 & 5	70 min	Whole-class Discussion [General classroom]
Assignment B	(Across 3 school days)	Self-editing (1 online assignment)
Total	*175 min (2 hr 55 min)*	

Session 1 to Session 3: Student Training. The students were provided with a two-part training for the participation in the trial teaching. The first part was about the technical operation and application scenarios about the use of MS Word Processor (Word 2010 version as the school adopted) and Edmodo in the ESL/EFL writing classroom. The second part was about the general process and notice points of peer-assessment and self-editing tasks in the ESL/EFL writing classroom.

Assignment A: Peer-assessment. Each student individually provided feedback on the assigned two writing compositions produced by two classmates, on a double-blind basis,

according to the peer-assessment scheme for this case study. The students used Edmodo for the access to and MS Word Processor for the editing of the related two digitalized files of writing compositions.

Session 4 and Session 5: Whole-class Discussion. The instructor discussed a number of typical writing errors in students' writing compositions in the targeted writing task, in order to stimulate students' reflection on their follow-ups in the self-editing task.

Assignment B: Self-editing. Each student individually self-edited her own primary writing composition in the targeted writing task, based on the feedback from the two classmates. Each student used Edmodo for accessing the digitalized files of two classmates' peer-assessment forms; and MS Word Processor for editing the digitalized file of her own primary writing composition.

After the 5-session trial teaching, all the participating students were asked to complete a self-administered questionnaire in around 20 minutes to express their perception of the designed technology-mediated pedagogy for the ESL/EFL writing classroom. In addition, two groups of students, of each consisted of six students, were further selected on a random basis for the semi-structured focus group discussion. Each group of selected students was asked to further provide thorough opinions on the designed technology-mediated pedagogy in around 20 minutes, according to the discussion guide in line with the design of the survey questionnaire.

As mentioned, the technological use of Edmodo and MS Word Processor was required in the peer-assessment tasks in the 3-day Assignment A period; and the self-editing task in the 3-day Assignment B period, respectively. As self-reported in the questionnaire survey at the end of the trial teaching period, when completing the peer-assessment and self-editing tasks in the writing unit, the participating students in Case Study 3 used the function of highlighter most (76%); secondly, the functions of changing text color (59%); cutting, copying and pasting text (59%); and spelling-check (59%).

6.3 Research Results

6.3.1 Students' Overall Achievements under the Designed Pedagogy

The designed technology-mediated pedagogy was found to have significantly improved the participating students' writing performance in Case Study 3. From the content analysis that evaluated students' writing compositions with the four-area scoring rubric (see Appendix B), the participating students had a statistically significant increase in the overall scores of writing compositions between the start and the end of the trial teaching period (see Table 6.3). Specifically, the score increases in the areas of "Spelling and punctuation" and "Sentence fluency" were statistically significant. These results reveal that the designed technology-mediated pedagogy could enhance students' English writing quality, especially enhance their capability to spell words correctly and use punctuation marks correctly, as well as increasing the variety of phrasal- and/or sentential-patterns.

Table 6.3. Scores of students' writing compositions before and after the trial teaching in Case Study 3.

		Before trial teaching (N = 17)		After trial teaching (N = 17)		*t*-test
		Mean	**(S.D.)**	**Mean**	**(S.D.)**	
(A) Grammar Accuracy	***(max. mark = 10)***	***6.82***	***(1.67)***	***7.82***	***(1.63)***	***3.37****
(A-1) Grammar use	*(max. mark = 5)*	3.59	(1.12)	3.94	(1.14)	2.07
(A-2) Spelling and punctuation	*(max. mark = 5)*	3.24	(0.91)	3.88	(0.91)	2.68*
(B) Language Expression	***(max. mark = 10)***	***7.53***	***(1.23)***	***7.82***	***(1.33)***	***2.06***
(B-1) Word choice	*(max. mark = 5)*	3.82	(0.64)	3.88	(0.60)	1.00
(B-2) Sentence fluency	*(max. mark = 5)*	3.71	(0.69)	3.94	(0.83)	2.22*
Overall	**(max. mark = 20)**	**14.35**	**(2.18)**	**15.65**	**(2.62)**	**3.80****

* $p < 0.05$ ** $p < 0.01$

The positive results of syntactic maturity measurement of students' writing compositions echo with such score increase among the students. It is noteworthy that students made a statistically significant increase in the number of clauses and the number of T-units, respectively, in their writing compositions after the trial teaching; although there was no such increase in the numbers of words and sentences (see Table 6.4). The increase in the number of clauses and T-units led to an increase in all the two ratios of syntactic measurements among the students; although those ratio increases are not statistically significant (see Table 6.5 for examples of syntactic unit increase in students' writing compositions). The increases in the counts of syntactic units and the ratios of syntactic measurements signify students' development of syntactic complexity, of which the students were able to produce complex sentences more frequently by adding a subordinate clause to a sentence and adding other T-units on top of the first one in each sentence. These results reveal the potential of the

designed pedagogy to enhance students' ability in writing complex sentence in English writing compositions.

Table 6.4. Counts of syntactic units and ratios of syntactic measurements of students' writing compositions before and after the trial teaching in Case Study 3.

Counts of Syntactic Units

	Number of Words [W]			***Number of Clauses [C]***			***Number of T-units [T]***			***Number of Sentences [S]***		
	Pre-	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***
Mean	298.71	299.59	0.68	37.35	39.47	3.65**	25.82	26.41	2.16*	18.53	18.82	1.43
(S.D.)	(161.78)	(159.69)		(19.68)	(19.75)		(13.46)	(13.13)		(8.50)	(8.66)	
Max.	739	736		84	84		57	57		37	38	
Min.	72	73		7	9		5	6		4	4	

Ratios of Syntactic Measurements

Mean clauses per T-unit [C/T] ***(Subordinate Clause Index - SCI)***			***Mean T-units per Sentence [T/S]*** ***(Main Clause Coordination Index- MCCI)***		
Pre-	***Post-***	**t-*test***	***Pre-***	***Post-***	**t-*test***
1.46	1.51	1.53	1.36	1.39	1.06

* $p < 0.05$ ** $p < 0.01$

Table 6.5. Examples of syntactic unit increase in students' writing compositions in Case Study 3.

Example (A): Increasing 1 Word & 1 Clause & 1 T-unit	
Original	Michael Jeffrey Jordan (born February 17, 1963) is fifty-two years old now. Is an American former professional basketball player. *[Word = 19 ; Clause = 1 ; T-unit = 1 ; Sentence = 2]*
Self-edited	Michael Jeffrey Jordan (born February 17, 1963) is fifty-two years old now, who is an American former professional basketball player. *[Word = 20 ; Clause = 2 ; T-unit = 2 ; Sentence = 1]*
Remark	The student used the pronoun "who" to combine the originally first simple sentence and the originally second ill-structured sentence for one complex sentence in turn. This revision led to an increase in 1 word, 1 clause and 1 T-unit in the text.
Example (B): Increasing 1 Word & 1 Clause	
Original	We should always cherish and treasure the friendship that around us. *[Words = 11 ; Clauses = 1 ; T-units = 1 ; Sentences = 1]*
Self-edited	We should always cherish and treasure the friendship that is around us. *[Words = 12 ; Clauses = 2 ; T-units = 1 ; Sentences = 1]*
Remark	The student added the verb "is" for the formation of a properly-structured subordinate clause which modified the immediately preceding noun "friendship". This revision led to an increase in 1 word and 1 clause in the text.

The abovementioned results indicate that the designed technology-mediated pedagogy could considerably facilitate the Grade 5 participating students to achieve grammar accuracy and language expression in the ESL/EFL writing task. The participating students made a significant improvement in the overall quality of English writing compositions. Additionally, the students had a significant enhancement of syntactic maturity of English writing compositions. The coming sub-sections are going to reveal how the peer-assessment and self-editing processes in the designed technology-mediated pedagogy contributed to the abovementioned results.

6.3.2 The Characteristics of Students' Peer-assessment Feedback Provision

From the content analysis of students' completed peer-assessment forms on the social learning platform Edmodo, all of the participating students in Case Study 3 were able to provide feedback in the peer-assessment tasks. From students' self-reporting in the questionnaire survey at the end of the trial teaching period, around 60% of the participating students (59%) completed a peer-assessment task within 15 minutes. More than half of the participating students considered the advanced functions of MS Word Processor useful for supporting their peer-assessment tasks in the trial teaching. The participating students pointed out that the function of changes-tracker was most useful (71%) in the peer-assessment tasks; the function of highlighter came secondly important (65%); and the functions of spelling-check and grammar-check followed (53%).

A total of 169 feedback items were identified among all pieces of the peer-assessed writing compositions in Case Study 3. The number of feedback items per peer-assessed writing composition ranged from 1 to 26, with 5.63 feedback items on average (S.D. = 4.80). The participating students were found to have provided feedback in two major forms, namely alterations and suggestions. No feedback item in the forms of evaluation and clarification was found. As shown in Table 6.6, nearly 90% of the feedback items were alterations (88.7%), of which students provided specific changes on the under-assessment writing compositions. The students mainly adopted three ways to inform the peer-assessees about the specific changes

made, namely (1) enabling the changes-tracker function for a direct display of markups in the text file; (2) amending the text file directly and then changing the text color of the amendments for markups; and (3) amending the text file directly and then using the highlighter function to mark the amendments. The remaining 11.3% of the feedback items were suggestions, of which students pointed out the direction for changes for the under-assessment writing compositions. The students either highlighted or changed the color of the text which required further revision.

Table 6.6. Feedback provision among students in the peer-assessment tasks in Case Study 3.

	Surface copy-editing						**Content meaning enhancement**				**Sub-total**	
	Grammar		**Spelling**		**Punctuation**		**Idea presentation**		**Text organization**			
	N	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**	**N**	**(%)**
Alterations	58	(34.3)	26	(15.4)	15	(8.9)	39	(23.1)	12	(7.0)	150	(88.7)
Suggestions	8	(4.8)	3	(1.8)	2	(1.1)	3	(1.8)	3	(1.8)	19	(11.3)
Total	*66*	*(39.1)*	*29*	*(17.2)*	*17*	*(10.0)*	*42*	*(24.9)*	*15*	*(8.8)*	*169*	*(100.0)*

As shown in Table 6.6, the students focused on providing alterations for correcting grammar use (34.3%), alterations for improving idea presentation (23.1%), and alterations for correcting misspellings (15.4%). Examples of students' feedback items provided in peer-assessment tasks can be found in Table 6.7. The feedback items provided by the students addressed all five areas under the two main intentions—surface copy-editing and content meaning enhancement—as described in sub-section 3.3.2. Examples of students' peer-assessment feedback items for surface copy-editing and content meaning enhancement

can be found in Table 6.7 and Table 6.8, respectively.

Firstly, the majority of feedback items (66.3%) had the intention for surface copy-editing, which drew attention to the accurate use of grammar (39.1%), spelling (17.2%) and punctuation (10.0%) in English writing. As the examples shown in Table 6.7, students' feedback concerning grammar use focused on the errors of tense use (e.g., the consistent use of past tenses in the writing unit in this case study); subject-verb agreement (i.e., the correct alignment of singular vs plural forms); and pronoun use (e.g., the correct use of subject pronouns and object pronouns as well as the proper use of personal pronouns and possessive determiners). The feedback regarding punctuation was to keep the consistency in starting sentences with capital letters as well as ending sentences in different sentence forms with correct punctuation marks. Students' feedback on spelling was to correct the misspelled words, including the occurrence of misusing homonyms, in the under-assessment writing compositions.

Secondly, around one-third of feedback items (33.7%) had the intention of enhancing content meaning, which drew attention to improving idea presentation (24.9%) and text organization (8.8%) for a better clarity in English writing. As the examples shown in Table 6.8, students' feedback with respect to idea presentation were to add, substitute and delete words or sentences in the under-assessment writing compositions without changing the overall text meaning for better clarity. Students' feedback on text organization was to replace

conjunctions and/or move text for enhancing sentence fluency of the under-assessment writing compositions.

Table 6.7. Examples of students' peer-assessment feedback items for surface copy-editing in Case Study 3.

Category	Examples of students' feedback items
Grammar	***Feedback in the form of "Alternations"*** ● The five circles ~~represents~~ represent five continents … *[Remark: The student used changes-tracker function for an alternation to correct the present-tense plural form of the verb "represent" for the proper subject-verb agreement.]* ● He was also the person who created the ~~Olympics~~ Olympic Rings symbol. *[Remark: The student used changes-tracker function to replace the proper noun "Olympics" to its adjective form for the correct adjective-noun phrase "Olympic Rings".]* ***Feedback in the form of "Suggestions"*** ● The ancient Olympic Games were held in Olympia … The Games are (were) mainly athletic but also has (had) sports such as wrestling … *[Remark: The student used highlighter function to indicate the need to correct the present-tense verbs "are" and "has" in the text emphasizing the use of past tenses; and inserted a suggestion, in differently-colored text, on the possible changes accordingly.]* ● The Olympic Games has have a lot of famous athletes … *[Remark: The student used highlighter function to indicate the need to correct the present-tense singular verb "has" in view of the preceding plural subject "The Olympic Games"; and inserted a suggestion, in differently-colored text, on the possible change.]*
Spelling	***Feedback in the form of "Alternations"*** ● … thousands of ~~atheletes~~ athletes … *[Remark: The student used changes-tracker function for an alternation to correct the typo of "atheletes" to "athletes".]* ● … like Summer Olympics, Winter ~~Olmpics~~ Olympics … *[Remark: The student used changes-tracker function for an alternation to correct the typo of "Olmpics" to "Olympics".]* ***Feedback in the form of "Suggestions"*** ● The site and the sames were sacred to Zeus … *[Remark: The student used highlighter function to indicate the need of correcting the misspelled word "sames" in the sentence.]* ● I never ever know haw how to do it. *[Remark: The student used highlighter function to indicate the need to change "haw" to "how" for the wh-clause; and inserted the related suggestion, in differently-colored text.]*
Punctuation	***Feedback in the form of "Alternations"*** ● The modern Olympic ~~games~~ Games … *[Remark: The student used changes-tracker function for an alternation to capitalize the word "games" for the proper noun "Olympic Games".]* ● … on the Peloponnesus ~~peninsula~~ Peninsula. *[Remark: The student used changes-tracker function for an alternation to capitalize the word "peninsula" for the proper noun "Peloponnesus Peninsula".]* ***Feedback in the form of "Suggestions"*** ● He did win a gold medal from this race. altogether he had … *[Remark: The student used text-color change function to indicate the need to capitalize the word "although", which was a starting word of a new sentence.]* ● The ancient Olympics all started in Olympia, in southwest Greece over 2700 years ago. It was held in the honour of Zeus, king (King) of the gods (Gods). *[Remark: The student used text-color change function to indicate the need to capitalize the words "king" and "gods" due to their nature of proper nouns; and inserted suggestions, in differently-colored text, on the possible changes accordingly.]*

Table 6.8. Examples of students' peer-assessment feedback items for content meaning enhancement in Case Study 3.

Category	Examples of students' feedback items
Idea presentation	***Feedback in the form of "Alternations"***
	● … the Olympic Rings is made up of five rings in blue, yellow … *[Remark: The student used changes-tracker function for an alternation to use the phrase "is made up of" for an appropriate description of the structure of the Olympic Rings.]*
	● The games ~~because~~ were a political tool used by city-states to assert dominance over their rivals. *[Remark: The student used changes-tracker function for an alternation to replace the conjunction "because" with the verb "were" for expressing the intended meaning.]*
	Feedback in the form of "Suggestions"
	● The Games are mainly athletic but also has sports such as wrestling and horse (horse riding) and chariots racing events … *[Remark: The student used highlighter function to indicate the need to clarify the term use of "horse"; and inserted a suggestion on "horse riding", in differently-colored text.]*
	● It has games like athletics, basketball, gymnastic, diving … and a lot. *[Remark: The student used text-color change function to indicate the need to reconsider using an ellipsis to end the sentence; and made a suggestion on "and a lot" using the highlighter function.]*
Text organization	***Feedback in the form of "Alternations"***
	● You think the city must have snow, right? Then you are only half right, ~~. It is~~ because … *[Remark: The student used changes-tracker function for an alternation for a precise presentation of the explanation in response to "Then you are only half right".]*
	● ~~The opening of the Olympics once cost one hundred million dollars~~ The budget of the opening ceremony of the Olympics costs about one hundred million dollars each year. *[Remark: The student used changes-tracker function for an alternation for rewriting the sentence about the opening ceremony of the Olympics for a better presentation.]*
	Feedback in the form of "Suggestions"
	● .and of course He did win a gold medal … *[Remark: The student used highlighter and text-color change functions to indicate the need to consider the use of the pronoun "He", instead of the phrase "and of course", for an appropriate start of a new sentence.]*
	● … they always win a medal. And Their moves are … *[Remark: The student used highlighter and text-color change functions to indicate the need to consider the use of use of "Their", instead of "And", for an appropriate start of a new sentence.]*

In summary, the Grade 5 participating students in Case Study 3 under the designed technology-mediated pedagogy could complete the peer-assessment tasks on their own in line with the assessment criteria delineated in the tailored peer-assessment form. With regard to the type of peer comments, the majority of the participating students in Case Study 3 intended

to give peer comments in the form of alterations to directly provide specific changes on the under-assessment writing compositions. With respect to the depth of peer comments, the majority of the participating students intended to give peer comments for the surface copy-editing purposes. Those peer comments focused on correcting grammatical mistakes, enhancing idea presentation, and improving vocabulary use. These results reveal that the participating students in Case Study 3 were willing and confident to strike for a comprehensive support on their peers to improve the grammar accuracy and language expression in English writing products.

