USING A WEB-BASED TOOL TO GUIDE SELF-REGULATED LEARNING IN SECONDARY SOCIAL STUDIES CLASSROOMS

LIM SEO HONG

NATIONAL INSTITUTE OF EDUCATION
NANYANG TECHNOLOGY UNIVERSITY
2019
Using a Web-Based Tool to Guide Self-Regulated Learning in Secondary Social Studies Classrooms

Lim Seo Hong

A thesis submitted to the
National Institute of Education,
Nanyang Technology University
in fulfilment of the requirement for the degree of
Doctor of Philosophy

2019
Statement of Originality

I hereby certify that the work embodied in this thesis is the result of original research and has not been submitted for a higher degree to any other University or Institution. In addition, I declare that to the best of my knowledge, this thesis is free of plagiarism, and contains no material previously published or written by another person, except where due reference has been made in the text.

19 August 2019

Date

Lim Seo Hong

Signature

..................................

Name
Supervisor Declaration Statement

I have reviewed the content and presentation style of this thesis, and I declare that it is free of plagiarism and of sufficient grammatical clarity to be examined. To the best of my knowledge, the research and writing are those of the candidate except as acknowledged in the text and/or the Author Attribution Statement. I confirm that the investigations were conducted in accord with the ethics policies and integrity standards of Nanyang Technological University and that the research data are presented honestly and without prejudice.

Date

Supervisor Signature

Supervisor Name
Authorship Attribution Statement

*(B) This thesis contains material from a paper accepted at a conference in which I am listed as an author.

Chapter 4 and 5 were presented at (1) The NIE Graduate Student Conference, 2016. The contribution of the co-author is as follows:

- I prepared the conference drafts and it was edited by Associate Prof. Baildon, Mark Charles.

19 August 2019

Signature

Lim Seo Hong

Date

Name
Dedication

To Chenlyn, Karyn, and Zhi Hao.
Acknowledgements

Before my father passed away, he told me that: “you are a good child, but you do not like to study.” Reflecting back, I think his words gave me enormous strengths to pursue postgraduate studies. While in Canada, my partner, Jorge encouraged me to return to University and he has been a strong supporter of my lifelong learning ever since then. During these years of my studies, my sister, Sheau Yin has been