6.3.3 The Characteristics of Students' Self-editing Revision-making

From the content analysis of students' final revision-tracked writing files in the MS Word format, all of the 17 participating students in Case Study 3 were able to self-edit their own writing products in the self-editing task. From the self-reporting through the student questionnaire survey at the end of the trial teaching period, around 70% of the participating students (68%) completed the self-editing task within 15 minutes. More than half of the participating students considered the advanced functions of MS Word Processor useful for supporting their self-editing task. The participating students indicated that the function of changes-tracker was most useful (71%) in the self-editing task; the functions of highlighter and grammar-check came secondly important (53%).

Eighty-two revision items were identified among the 17 self-edited writing compositions.

The number of revision items per self-edited writing composition ranged from 1 to 13, with 4.82 revision items on average (S.D. = 3.13).The students were found to have made two major types of self-revisions, namely form-edits and content-edits. As shown in Table 6.9, nearly 60% of the revision items were form-edits (58.5%), of which students focused on editing the use of grammar (28.0%), spelling (18.3%) and punctuation (12.2%) in their original writing compositions. In line with their experience in peer-assessment feedback provision, students' revisions concerning grammar use focused on the errors of tense use (e.g., the consistent use of past tenses in the writing unit in this case study); subject-verb agreement (i.e., the correct alignment of singular vs plural forms); and pronoun use (e.g., the correct use of subject pronouns and object pronouns as well as the proper use of personal pronouns and possessive determiners). The revision items on spelling were to correct the misspelled words, including the occurrence of misusing homonyms, in the self-edited compositions. The revision items regarding punctuation were to keep the consistency in starting sentences with capital letters as well as ending sentences in different sentence forms with correct punctuation marks.

The remaining 41.5% of the revision items were content-edits, of which students attempted to improve the clarity of content expression through adding new text for better clarity (14.6%); deleting ill-structured text (12.2%); substituting existing text (11.0%); and rearranging existing text (3.7%). Examples of students' self-revisions made in the self-editing

task can be found in Table 6.10.

Table 6.9. Self-revisions among students in the self-editing task in Case Study 3.

Types of self-revisions		**Number**	**(%)**
Form-edits	Grammar	23	(28.0)
	Spelling	15	(18.3)
	Punctuation	10	(12.2)
	Sub-total	48	(58.5)
Content-edits	Addition	12	(14.6)
	Deletion	10	(12.2)
	Substitution	9	(11.0)
	Rearrangement	3	(3.7)
	Sub-total	34	(41.5)
	Total	*82*	*(100.0)*

Table 6.10. Examples of students' self-editing revision items in Case Study 3.

Types of self-revisions		Examples of students' self-revisions
Form-edits	Grammar	● … it was ~~hold~~ held in Olympia … *[Remark: The student corrected the present participle of the verb "hold" to its past participle "held" in response to the use of passive voice.]* ● So, these ~~mascot~~ mascots … *[Remark: The student corrected the plural form of the noun "mascots" in response to the preceding plural determiner "these".]*
	Spelling	● I never ever know ~~haw~~ how to do it. *[Remark: The student corrected the typo "haw" to "how" for the wh-clause in the sentence.]* ● Before the ~~Olympic~~ Olympics starts, … *[Remark: The student corrected the typo of "Olympic" to "Olympics" for the need of the proper noun in this clause.]*
	Punctuation	● The Paralympic ~~games~~ Games are … *[Remark: The student capitalized the word "games" in response to the need of the proper noun "Paralympic Games" in this sentence.]* ● … with the ~~summer~~ Summer and ~~winter~~ Winter Games alternating … *[Remark: The student capitalized the words "summer" and "winter" in response to the need of the proper nouns of "Summer and Winter Games".]*
Content-edits	Addition	● We should always cherish and treasure the friendship that is around us. *[Remark: The student inserted the verb "is" as the main verb for the subordinate clause.]* ● The budget of the opening ceremony of the Olympics … *[Remark: The student inserted the noun "ceremony" for the accurate use of the compound noun "opening ceremony" in the sentence.]*
	Deletion	● The modern Olympic Games were ~~the~~ held … *[Remark: The student removed the definite article "the" to rectify the ill-structured sentence.]* ● The symbol of the Olympic Games is composed of five interlocking rings, which *[are]* blue, yellow, black, green, and red ~~on a white field~~, known as … *[Remark: The student removed the phrase "on a white field" to avoid the redundancy of information on the colored rings of the Olympics symbol.]*
	Substitution	● The Ancient Olympic Games were religious and athletic festivals held every four years at the ~~sanctuary~~ honour of Zeus in Olympia … *[Remark: The student replaced the noun "sanctuary" with "honour" for a more accurate expression of the intended meaning.]* ● You can see how important the opening ceremony is by looking at the ~~money spent~~ budget used … *[Remark: The student replaced the phrase "money spent" with "budget used" for a more accurate expression of the intended meaning.]*
	Rearrangement	● ~~Altogether he~~ He had participated in one hundred and twenty-one races altogether. *[Remark: The student moved the adverb "altogether" to the end of the sentence for a better sentence fluency.]* ● ~~Olympic~~ History of the Olympic Games … *[Remark: The student rearranged the phrase as "History of the Olympic Games" for a more accurate expression of the intended meaning.]*

In summary, the Grade 5 participating students in Case Study 3 under the designed technology-mediated pedagogy could complete the self-editing task on their own based on the peer comments given in the completed peer-assessment form. The participating students intended to make form-edits to revise their writing products through conventional copy-editing operations in grammar, spelling and punctuation.

6.3.4 Students' Perceptions toward the Designed Pedagogy

From the results of questionnaire survey and focus group discussions with the participating students at the end of the writing unit, the participating students in Case Study 3 in general had a positive perception of the designed technology-mediated pedagogy.

6.3.4.1 Students' Overall Perception of the Designed Technology-mediated Pedagogy

As shown in Table 6.11, a large proportion of the students asserted that the teaching flow (82% ; Mean = 4.18 ; S.D. = 0.73) and the learning materials (70% ; Mean = 4.06 ; S.D. = 0.83) of the designed pedagogy were appropriately arranged. It is impressive that the majority of the students asserted the positive impact of the designed pedagogy on enhancing their responsibility for their own (82% ; Mean = 4.06 ; S.D. = 0.66) and peers' learning (94% ; Mean = 4.29 ; S.D. = 0.59). More than three quarters of the students (76%) agreed or very agreed that the potential of the designed pedagogy consolidated English language knowledge (Mean = 4.12 ; S.D. = 0.78). 71% of the students thought that the designed pedagogy could

enhance their motivation to be serious in ESL/EFL writing tasks (Mean = 4.00 ; S.D. = 0.79), as well as their performance in English writing (Mean = 4.06 ; S.D. = 0.83).

Table 6.11. The overall perception among the participating students in Case Study 3 toward the designed technology-mediated pedagogy.

Item	**Mean ***	**(S.D.)**
The designed pedagogy made me feel responsible for other peers' learning.	4.29	(0.59)
The flow of designed pedagogy was appropriate.	4.18	(0.73)
The designed pedagogy helped me consolidate English language knowledge.	4.12	(0.78)
The designed pedagogy made me feel responsible for my own learning.	4.06	(0.66)
I was satisfied with the materials and arrangements in the designed pedagogy.	4.06	(0.83)
I can perform better in English writing after learning under the designed pedagogy.	4.06	(0.83)
The designed pedagogy could motivate me to become serious in my English writing tasks.	4.00	(0.79)
I enjoy more the process of English writing after learning under the designed pedagogy.	3.94	(0.63)
The designed pedagogy could motivate me to reflect more on my English writing performance.	3.94	(0.75)
The designed pedagogy could motivate me to become active in learning English language.	3.88	(0.78)
The designed pedagogy could increase my interest in learning English language.	3.82	(0.73)
I become more confident of writing in English after learning under the designed pedagogy.	3.82	(0.88)
The designed pedagogy should be continued in normal English writing lessons.	3.82	(0.95)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions further confirms the above questionnaire survey results (see Table 6.12). More than 40% of the student respondents (41.67%) expressed their strong satisfaction and enjoyment toward the designed technology-mediated pedagogy in the writing unit. One-third of the student respondents considered the most impressive impact of the designed technology-mediated pedagogy was its potential to help them consolidate subject knowledge and thus achieving better learning performance in the subject of English Language. A quarter of the student respondents were most impressed that the designed technology-mediated pedagogy made them feel responsible

for peers' learning.

Table 6.12. Students' overall feedback from focus group discussions in Case Study 3 on the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the designed pedagogy	- The students were satisfied with the appropriate and convenient use of digital technology in the three-component designed pedagogy, which was new to them in daily ESL/EFL writing classroom. - The students appreciated the valuable learning experience of reciprocal help among one another to identify common writing errors and improve writing performance in ESL/EFL writing tasks.
Learning benefits from the designed pedagogy	- The students valued the opportunity in peer-assessment tasks to learn about the diverse use of vocabulary and grammatical items targeted in the writing unit through reading and assessing peers' writings. - The students recognized the need of the whole-class discussion to discuss common writing errors for confirming the correct language use targeted in the writing unit and consolidating their English knowledge. - The students asserted the importance of the self-editing task to prompt them to reflect on their own performance and rectify their writing errors in the writing unit.

The student respondents added that the three-component designed pedagogy was new to them in daily ESL/EFL writing classroom, which provided them with a good learning opportunity to enhance English writing. They asserted the appropriate and convenient use of digital productivity tools in the peer-assessment and self-editing tasks. The student respondents added that they appreciated the valuable learning experience of reciprocal help among one another to identify common errors and improve writing quality in ESL/EFL writing tasks. The student respondents explained that they could learn about the diverse use of vocabulary and grammatical items in the targeted writing task through reading and

assessing peers' writing compositions in the peer-assessment tasks; confirm the correct language use in the targeted writing task and consolidate their English knowledge through discussing common writing errors in the whole-class discussion; and reflect on their own performance and rectify their writing errors in the targeted writing task through refining their own work in the self-editing task. One student respondent further pointed out that the whole-class discussion especially helpful for the subsequent self-editing task.

6.3.4.2 Students' Specific Perception of Pedagogical Arrangements of Peer-assessment and Self-editing

The participating students in Case Study 3 positively perceived the pedagogical arrangements of peer-assessment and self-editing tasks in the ESL/EFL writing classroom. The questionnaire survey (see Table 6.13 and Table 6.14) showed that the majority of the students liked to give feedback in peer-assessment tasks (88% ; Mean = 4.18 ; S.D. = 0.64), and to take feedback and then make revisions in self-editing tasks (76% ; Mean = 4.06 ; S.D. = 0.75). More than 70% of the students asserted the potential of the peer-assessment process (71% ; Mean = 4.18 ; S.D. = 1.01) and the self-editing process (76% ; Mean = 4.24 ; S.D. = 0.83) could help them improve their English writing. It is noteworthy that 71% of the students thought that it was easy to give feedback in peer-assessment tasks (Mean = 4.00 ; S.D. = 0.79), and also easy to interpret feedback and then make revisions in self-editing tasks (Mean = 4.06 ; S.D. = 0.83). It is also encouraging that 71% of the students felt confident and

comfortable to complete the tasks of peer-assessment (Mean = 4.00 ; S.D. = 0.79) and self-editing (Mean = 4.06 ; S.D. = 0.83).

Table 6.13. The specific perception among the participating students in Case Study 3 toward the peer-assessment task in the designed technology-mediated pedagogy.

Item	Mean *	(S.D.)
I liked to give feedback in peer-assessment tasks.	4.18	(0.64)
The peer-assessment process could help me improve my English writing.	4.18	(1.01)
It was easy to give feedback in peer-assessment tasks.	4.00	(0.79)
I was confident of giving feedback in peer-assessment tasks.	4.00	(0.79)
I could think critically to give feedback in peer-assessment tasks.	3.94	(0.75)
I could provide accurate and sufficient feedback to peers in peer-assessment tasks.	3.94	(0.83)
It is necessary for me to know how to peer-assess my classmates' English writing compositions.	3.88	(0.78)
I was benefited from the peer-assessment process for learning English language.	3.88	(0.86)
The peer-assessment process could increase my interest in English writing.	3.88	(0.93)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

Table 6.14. The specific perception among the participating students in Case Study 3 toward the self-editing task in the designed technology-mediated pedagogy.

Item	Mean *	(S.D.)
The self-editing process could help me improve my English writing.	4.24	(0.83)
I liked to take feedback and then make revisions in self-editing tasks.	4.06	(0.75)
It was easy to interpret feedback and then make revisions in self-editing tasks.	4.06	(0.83)
I felt comfortable to take feedback for making revisions in self-editing tasks.	4.06	(0.83)
I was benefited from the self-editing process for learning English language.	4.00	(0.71)
The feedback given by peers was accurate and sufficient for my self-editing task.	3.88	(0.86)
I could think critically to make revisions in self-editing tasks.	3.82	(0.88)
It is necessary for me to know how to self-edit my own English writing compositions.	3.82	(1.07)
The self-editing process could increase my interest in English writing.	3.71	(0.99)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions echoes with the above questionnaire survey results (see Table 6.15 and Table 6.16). The student respondents agreed that the peer-assessment and self-editing tasks could greatly help them to avoid making common writing errors and thus improving their English writing performance.

Table 6.15 summarizes students' overall feedback with regard to the peer-assessment

task in the designed technology-mediated pedagogy. Half of the student respondents were most impressed by the benefits of the peer-assessment task to improve English writing and thus facilitating their English language learning. More than 40% of the student respondents (41.67%) expressed their strong confidence to give accurate and sufficient feedback in peer-assessment tasks.

Table 6.15. Students' overall feedback from focus group discussions in Case Study 3 on the peer-assessment task in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of peer-assessment task	- The students liked the peer-assessment tasks, as they felt interesting to identify peers' writing errors and enjoyed the role as "Little Teachers" to provide peers with comments or suggestions for improvement. - The students felt confident of giving feedback in peer-assessment tasks, as they considered their English proficiency was satisfactory enough to provide accurate and sufficient feedback on peers' English writings.
Learning benefits from peer-assessment task	- The students valued the benefits of the peer-assessment process on them to become more alert to common writing errors; and to new words and sentence patterns used by peers for enhancing their writing quality. - The students considered peer-assessment tasks effective to prepare them better for English writing examinations by correcting peers' language mistakes and making self-reflection when proofreading peers' writings.

The student respondents indicated they liked the peer-assessment tasks, as they were empowered to give comments to their peers like a teacher. The student respondents felt confident of giving feedback in peer-assessment tasks, as they considered their English proficiency was satisfactory enough to provide accurate and sufficient feedback on peers' English writings. The student respondents pointed out that the peer-assessment tasks engaged them in the process of proofreading peers' writing compositions to identify writing errors.

They valued the benefits of this process to not only help peers to correct writing errors, but also motivate themselves to reflect on own writing errors. They all agreed these learning tasks could greatly help them to avoid common writing errors and thus improving English writing performance. Two student respondents further indicated that they found the peer-assessment tasks interesting, as they could learn more new words and sentence patterns when reading peers' writing compositions. These two student respondents considered that this process could help them to enhance English reading ability, as well as to better prepare for English writing examinations.

Table 6.16 summarizes students' overall feedback with regard to the self-editing task in the designed technology-mediated pedagogy. More than 40% of the student respondents (41.67%) strongly emphasized their strong need to know how to self-edit their own English writing compositions. Another 41.67% of the student respondents considered the most impressive impact of the self-editing task was its help to improve English writing and so to advance English language learning. It is noteworthy that the remaining 16.66% of the student respondents were most impressed that the self-editing task could foster them to think critically when revising their own writing compositions.

Table 6.16. Students' overall feedback from focus group discussions in Case Study 3 on the self-editing task in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of self-editing task	- The students liked to do the self-editing task. They stressed the necessity for them to know how to self-edit their own English writing compositions for better performance in English writing examinations.
Learning benefits from self-editing task	- The students asserted that the self-editing task could help them improve English writing, as an additional chance to identify careless mistakes and rectify writing errors made in their original writing compositions. - The students valued peers' comments and suggestions for refining their own writing compositions. They were prompted to check, rethink and avoid previous mistakes in English writing compositions. - The students indicated that the self-editing task could help to promote critical thinking, as they needed to judge the appropriateness of different and even contradictory suggestions from peers for self-editing.

The student respondents liked to do the self-editing task. They valued peers' comments and suggestions which prompted them to learn about their own writing errors, rethink and beware of previous mistakes in English writing, refine their own writing compositions, reflect on their own areas of improvement in English writing, and so better prepare for English writing examinations. The student respondents asserted that the self-editing task could help them improve English writing, as the self-editing task was an additional chance for them to identify careless mistakes and rectify writing errors made in their original writing compositions. One of the student respondents further indicated that the self-editing task could help to promote critical thinking, as they needed to judge the appropriateness of different and even contradictory suggestions from peers before making revisions in their own writing compositions.

The student respondents were also asked about their views on the situation that around half of their classmates in the questionnaire survey showed a neutral stance on the impact of the self-editing task on increasing learning interest. Some student respondents who had such response in the questionnaire survey explained their general readiness to include the self-editing process as a routine and unexciting step in English writing tasks, regardless of the precedence of peer-assessment arrangement.

6.3.4.3 Students' Specific Perception of Technological Use of Edmodo and MS Word Processor

For the technological use of Edmodo and MS Word Processor in the ESL/EFL writing classroom, the participating students in Case Study 3 highly appreciated the support from these two digital productivity tools on the peer-assessment and self-editing tasks in the designed technology-mediated pedagogy. The majority of the students in the questionnaire survey (see Table 6.17 and Table 6.18) indicated that they liked to use Edmodo (94% ; Mean = 4.29 ; S.D. = 0.59) and MS Word Processor (82% ; Mean = 4.18 ; S.D. = 0.73) in the peer-assessment and self-editing tasks. Over 80% of the students were impressed by the potential of using Edmodo (82% ; Mean = 4.18 ; S.D. = 0.73) and MS Word Processor (88% ; Mean = 4.18 ; S.D. = 0.64) to enhance the efficiency of peer-assessment and self-editing tasks. More than three quarters of the students asserted not only the ease of using Edmodo (82% ; Mean = 4.24 ; S.D. = 0.75) and MS Word Processor (76% ; Mean = 4.29 ; S.D. = 0.65)

to handle peer-assessment and self-editing tasks; but also the support of Edmodo (82% ; Mean = 4.18 ; S.D. = 0.73) and MS Word Processor (71% ; Mean = 4.12 ; S.D. = 0.86) on their ESL/EFL writing tasks. As for the use of Edmodo, it is noteworthy that the students were especially impressed by its potential to motivate learning activeness (82% ; Mean = 4.12 ; S.D. = 0.70) and enhance peer interaction (76% ; Mean = 4.12 ; S.D. = 0.93) when learning with peers in ESL/EFL writing tasks. Regarding the use of MS Word Processor, the students were especially impressed by its potential to motivate active reflection on areas of improvement (82% ; Mean = 4.18 ; S.D. = 0.73) and to enhance learning interest in ESL/EFL writing lessons (71% ; Mean = 4.18 ; S.D. = 0.99).

Table 6.17. Students' specific perception of the technological use of Edmodo in the designed technology-mediated pedagogy in Case Study 3.

Item	**Mean ***	**(S.D.)**
I liked to use Edmodo in peer-assessment tasks.	4.29	(0.59)
I felt easy to use Edmodo to handle peer-assessment tasks.	4.24	(0.75)
The use of Edmodo could enhance the efficiency of peer-assessment tasks.	4.18	(0.73)
It was helpful to use Edmodo for supporting English writing tasks.	4.18	(0.73)
The use of Edmodo could motivate me to actively learn from peers' writing compositions.	4.12	(0.70)
The use of Edmodo could enhance my interaction with peers in English writing tasks.	4.12	(0.93)
The use of Edmodo could enhance my learning interest in English writing lessons.	4.00	(0.87)
I will continue exploring the use of Edmodo for supporting English writing.	3.88	(0.93)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

Table 6.18. Students' specific perception of the technological use of MS Word Processor in the designed technology-mediated pedagogy in Case Study 3.

Item	Mean *	(S.D.)
I felt easy to use MS Word Processor to handle peer-assessment and self-editing tasks.	4.29	(0.65)
The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks.	4.18	(0.64)
I liked to use MS Word Processor in peer-assessment and self-editing tasks.	4.18	(0.73)
The use of MS Word Processor in English writing tasks could motivate me to actively reflect on my areas of improvement in English writing.	4.18	(0.73)
The use of MS Word Processor could enhance my learning interest in English writing lessons.	4.18	(0.99)
It was helpful to use MS Word Processor for supporting English writing tasks.	4.12	(0.86)
The use of MS Word Processor in English writing tasks could motivate me to actively identify peers' areas of improvement in English writing.	4.00	(0.79)
I will continue exploring the use of MS Word Processor for supporting English writing.	4.00	(0.79)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The feedback from the participating students in focus group discussions echoes with the above questionnaire survey results (see Table 6.19 and Table 6.20). The student respondents further explained the benefits of the technological use of Edmodo and MS Word Processor in the designed pedagogy.

Table 6.19 summarizes students' overall feedback with regard to the use of Edmodo in the designed technology-mediated pedagogy. Half of the student respondents considered the most impressive impact of the use of Edmodo was its potential to enhance the efficiency of writing tasks in the designed technology-mediated pedagogy. More than 40% of the student respondents (41.67%) expressed their strong favor for the use of Edmodo in ESL/EFL writing lessons, and their strong willingness to continue exploring the use of Edmodo for supporting English writing.

Table 6.19. Students' overall feedback from focus group discussions in Case Study 3 on the use of Edmodo in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the use of Edmodo	- The students liked to use Edmodo in the designed pedagogy to efficiently and easily access and deliver files for the peer-assessment and self-editing tasks without time and location constraints.
Learning benefits from the use of Edmodo	- The students valued the convenient and instant communication among students and teacher via Edmodo for sharing comments and files in the writing unit, which was seldom in traditional ESL/EFL writing lessons.

The student respondents liked to use Edmodo in the designed pedagogy for two main reasons. First, Edmodo supported them to conveniently and efficiently access and deliver files in both the peer-assessment and self-editing tasks. Second, Edmodo supported them to conveniently and instantly communicate with the designate group of peers and teacher for sharing comments and files. The student respondents preferred the technology-supported approach for tasks without time and location constraints; rather than the traditional approach for paper-and-pencil-based tasks inside classrooms. One of the student respondents further hoped for the use of Edmodo in other cross-subject learning activities.

Table 6.20 summarizes students' overall feedback with regard to the use of MS Word Processor in the designed technology-mediated pedagogy. Half of the student respondents considered the most impressive impact of the use of MS Word Processor was its support on enhancing the efficiency of peer-assessment and self-editing tasks in the writing unit. One-third of the student respondents expressed their strong favor for and interest in the use of MS Word Processor in ESL/EFL writing lessons. The remaining 16.67% of the student

respondents were most impressed that the use of MS Word Processor in ESL/EFL writing tasks could motivate them to actively reflect on their own areas of improvement in English writing.

Table 6.20. Students' overall feedback from focus group discussions in Case Study 3 on the use of MS Word Processor in the designed technology-mediated pedagogy.

Dimension	Students' feedback from focus group discussions
General perceptions of the use of MS Word Processor	- The students liked and felt easy to use MS Word Processor for an efficient and effective task completion in the writing unit; which would be hardly achieved in the paper-and-pencil manner.
Learning benefits from the use of MS Word Processor	- The students valued the useful support from the spelling-check and grammar-check functions to identify writing errors for completing writing tasks and learning English knowledge. - The students were impressed by the changes-tracker function which supported them to conveniently and clearly show revisions made in the files of writing compositions.

The student respondents liked and found it easy to use MS Word Processor in the designed pedagogy. The student respondents explained that the various functions of MS Word Processor supported them to efficiently and effectively complete both peer-assessment and self-editing tasks; which would be hardly achieved in paper-and-pencil based approach. Five of the student respondents especially valued the spelling-check and grammar-check functions, which were very useful for identifying writing errors. These two functions were considered important for enhancing the efficiency in task completion, as well as the learning of English language knowledge. Another student respondent was especially impressed by the changes-tracker function, which supported her to conveniently and clearly show revisions

made in the files of writing compositions.

6.3.4.4 Students' Specific Perception of the Provision of Digital Devices

The participating students in Case Study 3, unlike their counterparts in Case Study 1 who used tablet PCs throughout the trial teaching, were arranged by their school to use desktop computers in the school computer room for the writing unit. The questionnaire survey and focus group discussions with these participating students therefore asked about students' learning perception of the provision of digital devices in the trial teaching.

Participating students agreed in the questionnaire survey (see Table 6.21) that the use of desktop computers in the designed technology-mediated pedagogy was appropriate. The participating students held a relatively neutral stance about the need and effectiveness of introducing the use of tablet PCs in the designed technology-mediated pedagogy. About half of the participating students (52.94%) thought that it would be better to use tablet PCs in the designed pedagogy; whereas around one-third of the student respondents (29.41%) held the opposing stance.

Table 6.21. Students' learning perception of the provision of digital devices in Case Study 3.

Item	**Mean ***	**(S.D.)**
The use of desktop computers in the designed pedagogy was appropriate.	4.29	(0.69)
It would be better to use tablet PCs in the designed pedagogy.	4.00	(0.94)
I hope to use tablet PCs in the designed pedagogy.	3.94	(1.03)

*Note: 1 = Very disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Very agree

The related feedback from student focus group discussions, however, provides a

different picture contrasting the above questionnaire survey results. The majority of the student respondents indicated their preference for using desktop computers rather than tablet PCs in the designed pedagogy. More than 80% of the student respondents (83.34%) indicated their preference to use desktop computers in the writing unit; whereas only less than one-tenth of the student respondents (8.33%) preferred the use of tablet PCs. For the student respondents who preferred the use of desktop computers, they thought the screen of desktop computers is larger than that of tablet PCs, which is less harmful to eye-sight. They also thought the relatively stable text input afforded by desktop computers could better ensure the efficiency in completing ESL/EFL writing tasks. In contrast, the student respondents who preferred the use of tablet PCs explained that due to the portability of mobile devices for convenient Internet connectivity and instant online communication with peers without time and location constraints, it would be easier and more convenient for them to use tablet PCs for learning purposes.

The results of the questionnaire survey and focus group discussions as reported in this sub-section 6.3.4 reveal that students in Case Study 3 was most impressed by the impact of the designed pedagogy on enhancing students' sense of responsibility to advance the peers' and their own learning. The choice of the primary composition for the trial teaching in this case study—a school-based ESL/EFL writing homework assignment—might be a possible cause of such case-specific perception. The students in Case Study 3 were fully informed of

this arrangement of primary compositions prior to the three steps of an online peer-assessment assignment, a whole-class discussion in class time, and an online self-editing assignment. Many students initially felt uninterested in the assignments on peer-assessment and self-editing, as they already had prior experience in these two tasks, without technological support, in normal ESL/EFL writing lessons. After learning under the three-component designed pedagogy, the students not only enjoyed more when learning ESL/EFL writing, but also felt more responsible to provide feedback and/or suggestions for their peers to improve English writing performance. Such learning experience entailed the students to positively perceive the designed pedagogy on enhancing their learning enjoyment and sense of learning responsibility.

6.4 Case Summary

Case Study 3 implemented a 5-session trial, with 2 rounds of online assignments, of the designed technology-mediated pedagogy in a Grade 5 class, with 17 students whose average age was 9.88, in an English-medium (EMI) single-gender (girls) school at the start of Grade 5 ESL/EFL curriculum in Hong Kong. All the 17 participating students had no experience in using the social learning platform Edmodo; yet already had experience in using the digital productivity tool MS Word Processor for learning purposes. The pedagogical arrangements of peer-assessment and self-editing tasks in ESL/EFL writing process were new to 24% and 18% of the participating students, respectively, in this case study.

The participating students in this case study gave a total of 17 pieces of report writing compositions, with the average length of 298.71 words per writing composition, for writing a report on Olympics, covering the issues of mascots, meaning of torch, logo, history, sports event etc. Each participating student was arranged for a three-component pedagogical flow to peer-assess two writing compositions, join a whole-class discussion about noteworthy writing issues, and self-edit own writing composition based on peers' feedback. The social learning platform Edmodo and the word processing productivity tool MS Word Processor were used in the writing unit for supporting students' peer-communication and text-editing in a digital manner.

With the technological support from the two concerning digital productivity tools, the participating students could complete the peer-assessment and self-editing tasks as arranged in the writing unit. In the peer-assessment task, the participating students were able to provide 5.63 feedback items on average per peer-assessed composition. Nearly 90% of the peer feedback items were given in the form of alterations for directly providing specific changes on the under-assessment writing compositions. More than 65% of the peer feedback items were given for the purpose of surface copy-editing. The feedback focused on the accurate use of grammar, the appropriate idea presentation, and the accurate use of spelling. In the self-editing task, the participating students made 4.82 self-revisions on average per self-edited composition. Nearly 60% of the self-revisions were form-edits. The self-revisions

focused on correcting grammatical errors, correcting spelling mistakes, and adding sentential units for better clarity.

From the two-part content analysis on students' overall achievements under the designed technology-mediated pedagogy, the participating students were found to have a statistically significant improvement in the overall writing scores; and enhance the syntactic maturity in English writing between the start and the end of the trial teaching period. The participating students demonstrated a significant improvement in the specific dimensions about the correctness of spelling and punctuation, as well as the variety of phrasal- and/or sentential-patterns. The results of the questionnaire survey at the end of the trial teaching show that nearly 95% of the participating students asserted that the designed technology-mediated pedagogy was effective to enhance their sense of responsibility for peers' learning. Over 80% of the participating students considered the flow of designed technology-mediated pedagogy appropriate. More than three quarters of the participating students recognized the potential of the designed technology-mediated pedagogy to help consolidate English language knowledge; although around half of the students had a neutral stance on the impact of the self-editing task on increasing learning interest. From the focus group discussions at the end of the trial teaching, the student respondents perceived that after learning under the designed pedagogy, they enjoyed more and perform better in the process of English writing.

This case study empirically affirms the feasible process and promising effectiveness of the designed technology-mediated pedagogy for ESL/EFL writing curriculum at the senior elementary school level. The results of this case study show that, when Grade 5 students are guided to pay attention to the specific language knowledge involved in individual writing tasks, the young students are capable of identifying and rectifying the major language errors, in particular the ones related to grammar, spelling and punctuation, in the relevant English writing compositions. The technological support in the designed pedagogy, especially the one from MS Word Processor, was helpful to increase students' confidence to identify and rectify the language errors appeared in their writing compositions. This case study showed that the integration of Edmodo and MS Word Processor into peer-assessment and self-editing tasks in ESL/EFL writing classrooms have the potential to stimulate Grade 5 students to develop an awareness of accurate grammar use and appropriate language expression in ESL/EFL writing tasks. This in turn can lead the young ESL/EFL students to actively reflect on their English writing performance and thus significantly improving their English writing competence.

Chapter 7: Overall Results and Discussion

This chapter will summarize the key findings across the three case studies as reported in Chapter 4 to Chapter 6; and discuss the noteworthy issues in the multiple case study with regard to the designed technology-mediated pedagogy.

7.1 Students' Achievements in Grammar Accuracy and Language Expression under the Designed Pedagogy across the Three Case Studies

This section summarizes students' achievements in grammar accuracy and language expression in ESL/EFL writing tasks across the three case studies from two perspectives: the overall quality and the syntactic maturity of students' English writing compositions.

As shown in Table 7.1, the participating students across all three case studies were found to have a statistically significant improvement in the overall writing performance between the start and the end of the respective trial teaching periods.

Table 7.1. Comparison of scoring results of students' writing compositions before and after the trial teaching across the three case studies.

	Case Study 1 (CMI Grade 4 ; N = 25)			**Case Study 2 (CMI Grade 4 ; N = 28)**			**Case Study 3 (EMI Grade 5 ; N = 17)**		
	Pre-	**Post-**	***t*-test**	**Pre-**	**Post-**	***t*-test**	**Pre-**	**Post-**	***t*-test**
(A) Grammar Accuracy [max. mark = 10]	***5.36 (1.58)***	***6.24 (1.79)***	***4.53****	***6.11 (1.71)***	***7.89 (1.85)***	***5.68****	***6.82 (1.67)***	***7.82 (1.63)***	***3.37****
(A-1) Grammar use *[max. mark = 5]*	2.56 (0.92)	3.12 (1.01)	3.93***	2.79 (1.07)	3.71 (1.18)	4.67***	3.59 (1.12)	3.94 (1.14)	2.07
(A-2) Spelling and punctuation *[max. mark = 5]*	2.80 (1.00)	3.12 (1.05)	3.36**	3.32 (1.09)	4.18 (0.95)	4.50***	3.24 (0.91)	3.88 (0.91)	2.68*
(B) Language Expression [max. mark = 10]	***7.00 (1.47)***	***7.08 (1.53)***	***1.45***	***6.96 (1.40)***	***7.25 (1.60)***	***2.83****	***7.53 (1.23)***	***7.82 (1.33)***	***2.06***
(B-1) Word choice *[max. mark = 5]*	3.72 (1.02)	3.76 (1.01)	1.00	3.79 (0.88)	3.82 (0.91)	1.00	3.82 (0.64)	3.88 (0.60)	1.00
(B-2) Sentence fluency *[max. mark = 5]*	3.28 (0.89)	3.32 (0.95)	1.00	3.18 (0.82)	3.43 (1.00)	2.55*	3.71 (0.69)	3.94 (0.83)	2.22*
Overall [max. mark = 20]	**12.36 (2.27)**	**13.32 (2.59)**	**4.37*****	**13.07 (2.64)**	**15.32 (3.10)**	**5.67*****	**14.35 (2.18)**	**15.65 (2.62)**	**3.80****

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Specifically, the positive impact of the designed technology-mediated pedagogy in the dimension of "Grammar Accuracy" was particularly strong in Case Study 1 and Case Study 2. The participating students in these two case studies achieved statistically significant increases in both the sub-dimensions "Grammar use" and "Spelling and punctuation". The participating students in Case Study 3 achieved a statistically significant increase in the sub-dimension "Spelling and punctuation" solely.

For the dimension of "Language Expression", the designed technology-mediated pedagogy had a statistically significant effect to foster students in Case Study 2 and Case Study 3 to enhance performance in the sub-dimension "Sentence fluency". Such effect was even strong enough to make students in Case Study 2 achieve a statistically significant

increase in the score in the dimension of “Language Expression” after the trial teaching.

On top of their overall writing performance, the participating students across all three case studies were found to have a statistically significant improvement in the syntactic maturity in English writing between the start and the end of the respective trial teaching period, as reflected by the statistically significant increase in the number of T-units in their writing compositions before and after the trial teaching (see Table 7.2). It is noteworthy that the participating students in Case Study 2 and Case Study 3 also made a statistically significant increase in the number of clauses, in their writing compositions before and after the trial teaching.

Table 7.2. Comparison of the counts of different syntactic units in students' writing compositions before and after the trial teaching across the three case studies.

	Case Study 1 (CMI Grade 4 ; N = 25)			**Case Study 2 (CMI Grade 4 ; N = 28)**			**Case Study 3 (EMI Grade 5 ; N = 17)**		
Counts of Syntactic Units									
	Pre-	**Post-**	***t*-test**	**Pre-**	**Post-**	***t*-test**	**Pre-**	**Post-**	***t*-test**
Words [W]									
Mean	121.72	121.08	-1.03	99.10	98.79	-0.58	298.71	299.59	0.68
(S.D.)	(30.53)	(29.26)		(33.14)	(33.55)		(161.78)	(159.69)	
Max.	194	190		194	191		739	736	
Min.	80	80		57	58		72	73	
Clauses [C]									
Mean	28.52	29.48	1.78	20.50	22.50	3.23**	37.35	39.47	3.65**
(S.D.)	(7.80)	(7.23)		(7.02)	(8.58)		(19.68)	(19.75)	
Max.	47	44		38	43		84	84	
Min.	18	19		9	9		7	9	
T-units [T]									
Mean	17.84	18.64	2.38*	14.71	15.43	2.39*	25.82	26.41	2.16*
(S.D.)	(4.02)	(4.08)		(6.50)	(6.44)		(13.46)	(13.13)	
Max.	28	28		33	34		57	57	
Min.	12	12		4	7		5	6	
Sentences [S]									
Mean	12.04	12.16	1.14	12.32	12.21	-1.00	18.53	18.82	1.43
(S.D.)	(4.77)	(4.64)		(5.88)	(5.84)		(8.50)	(8.66)	
Max.	20	20		33	33		37	38	
Min.	4	5		4	4		4	4	
Ratios of Syntactic Measurements									
	Pre-	**Post-**	***t*-test**	**Pre-**	**Post-**	***t*-test**	**Pre-**	**Post-**	***t*-test**
Mean clauses per T-unit [C/T]	1.60	1.58	-0.38	1.47	1.48	0.88	1.46	1.51	1.53
Mean T-units per Sentence [T/S]	1.68	1.73	1.74	1.25	1.33	2.32*	1.36	1.39	1.06

* $p < 0.05$ ** $p < 0.01$

The abovementioned results of the content analyses reveal that the implementation of the designed pedagogy could lead to a significant learning enhancement among the participating students across all three case studies. With the three components of technology-supported learning and teaching activities, the young students at senior

elementary grades were capable enough to reduce the number of writing errors for accurate grammar use and increase the complexity of sentence structure in their writing compositions. These encouraging results echo with the insights from Chapelle (2009), Tompkins (2010, 2012) and Yang (2012) that technology-supported ESL/EFL writing tasks which incorporate learner-centered learning elements can foster elementary school students to reflectively consolidate and apply their high-level linguistic knowledge about grammar accuracy and language expression in ESL/EFL writing. The following sub-sections look into how feasible that the young students progressively enhance their learning achievements under the peer-assessment and self-editing processes in the designed pedagogy.

7.2 The Characteristics of Students' Peer-assessment Feedback Provision across the Three Case Studies

This section summarizes the characteristics of students' feedback provision in the process of peer-assessment in ESL/EFL writing tasks across the three case studies. As shown in Table 7.3, all participating students in the three case studies were ready to provide feedback in the peer-assessment tasks under the designed pedagogy.

Table 7.3. Comparison of the feedback provision among students in peer-assessment tasks across the three case studies.

		Case Study 1 (CMI Grade 4 ; N = 25)			**Case Study 2 (CMI Grade 4 ; N = 28)**			**Case Study 3 (EMI Grade 5 ; N = 17)**		
		Alter*	**Suggest***	**Sub-total**	**Alter***	**Suggest***	**Sub-total**	**Alter***	**Suggest***	**Sub-total**
(A) Surface copy-editing	***N***	***427***	***43***	***470***	***187***	***86***	***273***	***99***	***13***	***112***
	(%)	***(72.9)***	***(7.3)***	***(80.2)***	***(55.0)***	***(25.3)***	***(80.3)***	***(58.6)***	***(7.7)***	***(66.3)***
(A-1) Grammar	N	175	20	195	94	40	134	58	8	66
	(%)	(29.9)	(3.4)	(33.3)	(27.6)	(11.8)	(39.4)	(34.3)	(4.8)	(39.1)
(A-2) Spelling	N	106	15	121	60	33	93	26	3	29
	(%)	(18.1)	(2.5)	(20.6)	(17.7)	(9.7)	(27.4)	(15.4)	(1.8)	(17.2)
(A-3) Punctuation	N	146	8	154	33	13	46	15	2	17
	(%)	(24.9)	(1.4)	(26.3)	(9.7)	(3.8)	(13.5)	(8.9)	(1.1)	(10.0)
(B) Content meaning enhancement	***N***	***108***	***8***	***116***	***61***	***6***	***67***	***51***	6	57
	(%)	***(18.4)***	***(1.4)***	***(19.8)***	***(17.9)***	***(1.8)***	***(19.7)***	***(30.2)***	***(3.5)***	***(33.7)***
(B-1) Idea presentation	N	89	7	96	58	6	64	39	3	42
	(%)	(15.2)	(1.2)	(16.4)	(17.0)	(1.8)	(18.8)	(23.1)	(1.8)	(24.9)
(B-2) Text organization	N	19	1	20	3	0	3	12	3	15
	(%)	(3.2)	(0.2)	(3.4)	(0.9)	(0.0)	(0.9)	(7.0)	(1.8)	(8.8)
Total	**N**	**535**	**51**	**586**	**248**	**92**	**340**	**150**	**19**	**169**
	(%)	**(91.3)**	**(8.7)**	**(100.0)**	**(72.9)**	**(27.1)**	**(100.0)**	**(88.7)**	**(11.3)**	**(100.0)**
The length of peer-assessed compositions										
Range of text length		80 to 194 words			57 to 194 words			72 to 739 words		
Average of text length		121.72 words			99.10 words			289.71 words		
Average number of sentences		12.04 sentences			12.32 sentences			18.53 sentences		
The counts of feedback items per peer-assessed composition										
Range of counts of feedback items		1 to 68 items			1 to 22 items			1 to 26 items		
Average number of feedback items		13.02 items			7.55 items			5.63 items		
Ratio of sentences : feedback items		Every 0.92 sentence with 1 feedback			Every 1.63 sentences with 1 feedback			Every 3.29 sentences with 1 feedback		

*Note: Alter = Alterations ; Suggest = Suggestions

The students in Case Study 1 demonstrated the highest frequency of feedback provision in the peer-assessed compositions; whereas the students in Case Study 2 came second and those in Case Study 3 followed. The students in Case Study 1 gave 13.02 feedback items per composition on average. This average number is 1.72 times of that in Case Study 2 (7.55 feedback items) and 2.31 times of that in Case Study 3 (5.63 feedback items). This result is further attested by the average number of sentences with one feedback item in the

peer-assessed compositions. As shown in Table 7.3, the students in Case Study 1 on average provided one feedback item in every 0.92 sentence. This ratio nearly doubles the one in Case Study 2 (one feedback in every 1.63 sentences); and triples the one in Case Study 3 (one feedback in every 3.29 sentences).

Regarding the type of peer-assessment feedback items, the participating students across the three case studies tended to give feedback items in the type of alterations for making specific changes on the under-assessment writing compositions; rather than the ones in the type of suggestions for pointing out the direction for changes for the under-assessment writing compositions. The ratios of feedback type between alterations and suggestions are 9:1 in Case Study 1 and Case Study 3; and 7:3 in Case Study 2. Concerning the depth of peer-assessment feedback items, the participating students across the three case studies tended to give feedback items for the purpose of surface copy-editing for correcting the grammatical and spelling mistakes in English writing; instead of the purpose of content meaning enhancement for a better clarity in English writing. The ratios of feedback purpose between surface copy-editing and content meaning enhancement are 8:2 in Case Study 1 and Case Study 2; and 7:3 in Case Study 3.

The students in Case Study 1 and Case Study 2 demonstrated a common characteristic that the quantity of feedback items intended for surface copy-editing was four times of those intended for content meaning enhancement. For students in Case Study 3, the quantity of

feedback items intended for surface copy-editing doubled those intended for content meaning enhancement. This reflects that students in all three case studies shared the same focus on providing feedback items intended for surface copy-editing; yet differed slightly in the provision of feedback for content meaning enhancement. The quantity of feedback items for surface copy-editing in Case Study 1 and Case Study 2, respectively, was 1.21 times of that in Case Study 3. In contrast, the quantity of feedback items for content meaning enhancement in Case Study 3 was 1.70 times of that in Case Study 1 and Case Study 2, respectively.

The students in Case Study 1 and Case Study 2 also attempted to give feedback on the dimension of content meaning enhancement; but the quantity was lower. Students in Case Study 3 were more willing to make such attempt. This might be due to the different patterns of writing errors in the writing compositions among the three case studies. The students in each class of Case Study 1 and Case Study 2 diversified more in terms of the level of English writing competence. There were many chances for students to spot out the writing errors, especially the ones related to grammar accuracy, in the peer-assessed writing compositions. In contrast, the students in Case Study 3 performed compatibly good in grammar accuracy, the quantity of their peer-assessment feedback on this dimension was not very high. Meanwhile, they attempted to provide more peer-assessment feedback on the dimension of content meaning enhancement. Although the quantity of such feedback was around one-third and yet to the half, the students in Case Study 3 were more willing and able to try in this

aspect, comparing to the students in Case Study 1 and Case Study 2.

The above summary reveals that elementary ESL/EFL students were able to provide peer-assessment feedback in different types and depths. The young students could actively engage in learning interaction via the action of feedback provision. Elementary ESL/EFL students from both CMI and EMI schools preferred making alterations directly when providing peer-assessment feedback items, rather than giving suggestions for writing revisions. The young students from both CMI and EMI schools put more effort on surface copy-editing in the peer-assessment tasks. These findings echo with the ones reported by Bryant and Carless (2010), Tompkins (2012) and Woo et al. (2013) that elementary school students focus on hunting the mechanical errors related grammar, punctuation and spelling aspects; and tend to correspondingly mark the possible changes on peers' writing products during the peer-assessment process in ESL/EFL writing tasks. In this study, students in EMI schools were able to pay attention to peer-assessment feedback provision for content meaning enhancement. This phenomenon concurs with the observation from Bryant and Carless (2010) and Tompkins (2010, 2012) that students who are capable in English language learning are more ready to identify weaknesses and recommend improvements of presenting ideas and organizing text when peer-assessing English writing products of their peers. The summary in this sub-section proves that the designed pedagogy was feasible for the implementation in ESL/EFL writing curriculum at the senior grades in elementary schools. The next sub-section

examines how the tasks of peer-assessment feedback provision influenced students' performance in the self-editing tasks.

7.3 The Characteristics of Students' Self-editing Revision-making across the Three Case Studies

This section summarizes the characteristics of students' writing revisions in the process of self-editing in ESL/EFL writing tasks across the three case studies. As shown in Table 7.4, the participating students in the three case studies in general were ready to make revisions in the self-editing task under the designed pedagogy.

Table 7.4. Comparison of the self-revisions among students in self-editing tasks across the three case studies.

	Case Study 1 (CMI Grade 4 ; N = 25)		**Case Study 2 (CMI Grade 4 ; N = 28)**		**Case Study 3 (EMI Grade 5 ; N = 17)**	
	N	**(%)**	**N**	**(%)**	**N**	**(%)**
Form-edits						
Grammar	51	(34.5)	46	(35.7)	23	(28.0)
Spelling	45	(30.4)	30	(23.3)	15	(18.3)
Punctuation	17	(11.5)	19	(14.6)	10	(12.2)
Sub-total	*113*	*(76.4)*	*95*	*(73.6)*	*48*	*(58.5)*
Content-edits						
Addition	13	(8.8)	9	(7.0)	12	(14.6)
Substitution	12	(8.1)	9	(7.0)	9	(11.0)
Deletion	9	(6.1)	15	(11.6)	10	(12.2)
Rearrangement	1	(0.6)	1	(0.8)	3	(3.7)
Sub-total	*35*	*(23.6)*	*34*	*(26.4)*	*34*	*(41.5)*
Total	**148**	**(100.0)**	**129**	**(100.0)**	**82**	**(100.0)**
The length of self-edited compositions						
Range of text length	80 to 190 words		58 to 191 words		73 to 736 words	
Average of text length	121.08 words		98.79 words		299.59 words	
Average number of sentences	12.16 sentences		12.21 sentences		18.82 sentences	
The counts of revision items per self-edited composition						
Range of counts of revision items	1 to 14 items		1 to 16 items		1 to 13 items	
Average number of revision items	5.92 items		5.86 items		4.82 items	
Ratio of sentences : revision items	Every 2.05 sentences with 1 revision		Every 2.08 sentences with 1 revision		Every 3.90 sentences with 1 revision	

The students in Case Study 1 demonstrated the highest frequency of revision-making in the self-editing task; whereas the students in Case Study 2 came second and those in Case Study 3 followed. The students in Case Study 1 gave 5.92 revision items per self-edited composition on average. Case Study 2 had a similar average number (5.86 revision items) in this regard. The average numbers in these two case studies, respectively, were around 1.21 times of that in Case Study 3 (4.82 revision items). This result is further verified by the average number of sentences with one revision item in the self-edited compositions. As shown in Table 7.4, the students in Case Study 1 and Case Study 2 on average made one revision in every 2.05 and 2.08 sentences, respectively. These ratios nearly doubled the one in Case Study 3 (one revision in every 3.09 sentences).

With regard to the type of self-revisions in the self-editing tasks, the participating students across the three case studies intended to make form-edits for editing the use of grammar and spelling; rather than to make content-edits for improving the clarity of content expression. This finding concurs with the observation from Moore and MacArthur (2012) and Tompkins (2010, 2012) that elementary school students were more ready to make self-revisions for correcting mechanical errors in English writing compositions after peer-assessment. The ratios of self-revisions between form-edits and content-edits are 8:2 in Case Study 1; 7:3 in Case Study 2 and 6:4 in Case Study 3. The students in Case Study 1 and Case Study 2 demonstrated a common characteristic that the quantity of form-edit revisions

was around a triple of content-edit revisions. For students in Case Study 3, the quantity of form-edit revisions was 1.4 times of content-edit revisions. This reflects that students in all three case studies shared the same focus on making form-edit revisions for improving grammar accuracy; yet differed slightly in making content-edit revisions for improving language expression. The quantity of form-edit revisions in Case Study 1 and Case Study 2, respectively, was more than 1.25 times of that in Case Study 3. In contrast, the quantity of content-edit revisions in Case Study 3 was more than 1.55 times of that in Case Study 1 and Case Study 2, respectively.

The above summary reveals that elementary ESL/EFL students were able and willing to make both form-edits and content-edits for improving grammar accuracy and language expression, respectively, in the self-editing tasks. The characteristics of students' self-editing revision-making were in line with the characteristics in their peer-assessment feedback-provision. These findings echo with the ones reported by Liu and Sadler (2003), Tompkins (2010, 2012) and Woo et al. (2011). It may be due to the fact that after experiencing the process of peer-assessment, the students, on top of their consideration of peers' revision feedback when revising their own compositions, would revise their own compositions following the way to peer-assess classmates' compositions. As students in Case Study 1 and Case Study 2 focused more on surface copy-editing in the peer-assessment tasks, it is naturally for them to extend this focus in their self-editing task. Students in Case Study 3

also gave more feedback on surface copy-editing in the peer-assessment tasks, yet they concerned both surface copy-editing and content meaning enhancement when doing peer-assessment tasks. This might lead them to make more content-edit revisions, comparing with their counterparts in Case Study 1 and Case Study 2. The next sub-section looks into the young students' thought of how manageable and positive of the designed pedagogy for advancing the quality of learning process and learning outcomes in ESL/EFL writing classrooms.

7.4 Students' Perceptions toward the Designed Technology-mediated Pedagogy across the Three Case Studies

This section summarizes students' perceptions toward the designed technology-mediated pedagogy across the three case studies. The summary focuses on four perspectives, namely the overall perception of the designed technology-mediated pedagogy across the three case studies; the specific perception of pedagogical arrangements of peer-assessment and self-editing across the three case studies; the specific perception of technological use of Edmodo and MS Word Processor across the three case studies; and the specific perception of the provision of digital devices in Case Study 2 and Case Study 3.

7.4.1 Overall Perception of the Designed Technology-mediated Pedagogy across the Three Case Studies

Table 7.5 compares the overall perception among students across the three case studies

toward the designed technology-mediated pedagogy. It is found that the participating students in the three case studies commonly showed a strong satisfaction and recognition of the three-component flow of the designed pedagogy. It is noteworthy that the participating students from all of the three partner schools asserted the positive impact of the designed pedagogy on enhancing their sense of responsibility for the peers' learning. Meanwhile, the participating students in the three case studies commonly considered that the designed pedagogy should put more efforts to enhance its potential to increase their interest in learning English language and increase their confidence in English writing.

Table 7.5. Overall perception among students across the three case studies toward the designed technology-mediated pedagogy.

Case Study	**Student Perception of the Designed Technology-mediated Pedagogy**
Most agreed aspects indicated in the questionnaire survey	
Case Study 1 (CMI Grade 4 ; N = 25)	● The flow of designed pedagogy was appropriate. ● The designed pedagogy could motivate me to become serious in my English writing tasks. ● The designed pedagogy made me feel responsible for other peers' learning.
Case Study 2 (CMI Grade 4 ; N = 28)	● I enjoy more the process of English writing after learning under the designed pedagogy. ● The designed pedagogy could motivate me to become active in learning English language. ● I was satisfied with the materials and arrangements in the designed pedagogy. ● The flow of designed pedagogy was appropriate.
Case Study 3 (EMI Grade 5 ; N = 17)	● The designed pedagogy made me feel responsible for other peers' learning. ● The flow of designed pedagogy was appropriate. ● The designed pedagogy helped me consolidate English language knowledge.
Most impressive areas indicated in the focus group discussions	
Case Study 1 (CMI Grade 4 ; N = 25)	● I can perform better in English writing after learning under the designed pedagogy. ● The designed pedagogy made me feel responsible for other peers' learning.
Case Study 2 (CMI Grade 4 ; N = 28)	● I was satisfied with the materials and arrangements in the designed pedagogy. ● I enjoy more the process of English writing after learning under the designed pedagogy.
Case Study 3 (EMI Grade 5 ; N = 17)	● The designed pedagogy made me feel responsible for other peers' learning. ● I enjoy more the process of English writing after learning under the designed pedagogy.

It is noteworthy that the participating students in the three case studies had different foci of the overall merits brought about by the designed pedagogy. In Case Study 1, the participating students focused on the cognitive benefits in relation to their performance and sense of responsibility in English learning. In Case Study 2, the participating students focused on the affective benefits related to their satisfaction and enjoyment in the learning process. In Case Study 3, the participating students focused on both cognitive and affective benefits relevant to their sense of responsibility and enjoyment in English learning.

These opinions from the participating students across all three case studies consistently affirm the effectiveness of the designed pedagogy on enhancing the quality of learning process in ESL/EFL writing classrooms. The designed pedagogy was well perceived to be appropriately designed for bringing an enjoyable learning process that motivated students to actively and seriously learn ESL/EFL writing; and also to feel more responsible for supporting the peers to learn better.

7.4.2 Specific Perception of Pedagogical Arrangements of Peer-assessment and Self-editing across the Three Case Studies

Tables 7.6 and 7.7 compare the specific perception among students across the three case studies toward the peer-assessment task and the self-editing task, respectively, in the designed technology-mediated pedagogy.

Table 7.6. Specific perception among students across the three case studies toward the peer-assessment task in the designed technology-mediated pedagogy.

Case Study	Student Perception of the Peer-assessment Task
Most agreed aspects indicated in the questionnaire survey	
Case Study 1 (CMI Grade 4 ; N = 25)	● It is necessary for me to know how to peer-assess my classmates' English writing compositions. ● I was benefited from the peer-assessment process for learning English language. ● I was confident of giving feedback in peer-assessment tasks.
Case Study 2 (CMI Grade 4 ; N = 28)	● The peer-assessment process could help me improve my English writing. ● I could think critically to give feedback in peer-assessment tasks. ● I could provide accurate and sufficient feedback to peers in peer-assessment tasks. ● The peer-assessment process could increase my interest in English writing.
Case Study 3 (EMI Grade 5 ; N = 17)	● I liked to give feedback in peer-assessment tasks. ● The peer-assessment process could help me improve my English writing. ● It was easy to give feedback in peer-assessment tasks. ● I was confident of giving feedback in peer-assessment tasks.
Most impressive areas indicated in the focus group discussions	
Case Study 1 (CMI Grade 4 ; N = 25)	● The peer-assessment process could help me improve my English writing. ● The peer-assessment process could increase my interest in English writing.
Case Study 2 (CMI Grade 4 ; N = 28)	● The peer-assessment process could help me improve my English writing. ● It was easy to give feedback in peer-assessment tasks.
Case Study 3 (EMI Grade 5 ; N = 17)	● The peer-assessment process could help me improve my English writing. ● I was confident of giving feedback in peer-assessment tasks.

Table 7.7. Specific perception among students across the three case studies toward the self-editing task in the designed technology-mediated pedagogy.

Case Study	Student Perception of the Self-editing Task
Most agreed aspects indicated in the questionnaire survey	
Case Study 1 (CMI Grade 4 ; N = 25)	● The self-editing process could help me improve my English writing. ● I felt comfortable to take feedback for making revisions in peer-assessment tasks. ● I could think critically to make revisions in self-editing tasks.
Case Study 2 (CMI Grade 4 ; N = 28)	● The self-editing process could help me improve my English writing. ● The self-editing process could increase my interest in English writing. ● I was benefited from the self-editing process for learning English language.
Case Study 3 (EMI Grade 5 ; N = 17)	● The self-editing process could help me improve my English writing. ● I liked to take feedback and then make revisions in self-editing tasks. ● It was easy to interpret feedback and then make revisions in self-editing tasks. ● I felt comfortable to take feedback for making revisions in peer-assessment tasks.
Most impressive areas indicated in the focus group discussions	
Case Study 1 (CMI Grade 4 ; N = 25)	● I could think critically to make revisions in self-editing tasks. ● The self-editing process could increase my interest in English writing. ● I was benefited from the self-editing process for learning English language.
Case Study 2 (CMI Grade 4 ; N = 28)	● It was easy to interpret feedback and then make revisions in self-editing tasks. ● The self-editing process could increase my interest in English writing.
Case Study 3 (EMI Grade 5 ; N = 17)	● It is necessary for me to know how to self-edit my own English writing compositions. ● The self-editing process could help me improve my English writing.

As shown in Tables 7.6 and 7.7, the participating students in the three case studies commonly showed a strong recognition of the potential of the peer-assessment and self-editing tasks in the designed pedagogy to help them improve English writing and better English learning. The participating students also showed their strong enjoyment of giving feedback in the peer-assessment tasks and then taking feedback for making revisions in the self-editing tasks. Meanwhile, the participating students in the three case studies commonly considered that the designed pedagogy should put more efforts to ensure the provision and receipt of accurate and sufficient feedback from their peers in peer-assessment and self-editing tasks, respectively.

For the most impressive areas related to the peer-assessment tasks, the participating students in Case Study 1 focused on the increase in their interest in English learning; whereas those in Case Study 2 and Case Study 3 had a common focus on the empowerment of their confidence to complete peer-assessment tasks. For the most impressive areas related to the self-editing tasks, the participating students in Case Study 1 focused on the potential of the self-editing task to promote them to think critically, to increase learning interest, and to improve English learning; while students in Case Study 2 focused on the ease to complete the self-editing task which could increase their learning interest; and students in Case Study 3 focused on the importance to do self-editing task which could help to improve their English writing quality.

The above summary of students' opinions on the peer-assessment and self-editing tasks further explains the positive overall perception among the participating students toward the designed pedagogy, as discussed in the previous sub-section. The participating students demonstrated enough confidence to complete the manageable and interesting process of peer-assessment and self-editing tasks; this perception is triangulated by the considerable outputs in students' peer-assessment feedback provision and the productive outcomes in students' self-editing self-revisions as summarized in sections 7.2 and 7.3. In addition, the participating students across the three case studies highly recognized the benefits of the peer-assessment and self-editing tasks to help them improve English writing performance;

this perception is substantiated by the statistically significant results in the scoring and the syntactic maturity measurement as summarized in section 7.1. These encouraging findings are in line with the ones reported by Bryant and Carless (2010), Moore and MacArthur (2012) and Woo et al. (2013) that elementary school students generally value the opportunities and recognize the benefits of peer-assessment and self-editing tasks in ESL/EFL writing lessons for bettering the process and outcomes of English learning.

The above summary also discloses the affective benefits commonly affirmed by the participating students across all three case studies. This further substantiates the feasibility and worthiness of sustaining the designed pedagogy for a better experience in the learning process in ESL/EFL writing curriculum. As shown in Tables 7.6 and 7.7, the participating students across the three case studies appreciated very much the process of giving feedback in peer-assessment tasks and the subsequent process of taking feedback in self-editing tasks. The students enjoyed the role of “Little Teachers” very much because they liked the feeling of being empowered to “mark” and “revise” other classmates’ writing compositions. They were therefore keen to try their best to offer suggestions to their peers for writing revisions. They had high interest and confidence to complete these two tasks, although they had a common concern on the possible need to ensure the provision and the receipt of accurate and sufficient feedback in these two tasks.

7.4.3 Specific Perception of Technological Use of Edmodo and MS Word Processor across the Three Case Studies

Tables 7.8 and 7.9 compare the specific perception among students across the three case studies toward the use of Edmodo and MS Word Processor in the designed technology-mediated pedagogy.

Table 7.8. Specific perception among students across the three case studies toward the use of Edmodo in the designed technology-mediated pedagogy.

Case Study	**Student Perception of the Use of Edmodo**
Most agreed aspects indicated in the questionnaire survey	
Case Study 1 (CMI Grade 4 ; N = 25)	● I liked to use Edmodo in peer-assessment tasks. ● I felt easy to use Edmodo to handle peer-assessment tasks. ● It was helpful to use Edmodo for supporting English writing tasks. ● The use of Edmodo could enhance my interaction with peers in English writing tasks.
Case Study 2 (CMI Grade 4 ; N = 28)	● The use of Edmodo could enhance the efficiency of peer-assessment tasks. ● I felt easy to use Edmodo to handle peer-assessment tasks. ● I liked to use Edmodo in peer-assessment tasks.
Case Study 3 (EMI Grade 5 ; N = 17)	● I liked to use Edmodo in peer-assessment tasks. ● I felt easy to use Edmodo to handle peer-assessment tasks. ● The use of Edmodo could enhance the efficiency of peer-assessment tasks. ● It was helpful to use Edmodo for supporting English writing tasks.
Most impressive areas indicated in the focus group discussions	
Case Study 1 (CMI Grade 4 ; N = 25)	● The use of Edmodo could enhance the efficiency of peer-assessment tasks. ● The use of Edmodo could enhance my interaction with peers in English writing tasks.
Case Study 2 (CMI Grade 4 ; N = 28)	● I liked to use Edmodo in peer-assessment tasks. ● The use of Edmodo could enhance the efficiency of peer-assessment tasks.
Case Study 3 (EMI Grade 5 ; N = 17)	● The use of Edmodo could enhance the efficiency of peer-assessment tasks. ● I will continue exploring the use of Edmodo for supporting English writing.

Table 7.9. Specific perception among students across the three case studies toward the use of MS Word Processor in the designed technology-mediated pedagogy.

Case Study	Student Perception of the Use of MS Word Processor
Most agreed aspects indicated in the questionnaire survey	
Case Study 1 (CMI Grade 4 ; N = 25)	● I felt easy to use MS Word Processor to handle peer-assessment and self-editing tasks. ● The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks. ● It was helpful to use MS Word Processor for supporting English writing tasks. ● I will continue exploring the use of MS Word Processor for supporting English writing.
Case Study 2 (CMI Grade 4 ; N = 28)	● The use of MS Word Processor in English writing tasks could motivate me to actively reflect on my areas of improvement in English writing. ● I liked to use MS Word Processor in peer-assessment and self-editing tasks. ● The use of MS Word Processor in English writing tasks could motivate me to actively identify peers' areas of improvement in English writing.
Case Study 3 (EMI Grade 5 ; N = 17)	● I felt easy to use MS Word Processor to handle peer-assessment and self-editing tasks. ● The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks. ● I liked to use MS Word Processor in peer-assessment and self-editing tasks. ● The use of MS Word Processor in English writing tasks could motivate me to actively reflect on my areas of improvement in English writing. ● The use of MS Word Processor could enhance my learning interest in English writing lessons.
Most impressive areas indicated in the focus group discussions	
Case Study 1 (CMI Grade 4 ; N = 25)	● It was helpful to use MS Word Processor for supporting English writing tasks. ● The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks.
Case Study 2 (CMI Grade 4 ; N = 28)	● The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks. ● I felt easy to use MS Word Processor to handle peer-assessment and self-editing tasks. ● It was helpful to use MS Word Processor for supporting English writing tasks.
Case Study 3 (EMI Grade 5 ; N = 17)	● The use of MS Word Processor could enhance the efficiency of peer-assessment and self-editing tasks.

The participating students in the three case studies commonly had a strong preference and confidence to use Edmodo and MS Word Processor in the designed pedagogy because of its impressive support on enhancing the efficiency of the peer-assessment and self-editing tasks. The participating students in the three case studies commonly perceived the changes-tracker and highlighter functions as the most useful functions of MS Word Processor in both the peer-assessment and self-editing tasks. Meanwhile, the participating students in

the three case studies commonly considered that the designed pedagogy should put more efforts to make the use of Edmodo and MS Word Processor more effective to motivate them to actively learn from peers' writing compositions.

The participating students from the three partner schools had slight differences in perceiving the most impressive areas related to the use of Edmodo and MS Word Processor. Regarding the use of Edmodo, the participating students in Case Study 1 were most impressed by its benefit to enhance learning interaction with peers. The students in Case Study 2 stressed their strong preference for using the Edmodo for completing peer-assessment tasks. Those in Case Study 3 focused on the willingness to continue exploring the use of Edmodo. Concerning the use of MS Word Processor, the participating students in Case Study 1 were most impressed by its effective support on ESL/EFL writing tasks. In Case Study 2, the participating students were most impressed by the ease of using MS Word Processor to perform peer-assessment and self-editing tasks. In Case Study 3, the participating students were most impressed by the enhancement of task efficiency brought about by the use of MS Word Processor in the designed pedagogy.

The above summary of students' opinions on the technological use of Edmodo and MS Word Processor further verify the positive overall perception among the participating students toward the designed pedagogy, as discussed in the sub-section 7.4.1. The strong preference and confidence among the participating students in all three case studies evidently support the

pedagogical feasibility to make the technological use of Edmodo and MS Word Processor for a more effective and efficient learning process in ESL/EFL writing curriculum. This positive result echoes the past literature with findings on the educational use of Edmodo such as Coelho et al. (2016) and Thibaut (2015), as well as on the educational use of MS Word Processor such as AbuSeileek and Abualsha'r (2014), Elola and Oskoz (2016) and Zaini and Mazdayasna (2015). Meanwhile, this study found that the designed technology-mediated pedagogy needs to put more concerns on the effect of such technological use on enhancing students' interest and motivation to actively learn from peers' writing compositions are needed for future implementation.

7.4.4 Specific Perception of the Provision of Digital Devices in Case Study 2 and Case Study 3

In the multiple case study, the participating students in Case Study 1 used tablet PCs for the trial teaching, in line with their school-based routine practice for technological use in ESL/EFL curriculum. Their counterparts in Case Study 2 and Case Study 3 were arranged by their schools to use desktop computers in school computer rooms for the technology-supported writing tasks in the trial teaching. Table 7.10 compares the specific perception among students in Case Study 2 and Case Study 3 to understand whether the types of digital devices used in the trial teaching would play a determining role in students' perception toward the designed technology-mediated pedagogy.

Table 7.10. Specific perception among students in Case Study 2 and Case Study 3 toward the provision of digital devices in the designed technology-mediated pedagogy.

	Case Study 2 (CMI Grade 4 ; N = 28)	**Case Study 3 (EMI Grade 5 ; N = 17)**
Appropriateness of using desktop computers	● 82.14% of the students agreed.	● 88.24% of the students agreed.
Feasibility to use tablet PCs	● 46.43% of the students considered better to use tablet PCs. ● 60.72% of the students hoped to use.	● 52.94% of the students considered better to use tablet PCs. ● 70.58% of the students hoped to use.
Preference for using tablet PCs	● 50.00% preferred tablet PCs	● 83.34% preferred desktop computers

Table 7.10 shows that the participating students in Case Study 2 and Case Study 3 commonly asserted the appropriateness of using desktop computers in the designed technology-mediated pedagogy. Although the participating students in Case Study 2 expressed a certain preference for using tablet PCs in the designed technology-mediated pedagogy, comparing with their counterparts in Case Study 3, desktop computers were the preferred digital devices for the designed pedagogy in these two case studies. This reveals that the designed pedagogy is feasible to be implemented in ESL/EFL classrooms with a flexible selection of digital devices to be used, ranging from the traditional computing devices such as desktop computers to the mobile computing devices such as tablet PCs.

To recap, the four-perspective summary in this section evidently confirms that the technology-mediated pedagogy was well-received by the participating students across all the three case studies. The overall implementation of the designed pedagogy was positively perceived to be appropriate for ESL/EFL writing classrooms and effective for enhancing the quality of process and outcomes in learning ESL/EFL writing. The specific pedagogical

arrangements of peer-assessment and self-editing in the designed pedagogy were well recognized to be supportive of enhancement in competence of English writing, interest in English learning and sense of learning responsibility. The specific technological use of Edmodo and MS Word Processor in the designed pedagogy was well noted to be helpful to facilitate peer interaction and enhance task efficiency in the technology-supported writing tasks. The designed pedagogy was also perceived to be feasibly implemented in ESL/EFL writing classrooms with a flexible use of digital devices, ranging from the traditional computing devices such as desktop computers to the mobile computing devices such as tablet PCs.

7.5 Reflective Implications from This Study

This section will draw research implications from the study, building on the reflective in-class observation in the trial teaching across the three case studies.

7.5.1 In-class Observation in the Trial Teaching

During the three trial teaching periods in the three case studies, four issues were noteworthy for a clearer picture on the design and impact of the technology-mediated pedagogy under investigation.

The first noteworthy issue is related to the implementation of peer-assessment task. Based on the in-class observation, the students did the peer-assessment task in a quite

independent manner. When they needed help in completing the peer-assessment task, they tended to ask the neighboring classmates face-to-face, instead of making online discussion with the other peer-assessor of the same sub-group. Many students lacked confidence in doing the peer-assessment tasks at the beginning. The instructor needed to encourage them to try the start and uplift their level of confidence from time to time. Once receiving the instructor's verbal recognition of their good start, most of the students were willing to complete the peer-assessment task on time. A few of late completion cases were found among several students who strongly disliked and/or were less achieved in English writing, as they indicated in the focus group discussions.

The second noteworthy issue is related to the technological role of Edmodo. The participating students were encouraged to discuss their opinions in the peer-assessment tasks via Edmodo when needed. The results of survey and focus group discussions show that the participating students positively perceived the role of Edmodo in facilitating interaction with peers and the instructor. In reality, the students rarely used Edmodo to interact with peers. Few cases of file-submission reminders were observed in the trial teaching period. From the instructor's perspective, Edmodo facilitated logistic work with the students, such as notice announcement, material distribution, student grouping, assignment allocation and collection, task reminder and feedback provision. From the in-class observation, the participating students mainly used the platform for the abovementioned logistic work in daily learning as

well. They did not adapt to use the platform for learning communication. They also did not spend too much time on using Edmodo for daily learning unless requested. They preferred to use other communication ways for after-class discussion with peers, such as phone call and Facebook chat. The young Grade 4 and Grade 5 students in this study were yet to be ready for and used to using the social affordances of Edmodo for supporting learning discussions with peers online; although this is one of the intentions incorporated in the design of the technology-mediated pedagogy for this study. The social learning platform is a good digital productivity tool that young students are feasible to use it for enhancing task efficiency; but unready to use it for making instant discussions with peers about writing revisions with a demanding application of high-level linguistic knowledge.

The third noteworthy issue is related to the technological role of MS Word Processor. All students across the three case studies had experience in using MS Word Processor in daily learning. From an initial check before the training sessions, the majority of participating students had no experience in using changes-tracker and highlighter functions. They also lacked an understanding of the use of spelling-check and grammar-check functions. Those students were observed to have great interest in learning the use of these four functions during the training sessions, especially the one of changes-tracker. The participating students finally used these four functions very frequently in the peer-assessment and self-editing tasks, although some students did not fully master the related use at the time of research. The

participating students also indicted they liked and recognized the use of these four functions for peer-assessing and self-editing writing compositions. In the survey and focus group discussions, the students indicated that the changes-tracker function was challenging in usage, but very useful in showing text-revisions clearly. They also indicated the spelling-check and grammar-check functions made them easier to identify language errors and more confident to mark and/or make revisions in both the peer-assessment and self-editing tasks.

The fourth noteworthy issue is related to the teaching flow of the designed pedagogy. From the in-class observation, most students were cooperative to complete the research tasks on time. Few "passive" students who strongly disliked and/or were less achieved in English writing needed more patience and encouragement from the instructor for task completion. Some "active" students who liked and/or performed well in English writing usually completed the tasks promptly and gave support to neighboring classmates when needed. The results of survey and focus group discussions show that the students agreed that the designed pedagogy helped them to improve English writing performance and consolidate English language knowledge. The students also considered the designed pedagogy could enhance their motivation to engage in ESL/EFL writing tasks seriously, as well as strengthening their responsibility to support the peers on better learning. The results of the survey reveal that more attention should be paid to the issue of enhancing students' enjoyment and interest in developing English writing competence under the designed pedagogy. However, in the focus

group discussions, all the respondents indicated they liked and were very satisfied with the designed pedagogy. When the "passive" students were further questioned about their inconsistent responses made in the survey and focus group discussions, they indicated that they disliked English writing but did agree the value of the designed pedagogy.

7.5.2 Research Implications from This Study

The trial teaching in three Hong Kong elementary schools in this study provided the empirical evidence that the designed technology-mediated pedagogy had feasible pedagogical arrangements and manageable technological use for an effective learning enhancement in ESL/EFL writing classrooms. The designed technology-mediated pedagogy can support students to achieve active, constructive and interactive learning. Three implications are drawn from this study.

First, senior elementary school students are feasible and keen to engage in pedagogical arrangements of peer-assessment and self-editing in ESL/EFL writing classrooms. As summarized in sections 7.2 and 7.3, the elementary ESL/EFL students across the three case studies were able to provide considerable quantity of peer-assessment feedback and make productive output of self-editing revisions in different types and depths. On the one hand, the participating students were able to complete each peer-assessment task within 15 minutes, with a tendency to make alterations directly on the peer-assessed writing compositions for a surface copy-editing of mistakes in grammar, spelling and punctuation. On the other hand,

the participating students were able to complete a self-editing task within 15 minutes, in which they extended their peer-assessment experience and tended to make form-edits for improving grammar accuracy of the self-edited writing compositions. Students from CMI schools were observed to focus more on the aspect of surface copy-editing for improving grammar accuracy; whereas students from EMI schools demonstrated an attempt to balance the foci between surface copy-editing for improving grammar accuracy and content meaning enhancement for improving language expression. As summarized in section 7.4, the young students in the three participating classes also appreciated very much the perceptible impact of the peer-assessment and self-editing tasks on improving their confidence and performance in ESL/EFL writing tasks, increasing their interest and enjoyment in ESL/EFL writing classrooms, and enhancing the sense of responsibility for supporting the peers and managing their own English learning. These findings imply that the designed pedagogy with the pedagogical arrangements of peer-assessment and self-editing is manageable and applauded by senior elementary school students in ESL/EFL writing classrooms.

Second, senior elementary school students are manageable and pleased to make technological use of Edmodo and MS Word Processor for completing peer-assessment and self-editing tasks. The elementary ESL/EFL students across the three case studies were found to be able and habitual to use Edmodo and MS Word Processor in the trial teaching period for everyday learning within two hours on average. As summarized in section 7.4, the

participating students in the multiple case study liked and were confident of using the two digital productivity tools for an effective support on the convenient and efficient peer interaction and files exchange in a digital way in ESL/EFL writing classrooms. The young students, regardless of their background related to the medium of instruction and experience related to such technological use, commonly demonstrated their positive attitude and willingness to use Edmodo for supporting the instant interaction among peers and MS Word Processor for supporting the efficient completion of writing tasks. The designed pedagogy was also perceived to be feasibly implemented in ESL/EFL writing classrooms with a flexible use of digital devices, ranging from the traditional computing devices such as desktop computers to the mobile computing devices such as tablet PCs. These results imply that the designed pedagogy involving technological use of Edmodo and MS Word Processor is workable and welcomed by senior elementary school students in ESL/EFL writing classrooms.

Third, senior elementary school students are able to achieve knowledge enhancement and attitudinal changes when interacting with peers through the technology-supported peer-assessment tasks and consolidating own knowledge through the technology-supported self-editing tasks. As summarized in section 7.1, the elementary ESL/EFL students across the three case studies were able to significantly enhance their grammar accuracy and syntactic maturity in their writing compositions under the designed pedagogy. As summarized in

section 7.4, the participating students in the multiple case study shared a consistent view that the designed pedagogy could improve their English writing performance and motivate them to become more active and serious in their ESL/EFL learning. Comparing with students from EMI schools, students from CMI schools achieved a greater improvement in their ESF/EFL writing performance, especially in the dimension of grammar accuracy. These results imply that the designed pedagogy is effective to support senior elementary school students on a noticeable improvement of ESL/EFL writing quality, and a perceptible enhancement of ESL/EFL learning experience.

The results of this study recommend that it is practicable and promising to implement the designed pedagogy for senior elementary school students to realize active, constructive and interactive learning in ESL/EFL writing curriculum. As shown in the four-perspective summary in section 7.4, there was a very positive perception among the senior elementary school students across all the three case studies toward the designed technology-mediated pedagogy. The students valued their role as “Little Teachers” in the technology-supported peer-assessment tasks, as they liked the feeling of being empowered to “mark” and “revise” other classmates’ writing compositions. The students were eager to receive feedback from other “Little Teachers” in the technology-supported self-editing tasks, as they liked to learn from peers about the diverse areas and possible ways of improvement in their own writing compositions. The students enjoyed using the instant communication and resource-sharing

functions of Edmodo for ensuring the efficiency of the peer-assessment tasks. The students were satisfied with the comprehensive text-editing supported by MS Word Processor for ensuring the efficiency of the peer-assessment and self-editing tasks. The pedagogical arrangements of peer-assessment and self-editing should be implemented together for an optimal potential to support the learning of English writing skills. These two tasks cannot be reciprocally replaced, in which peer-assessment tasks allow students to learn from peers; while self-editing tasks allow students to apply the knowledge, skills or ideas learned from peers. Students are able to discover language errors or areas of improvement without teacher support though the process seems routine, tedious, repetitive, iterative and stepwise.

This study attested that the designed technology-mediated pedagogy can address the three existing limitations of conventional practice in ESL/EFL writing curriculum, and thus realizing the goal of promoting students to achieve active, constructive and interactive learning in ESL/EFL writing curriculum. It is anticipated that the sustainable implementation of the three-component technology-mediated pedagogy designed in this study could greatly contribute to the continuous exposure of students to an active learning process conducive to the subsequent interactive and constructive learning process in ESL/EFL writing classrooms.

Chapter 8: Conclusion

This chapter will recap the aims, design and methodology of this study; encapsulate the research findings and implications; highlight the research contributions and recommendations; and discuss the research limitations and future studies.

8.1 Recapitulation of Research Aims, Research Design and Research Methods

8.1.1 Research Aims of This Study

This study aimed to explore a pedagogical innovation which made use of two commonly-used digital productivity tools in the local school education sector for supporting senior elementary school students in Hong Kong to enhance their competence of accurate grammar use (i.e., language forms) and appropriate language expression (i.e., communicative functions) in writing English compositions through an active, constructive and interactive learning process in the peer-assessment and self-editing tasks in the English as Second Language / English as Foreign Language (ESL/EFL) writing curriculum. The designed technology-mediated pedagogy targeted on strengthening students' learning experiences of draft-review-edit process in English writing through the use of digital productivity tools. The designed technology-mediated pedagogy targeted on strengthening students' learning experiences of draft-review-edit process in English writing through the use of digital productivity tools. This study addressed four research questions to investigate: (1) students' achievements in ESL/EFL writing tasks; (2) the characteristics of students' peer-assessment

feedback provision; (3) the characteristics of students' self-editing writing revisions; and (4) students' perceptions toward the designed pedagogy.

8.1.2 Research Design of This Study

This study explored two technology-supported pedagogical designs in everyday ESL/EFL writing classes, namely: the peer-assessment task using Edmodo, which is an increasingly-popular social learning platform for peer communication in a digital way; and the self-editing task using MS Word Processor, which is a commonly-used word processing productivity tool for text editing in a digital way. The designed three-component pedagogy progressively engaged students in (1) individual work on the double-blind peer-assessment of two writing compositions produced by two classmates; (2) teacher-led whole-class discussion about a number of typical writing errors in the writing compositions; and (3) individual work on self-editing of own writing compositions based on the feedback from the two classmates.

The designed pedagogy was attempted through a multiple case study consisting of three case studies in the real school environment in Hong Kong. Case Study 1 was conducted at a Chinese-medium school, in which a Grade 4 class with 25 students whose average age was 9.44 joined a 10-session trial teaching. Case Study 2 was conducted at another Chinese-medium school, in which a Grade 4 class with 28 students whose average age was 9.36 joined a 7-session trial teaching. Case Study 3 was conducted at an English-medium school, in which a Grade 5 class with 17 students whose average age was 9.88 joined a trial

teaching lasted for 5 sessions plus 2 online assignments. A mixed-method evaluation was conducted for an empirical investigation into the four research questions abovementioned.

8.1.3 Research Methods of This Study

The multiple study conducted a mixed-method evaluation for both quantitatively and qualitatively investigating into the four research questions.

Firstly, a two-part content analysis was conducted to identify students' achievements in grammar accuracy and language expression in English writing. The writing compositions of all 70 students in the three case studies were collected before and after the respective writing units. Students' English writing performance was quantified by scoring each composition according to a four-dimension rubric. Students' syntactic maturity was measured by counting syntactic units in each composition and calculating ratios of syntactic measurement.

Secondly, a content analysis was conducted to identify the characteristics of students' peer-assessment feedback-provision. The 1,095 peer-assessment feedback items given by all 70 students in the three case studies were collected for a classification into the four categories of the type of peer comments and then the two categories of the depth of peer comments. The number of different categories of peer comments was counted for statistical analysis.

Thirdly, a content analysis was conducted to identify the characteristics of students' self-editing revision-making. The 359 self-editing revision items made by all 70 students in the three case studies were collected for a classification into two categories, namely

form-edits and content-edits. The number of occurrence of writing revisions in different categories was counted for statistical analysis.

Fourthly, a questionnaire survey with two rounds of focus group discussions was conducted in each of the three case studies to identify students' perceptions toward the designed technology-mediated pedagogy. All 70 students in the three case studies completed a self-administered 18-item questionnaire survey at the end of the respective trial teaching. Descriptive statistics including the mean rating and corresponding standard deviation of each question item were calculated and reported. Six focus group discussions with 36 students across the three case studies followed for data triangulation. The audio-taped discussion records were processed by content analysis for a systematic summary of students' opinions.

8.2 Encapsulation of Research Findings, Research Implications and Research Contributions

8.2.1 Research Findings of This Study

The three case studies provided an evident and consistent confirmation, as reflective of the four key findings in this study, that the designed technology-mediated pedagogy is a potential to improve the learning process and learning outcomes among senior elementary school students in ESL/EFL writing classrooms.

The first key finding is students' significant improvement in the overall quality and syntactic maturity of English writing compositions. From the two-part content analysis that

scored writing quality and measured syntactic complexity of students' writing compositions before and after the trial teaching, the students could significantly enhance their overall performance, as well as the specific dimension of grammar accuracy, of their English writing compositions; and significantly increase the number of T-units in their English writing compositions.

The second key finding is students' tendency for providing alternation items as peer-assessment feedback for surface copy-editing in English writing. From the content analysis of the peer-assessed writing compositions among all of the 70 participating students across the three case studies, there were a total of 1,095 peer-assessment feedback items on the peer-assessment forms completed and returned via Edmodo. More than 70% of the peer-assessment feedback items in each case study focused on the form of alterations, which directly provided specific changes on the under-assessment writing compositions, for correcting the errors in the use of grammar, punctuation and spelling in English writing. More than 65% of the peer-assessment feedback items in each case study mainly intended for surface copy-editing for the accurate use of grammar, punctuation and spelling in English writing.

The third key finding is students' tendency for making form-edit items as self-editing revisions for enhancing grammar accuracy in English writing. From the content analysis of the self-edited writing compositions among all of the 70 participating students across the

three case studies, there were a total of 359 self-editing revision items made by the students using MS Word Processor. More than 55% of the self-editing revision items in each case study focused on form-edits for the accurate use of grammar, spelling and punctuation in English writing.

The fourth key finding is students' perceptible enhancement of learning process, learning outcomes and learning attitude in ESL/EFL writing classrooms. From the questionnaire survey with all 70 participating students coupled with six rounds of six-student focus group discussions across the three case studies, the designed pedagogy was positively perceived to be an appropriate and effective approach for enhancing the quality of process and outcomes in ESL/EFL writing classrooms. The specific pedagogical arrangements of peer-assessment and self-editing in the designed pedagogy were asserted to be helpful to enhance students' competence of English writing, interest in English learning and sense of learning responsibility. The specific technological use of Edmodo and MS Word Processor in the designed pedagogy was helpful to facilitate peer interaction and enhance task efficiency in the technology-supported writing tasks. A flexible use of digital devices, ranging from the traditional computing devices such as desktop computers to the mobile computing devices such as tablet PCs, was perceived to be feasible for the implementation of the designed pedagogy in ESL/EFL writing classrooms.

On top of the abovementioned four key findings, the three participating classes in the

multiple case study demonstrated case-specific focus on the benefits brought about by the designed pedagogy. For Case Study 1, the participating students especially recognized the cognitive benefits of the designed pedagogy to stimulate their directions on performance improvement in ESL/EFL writing. The participating students in Case Study 2 particularly valued the affective benefits of the designed pedagogy to enhance the enjoyment and satisfaction when learning ESL/EFL writing. In Case Study 3, the participating students were most impressed by the impact of the designed pedagogy on enhancing their sense of responsibility to advance the peers' and their own learning.

8.2.2 Research Implications of This Study

The positive results of this study lead to three research implications in relation to the feasibility of pedagogical arrangements, the manageability of technological use, and the effectiveness of learning enhancement in the designed technology-mediated pedagogy.

The first implication of this study is that senior elementary school students are feasible and keen to engage in pedagogical arrangements of peer-assessment and self-editing in ESL/EFL writing classrooms. The results of this study show that when senior elementary school students are guided to pay attention to the specific language knowledge involved in individual writing tasks, the young students are capable of identifying and rectifying the major language errors, in particular the ones related to grammar, spelling and punctuation, in the relevant English writing compositions. On the one hand, the students could individually

provide constructive feedback on composition revisions, in particular the alternations and suggestions for surface copy-editing. On the other hand, the students could critically make composition revisions based on peer comments, in particular the form-edits for correcting syntactic or lexical errors.

The second implication of this study is that senior elementary school students are manageable and pleased to make technological use of Edmodo and MS Word Processor for completing peer-assessment and self-editing tasks. The elementary ESL/EFL students across the three case studies liked and were confident of using the two digital productivity tools for an effective support on the convenient and efficient peer interaction and files exchange in a digital way in ESL/EFL writing classrooms. The young students in the multiple case study commonly demonstrated their positive attitude and willingness to use Edmodo for supporting the instant interaction among peers and MS Word Processor for supporting the efficient completion of writing tasks.

The third implication of this study is that senior elementary school students are able to achieve knowledge enhancement and attitudinal changes when interacting with peers through the technology-supported peer-assessment tasks and consolidating own knowledge through the technology-supported self-editing tasks. The elementary ESL/EFL students in the multiple case study were able to significantly enhance their grammar accuracy and syntactic maturity in their writing compositions under the designed pedagogy. There was a consistent

view among students across the three case studies that the designed pedagogy could improve their ESL/EFL writing performance and motivate them to become more active and serious in their ESL/EFL learning.

8.2.3 Research Contributions of This Study

This study presented an empirical multiple case study for contributing to the professional literature in the field of technology-enhanced language learning, which currently lacks sufficient empirical research on the pedagogical innovation of everyday digital productivity tools in ESL/EFL classrooms in the elementary school sector for supporting students to sustainably develop high-level syntactic knowledge. To this end, a technology-mediated pedagogy was designed and attempted in this study for an innovative integration of the pedagogical arrangements of peer-assessment and self-editing with the technological use of Edmodo and MS Word Processor in ESL/EFL writing classrooms. This study has two important knowledge contributions to the pedagogical innovations for English learning in ESL/EFL writing classrooms in elementary schools.

First, this study targeted at addressing the shift to the emergent paradigm of learner-centered learning through digital productivity tools in language learning. This study innovated a technology-mediated pedagogy that meets the flow of draft-review-edit process advocated by official ESL/EFL curriculum documents for local elementary schools; and for teachers to maintain the overall teaching support to the whole class of students, and at the

same time to foster individual learning progression of different students according to their own learning needs. This study sheds light with ESL/EFL teachers on the meaningful integration of practical pedagogies with the use of ICT for in the process-oriented ESL/EFL writing classrooms.

Second, this study targeted at investigating the process and development of English writing competence among ESL/EFL students during the classroom use of digital productivity tools in ESL/EFL writing lessons. The methodology of this study focused on the collection of empirical data on the process of peer-assessment and self-editing involving the use of digital productivity tools for active, constructive and interactive learning in the real classroom environment, which is comparatively lacking in the research community. This study provided evidence-based and process-oriented explanations for the occurrence of true learning in the use of digital productivity tools and technology-mediated pedagogies for learning in ESL/EFL writing classrooms.

All in all, the evidence-based research outcomes of this study contribute to the pedagogical advancement in the use of digital productivity tools for supporting ESL/EFL students in elementary schools to develop high-level linguistic knowledge. This study helps to reveal both the real potentials and the actual challenges in integrating digital productivity tools into ESL/EFL writing classrooms for enhancing the quality of learning, and in turn prompt opportunities for ESL/EFL students in elementary schools to the most effective

process in developing English writing competence.

This study empirically addresses the research gap in the professional literature in the field of technology-enhanced language learning on technology-supported peer-assessment and self-editing in elementary ESL/EFL writing classrooms. It evidently makes theoretical contributions in two aspects. First, this study evidently enrich the theoretical understanding that senior elementary school students are keen and manageable to take the two targeted pedagogical arrangements involving the use of the two targeted digital productivity tools for the perceptible enhancement of learning process, learning outcomes and learning attitude in ESL/EFL writing classrooms. The students tend to extend their peer-assessment experience to their self-editing process, and thus there are similar characteristics of students' peer-assessment feedback-provision and self-editing revision-making. Senior elementary school students who have opportunities for technology-supported peer-assessment and self-editing in ESL/EFL writing tasks are able and beneficial to enhance overall performance, as well as the specific dimension of grammar accuracy, of their English writing compositions; and significantly increase the number of T-units in their English writing compositions. Senior elementary school students tend to provide alternation items as peer-assessment feedback for surface copy-editing in English writing; and tend to make form-edit items as self-editing revisions for enhancing grammar accuracy in English writing.

Second, this study evidently enrich the theoretical understanding that senior elementary

school students who have higher English writing competence are more willing and ready to pay attention to the dimension of language appropriateness in the peer-assessment and self-editing tasks in ESL/EFL writing lessons. Students from EMI schools who manage to write more than 250 words per English writing task on average (as informed by the results from Case Study 3) emphasize both the enhancement of grammar accuracy and language appropriateness when doing peer-assessment and self-editing. In contrast, students in CMI schools who manage to write 120 words or less per English writing task on average (as informed by the results from Case Study 1 and Case Study 2) focus more on the enhancement of grammar accuracy in peer-assessment and self-editing.

It is anticipated that the continuous implementation of the designed technology-mediated pedagogy is a potential to support senior elementary school students to develop their competence under the learning flow common in ESL/EFL writing curriculum; and enhance the autonomy of individual learning progression on top of the overall teaching support from peers and teachers. This, in turn, will better the learning experience among the young students in ESL/EFL writing classrooms.

8.3 Research Recommendations and Future Studies

8.3.1 Research Recommendations of This Study

This study successfully provides empirical evidence that the designed technology-mediated pedagogy incorporated the pedagogical arrangements of peer-assessment and self-editing feasible for senior elementary school students with the technological use of Edmodo and MS Word Processor manageable by the targeted young students for students' effective learning enhancement in ESL/EFL writing curriculum.

From the practical experience gained in this study, students at senior elementary grades can considerably benefit from the designed pedagogy for an innovative and interesting learning process in ESL/EFL writing classrooms; despite that teachers commit to certain unseen preparatory work before and during each writing unit: (1) digitalizing and anonymizing to-be-peer-assessed compositions files, and assigning groups of peer-assessors and peer-assessees for students' peer-assessment; (2) spotting common writing errors and selecting noteworthy error examples for the whole-class discussion; and (3) collecting and distributing peer-assessed compositions files for students' self-editing.

Considering some frontline practitioners may find challenging to implement the designed pedagogy in every limited number of writing task in a semester, a possible arrangement for implementing this meaningful pedagogy can be the scheduling of special writing units after a few selected school-based writing tests. Students normally cannot

produce a perfect writing product within the test sessions as they need to submit their one-off draft within a limited time span; such writing products thus often have many language mistakes. As a common practice in the majority of local elementary schools, no comprehensive follow-ups are arranged for students to submit a rewritten version of writing test paper. This creates a good opportunity for schools to introduce the designed pedagogy to transform the one-off writing tests without feedback follow-ups, into the special meaningful writing units with peer-review support and self-revision opportunity. This arrangement is anticipated to be manageable for teachers on top of their regular workload; as the teachers already have a general picture on students' common mistakes made in the writing tests, and no extensive time is required for identifying students' writing errors in this regard. The logistic tasks on processing and collating composition files can be helped by assistants when needed.

When implementing the designed pedagogy, the teachers should express their full trust and provide full autonomy to the students for their action in peer-assessment. Students at the beginning may lack confidence to do peer-assessment tasks. The emphasis of students' identity as "Little Teachers" at the very beginning of the designed pedagogy can make them feel more comfortable and active to do the tasks. Once they get teachers' acknowledgement that every peer has his/her own mistakes, and receive teachers' encouragement that they can make contribution to help their peers by trying their best to make comments deemed suitable,

the students feel enthusiastic and responsible for their actions in the peer-assessment tasks.

8.3.2 Research Limitations and Future Studies

The designed technology-mediated pedagogy was highly appreciated by the participating students across the three case studies. There was an encouraging note for the need of the continuous implementation, as found in the student questionnaire surveys reported in the previous chapters. This engenders the need of further research building on this study. There are concerns on two research limitations in this study.

Firstly, the participants of the multiple case study involved a total of 70 senior elementary school students whose age was between 9.36 to 9.88 from two Grade 4 classes in two CMI schools and one Grade 5 class in an EMI school in Hong Kong. It is anticipated that the representativeness of the research findings in this study could be further enhanced if the multiple case study could be conducted in a larger scale, of which more participating students at the same learning grade from more different local elementary schools were involved. Future researchers are recommended to consider the need of a larger sample size for the trial of the designed pedagogy.

Secondly, the multiple case study involved solely one class of senior elementary school students in each of its three constituting case studies for receiving the special treatment in the trial teaching. It is anticipated that the representativeness of the research findings in this study could be further enhanced if the evaluation of the designed technology-mediated pedagogy in

each case study could involve a control group (viz., another class of students without the exposure to the special treatment) for the pre-test–post-test result comparison. Future researchers are recommended to consider the need of the control group, quasi-experimental approach for the evaluation of the designed pedagogy.

Apart from the concerns addressing the research recommendations and the research limitations as discussed, there are three promising directions for extending this study in future.

The first direction is to extend the investigation with a focus on the temporal effect coupled with the designed pedagogy on student learning. For example, the future studies can arrange the trial teaching in a longer period to cover several writing units in different themes. Such investigation can help to track the longitudinal influence of the designed pedagogy on the cognitive growth and affective changes among the particular sampled student groups in learning ESL/EFL writing. Considering the positive and encouraging experience gained in this study that senior elementary school students in Hong Kong are able to enhance their competence in language issues at the lexical and sentence levels in English writing tasks, it is worthwhile and promising for future research which extends this study to take elements of discourse features, on top of the language issues at the lexical and sentence levels focused in this study for senior elementary grades, into consideration when designing the peer-assessment and self-editing tasks for learning ESL/EFL writing at secondary school

grades, of which local students at these grades are expected to start developing language features at the pragmatic and semantic levels in English writing tasks.

The second direction is to extend the investigation with a focus on the peer effect coupled with the designed pedagogy on student learning. One of the possible angles of investigation is the cross-class implementation of the technology-supported peer-assessment tasks. For instance, two or more classes of students at the same learning grade, within the same school or even from different schools, can be arranged for the cross-class peer-assessment of writing compositions in the same theme. Each student will be arranged to peer-assess two writing compositions as usual, with one from the same class and one from the different class. This arrangement can help widen the circle of peer interaction and increase the level of learning interest for a more impactful stimulation to students' self-reflection on their process, responsibility and outcomes in learning ESL/EFL writing. The relatively complicated logistic work such as pairing up students from different classes as well as assigning and collecting writing compositions for students at different classes can be easily and conveniently settled by using the social learning platform Edmodo or other applicable learning platforms such as Wiki and Google Docs; in spite of the need of a thorough preparation and systematic monitoring collaborated by the responsible teachers of the different participating classes in such investigation. It should be noted that the designed technology-mediated pedagogy emphasizes the double-blind nature in the peer-assessment

process, with an intention to ensure no bias for each student when providing peer feedback for two other classmates; and then making self-revisions based on the peer feedback from two other classmates. The use of MS Word Processor will be preferred for a convenient preparation of digital writing composition files without students' information revealed; and the use of Edmodo will be preferred for an efficient management of the flow of anonymized digital writing composition files in the peer-assessment and self-editing tasks.

The third direction is to extend the investigation with a focus on the teacher support coupled with the designed pedagogy on student learning. A possible investigation is to swap the sequence of the peer-assessment tasks and the whole-class discussion. This direction is inspired by the hope expressed by some student respondents in the focus group discussions across the three case studies that the whole-class discussion can precede the peer-assessment tasks, so that students can first consolidate their knowledge targeted in the writing units and so better prepare them to give accurate and sufficient feedback in the peer-assessment tasks. In view of the encouraging experience gained from the review-discuss-edit sequence in this study, it is worthwhile for future studies to explore whether the discuss-review-edit sequence would better enhance the quality of learning process and learning outcomes among senior elementary school students in ESL/EFL writing classrooms.

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Appendix A: Peer-assessment Form for the Writing Unit in the Multiple Case Study

A. Put an "x" under the right icon. Give reason(s).

	☺☺☺	☺☺	☺	Reason(s)
Tense ● *Past tense as main-tense*				
Subject-Verb Agreement ● *Singular vs Plural*				
Use of Adjectives & Adverbs ● "*-ing" vs "-ed*" ● *"always", "sometimes", "seldom"*				
Use of Pronouns ● *"I / he / she / they"* ● *"my / his / her / their"*				
Question formation (*wh*-words) ● *"who", "whom", "why"*				
Spelling ● *Spell words correctly*				
Punctuation ● *Use punctuation marks correctly* ● *Start sentences with capital letters*				
Clarity ● *Use of Verb, Preposition, Article*				
Presentation ● *Conjunctions, Paragraphing, Spacing*				

B. Additional comments:

Appendix B: Scoring Rubric for the Evaluation of Students' Writing Compositions

Scoring area	Scoring scale
Dimension 1: Grammar Accuracy	
Area 1: Grammar use	● Score "5" – Excellent (Less than one-tenth of the text with grammatical errors) ● Score "4" – Good (Less than a quarter of the text with grammatical errors) ● Score "3" – Average (Around half of the text with grammatical errors) ● Score "2" – Below average (Around three quarters of the text with grammatical errors) ● Score "1" – Poor (Around nine-tenths of the text with grammatical errors) ● Score "0" – Absence of this component
Area 2: Spelling and punctuation	● Score "5" – Excellent (Less than one-tenth of the text with spelling and/or punctuation errors) ● Score "4" – Good (Less than a quarter of the text with spelling and/or punctuation errors) ● Score "3" – Average (Around half of the text with spelling and/or punctuation errors) ● Score "2" – Below average (Around three quarters of the text with spelling and/or punctuation errors) ● Score "1" – Poor (Around nine-tenths of the text with spelling and/or punctuation errors) ● Score "0" – Absence of this component
Dimension 2: Language Expression	
Area 3: Word choice	● Score "5" – Excellent (Less than one-tenth of the text with the misuse of vocabulary) ● Score "4" – Good (Less than a quarter of the text with the misuse of vocabulary) ● Score "3" – Average (Around half of the text with the misuse of vocabulary) ● Score "2" – Below average (Around three quarters of the text with the misuse of vocabulary) ● Score "1" – Poor (Around nine-tenths of the text with the misuse of vocabulary) ● Score "0" – Absence of this component
Area 4: Sentence fluency	● Score "5" – Excellent (Less than one-tenth of the text with repetitive phrasal- and/or sentential-patterns) ● Score "4" – Good (Less than a quarter of the text with repetitive phrasal- and/or sentential-patterns) ● Score "3" – Average (Around half of the text with repetitive phrasal- and/or sentential-patterns) ● Score "2" – Below average (Around three quarters of the text with repetitive phrasal- and/or sentential-patterns) ● Score "1" – Poor (Around nine-tenths of the text with repetitive phrasal- and/or sentential-patterns) ● Score "0" – Absence of this component

[adapted from Tompkins (2010, 2012)]

Appendix C: Survey Questionnaire on Students' Perception of the Designed Pedagogy

Please "✓" the appropriate option in each question.

A. The Learning Process

1. How much time do you spend on using **Edmodo** for learning **every day on average**?
□ Less than 1 hr □ 1-2 hr □ 2-3 hr □ 3-4 hr □ More than 4 hr

2. How much time do you spend on using **MS Word Processor** for learning **every day on average**?
□ Less than 1 hr □ 1-2 hr □ 2-3 hr □ 3-4 hr □ More than 4 hr

3. **Prior to this research**, do you have experience in **peer-assessment task (同儕互評任務)** in normal English writing lessons?
□ Yes □ No

4. **Prior to this research**, do you have experience in **self-editing task (自我修訂任務)** in normal English writing lessons?
□ Yes □ No

5. **Prior to this research**, do you have experience in using the following **functions of MS Word Processor**?

	Yes	No
(a) Changes-tracker (追蹤修訂)	□	□
(b) Highlighter (文字醒目提示色彩)	□	□
(c) Change of font color (變換字型色彩)	□	□
(d) Cut, Copy & Paste (文字的剪下 & 複製 & 貼上)	□	□
(e) Spelling-check (拼字檢查)	□	□
(f) Grammar-check (文法檢查)	□	□

6. **Prior to this research**, do you have experience in **using MS Word Processor for doing peer-assessment task (同儕互評任務)** in normal English writing lessons?
□ Yes □ No

7. **Prior to this research**, do you have experience in **using MS Word Processor for doing self-editing task (自我修訂任務)** in normal English writing lessons?
□ Yes □ No

8. **In this research**, how much time did you spend on **EACH peer-assessment task (同儕互評任務) on average**?
□ Less than 10 min □ 10-15 min □ 16-20 min □ 21-25 min □ More than 25 min

9. **In this research**, how much time did you spend on **EACH self-editing task (自我修訂任務) on average**?
□ Less than 10 min □ 10-15 min □ 16-20 min □ 21-25 min □ More than 25 min

10. **In this research**, which **THREE** of the following **functions of MS Word Processor** were used **most frequently**?

(a) Changes-tracker (追蹤修訂)	□
(b) Highlighter (文字醒目提示色彩)	□
(c) Change of font color (變換字型色彩)	□
(d) Cut, Copy & Paste (文字的剪下 & 複製 & 貼上)	□
(e) Spelling-check (拼字檢查)	□
(f) Grammar-check (文法檢查)	□

B. The Learning Perception: Pedagogy of Peer-Assessment (同儕互評)

11. For the pedagogy of **peer-assessment (同儕互評)**:	Very agree	Agree	Neutral	Disagree	Very disagree
(a) I **liked** to give feedback in peer-assessment tasks.	□	□	□	□	□
(b) It was **easy** to give feedback in peer-assessment tasks.	□	□	□	□	□
(c) I was **confident** of giving feedback in peer-assessment tasks.	□	□	□	□	□
(d) The peer-assessment process could **help me improve my English writing**.	□	□	□	□	□
(e) I could think **critically** to give feedback in peer-assessment tasks.	□	□	□	□	□
(f) The peer-assessment process could increase my **interest** in English writing.	□	□	□	□	□
(g) I could provide **accurate and sufficient** feedback to peers in peer-assessment tasks.	□	□	□	□	□
(h) **It is necessary for me to know** how to peer-assess my classmates' English writing compositions.	□	□	□	□	□
(i) **I was benefited** from the peer-assessment process for learning English language.	□	□	□	□	□

C. The Learning Perception: Pedagogy of Self-Editing (自我修訂)

12. For the pedagogy of **self-editing (自我修訂)**:	Very agree	Agree	Neutral	Disagree	Very disagree
(a) I **liked** to take feedback and then make revisions in self-editing tasks.	□	□	□	□	□
(b) It was **easy** to interpret feedback and then make revisions in self-editing tasks.	□	□	□	□	□
(c) I felt **comfortable** to take feedback for making revisions in peer-assessment tasks.	□	□	□	□	□
(d) The self-editing process could **help me improve my English writing**.	□	□	□	□	□
(e) I could think **critically** to make revisions in self-editing tasks.	□	□	□	□	□
(f) The self-editing process could increase my **interest** in English writing.	□	□	□	□	□
(g) The feedback given by peers was **accurate and sufficient** for my self-editing task.	□	□	□	□	□
(h) **It is necessary for me to know** how to self-edit my own English writing compositions.	□	□	□	□	□
(i) **I was benefited** from the self-editing process for learning English language.	□	□	□	□	□

D. The Learning Perception: Technology of Edmodo

13. For the technological use of **Edmodo**:	Very agree	Agree	Neutral	Disagree	Very disagree
(a) I **liked** to use Edmodo in peer-assessment tasks.	□	□	□	□	□
(b) The use of Edmodo could enhance the **efficiency** of peer-assessment tasks.	□	□	□	□	□
(c) I felt **easy** to use Edmodo to handle peer-assessment tasks.	□	□	□	□	□
(d) The use of Edmodo could enhance my learning **interest** in English writing lessons.	□	□	□	□	□
(e) It was **helpful** to use Edmodo for supporting English writing tasks.	□	□	□	□	□
(f) The use of Edmodo could enhance my **interaction** with peers in English writing tasks.	□	□	□	□	□
(g) The use of Edmodo could motivate me to **actively learn from peers' writing compositions**.	□	□	□	□	□
(h) I will **continue exploring the use of Edmodo** for supporting English writing.	□	□	□	□	□

E. <u>The Learning Perception: Technology of MS Word Processor</u>

14. For the technological use of **MS Word Processor**	Very agree	Agree	Neutral	Disagree	Very disagree
(a) I **liked** to use MS Word Processor in peer-assessment and self-editing tasks.	□	□	□	□	□
(b) The use of MS Word Processor could enhance the **efficiency** of peer-assessment and self-editing tasks.	□	□	□	□	□
(c) I felt **easy** to use MS Word Processor to handle peer-assessment and self-editing tasks.	□	□	□	□	□
(d) The use of MS Word Processor could enhance my learning **interest** in English writing lessons.	□	□	□	□	□
(e) It was **helpful** to use MS Word Processor for supporting English writing tasks.	□	□	□	□	□
(f) The use of MS Word Processor in English writing tasks could motivate me to **actively identify peers' areas of improvement** in English writing.	□	□	□	□	□
(g) The use of MS Word Processor in English writing tasks could motivate me to **actively reflect on my areas of improvement** in English writing.	□	□	□	□	□
(h) I will **continue exploring the use of MS Word Processor** for supporting English writing.	□	□	□	□	□

15. In the **peer-assessment tasks (同儕互評任務)** of this research, which **THREE** of the following **MS Word Processor functions** were **most useful**?

(a) Changes-tracker (追蹤修訂) □
(b) Highlighter (文字醒目提示色彩) □
(c) Change of font color (變換字型色彩) □
(d) Cut, Copy & Paste (文字的剪下 & 複製 & 貼上) □
(e) Spelling-check (拼字檢查) □
(f) Grammar-check (文法檢查) □

16. In the **self-editing tasks (自我修訂任務)** of this research, which **THREE** of the following **MS Word Processor functions** were **most useful**?

(a) Changes-tracker (追蹤修訂) □
(b) Highlighter (文字醒目提示色彩) □
(c) Change of font color (變換字型色彩) □
(d) Cut, Copy & Paste (文字的剪下 & 複製 & 貼上) □
(e) Spelling-check (拼字檢查) □
(f) Grammar-check (文法檢查) □

F. The Learning Perception: The Technology-Mediated Pedagogy (整體教學法)

17. For the **technology-mediated pedagogy (整體教學法)**:	Very agree	Agree	Neutral	Disagree	Very disagree
(a) The flow of designed pedagogy was **appropriate**.	□	□	□	□	□
(b) I was **satisfied** with the materials and arrangements in the designed pedagogy.	□	□	□	□	□
(c) The designed pedagogy **should be continued** in normal English writing lessons.	□	□	□	□	□
(d) The designed pedagogy could motivate me to **reflect** more on my English writing performance.	□	□	□	□	□
(e) The designed pedagogy could motivate me to become **serious** in my English writing tasks.	□	□	□	□	□
(f) The designed pedagogy could motivate me to become **active** in learning English language.	□	□	□	□	□
(g) The designed pedagogy made me feel **responsible for my own learning**.	□	□	□	□	□
(h) The designed pedagogy made me feel **responsible for other peers' learning**.	□	□	□	□	□
(i) The designed pedagogy helped me **consolidate** English language knowledge.	□	□	□	□	□
(j) The designed pedagogy could increase my **interest** in learning English language.	□	□	□	□	□
(k) I **enjoy** more the process of English writing after learning under the designed pedagogy.	□	□	□	□	□
(l) I become **more confident** of writing in English after learning under the designed pedagogy.	□	□	□	□	□
(m) I can **perform better** in English writing after learning under the designed pedagogy.	□	□	□	□	□

G. The Learning Perception: Provision of Digital Devices (數碼工具運用)

18. For **the use of digital devices (1-computer to 1-student) [數碼工具運用(一人一電腦)]**:	Very agree	Agree	Neutral	Disagree	Very disagree
(a) The use of **desktop computers** in the designed pedagogy was **appropriate**.	□	□	□	□	□
(b) It would be **better** to use **tablet PCs** in the designed pedagogy.	□	□	□	□	□
(c) I hope to use **tablet PCs** in the designed pedagogy.	□	□	□	□	□

*** I think it would be (please circle: **better / the same / worse)** to use **tablet PCs** in the designed pedagogy, because …

_____

_____

H. Other Comments

~ ~ ~ End ~ ~ ~

Appendix D: Guide Sheet for Focus Group Discussion about the Designed Pedagogy

1. **Prior to this research,** what was your understanding of **peer-assessment task (同儕互評任務)** and **self-editing task (自我修訂任務)**?

2. **After this research,** how do you perceive the **peer-assessment task (同儕互評任務)** in English writing? The reasons are …
   (a) like
   (b) easy
   (c) confident
   (d) help to improve English writing
   (e) think critically
   (f) increase learning interest
   (g) able to provide accurate and sufficient feedback
   (h) necessary to know how to do peer-assessment
   (i) beneficial to English language learning

3. **After this research,** how do you perceive the **self-editing task (自我修訂任務)** in English writing? The reasons are …
   (a) like
   (b) easy
   (c) confident
   (d) help to improve English writing
   (e) think critically
   (f) increase learning interest
   (g) receive accurate and sufficient feedback
   (h) necessary to know how to do self-editing
   (i) beneficial to English language learning

4. **In this research,** how do you perceive the use of **Edmodo**? The reasons are …
   (a) like
   (b) enhance efficiency
   (c) easy
   (d) enhance learning interest
   (e) support English writing tasks
   (f) enhance learning interaction with peers
   (g) motivate to actively learn from peers' writing compositions
   (h) willing to continue exploring its use

5. **In this research,** did the use of **Edmodo important / helpful**? The reasons are …

6. **In this research,** how do you perceive the use of **MS Word Processor**? The reasons are …
   (a) like
   (b) enhance efficiency
   (c) easy
   (d) enhance learning interest
   (e) support English writing tasks
   (f) motivate to actively identify peers' areas of improvement
   (g) motivate to actively reflect on my areas of improvement
   (h) willing to continue exploring its use

7. **In this research,** did the use of **MS Word Processor important / helpful**? The reasons are …

8. How do you perceive the **flow of designed pedagogy in this research**? The reasons are …

   Peer-assessment (同儕互評) >>> Whole-class discussion (全班討論) >>> Self-editing (自我修訂)

   (a) appropriate
   (b) satisfied
   (c) should be continued
   (d) motivate self-reflection
   (e) motivate to learn seriously
   (f) motivate to learn actively
   (g) feel responsible for my own learning
   (h) feel responsible for other peers' learning
   (i) help knowledge consolidation
   (j) increase learning interest
   (k) enjoy learning
   (l) more learning confidence
   (m) better learning performance

9. How do you perceive the use of **digital devices (1-computer to 1-student) [一人一電腦運用] in this research** ? The reasons are …

   Is the use of desktop computers appropriate? ~~~ Would it be better / the same / worse to use tablet PCs?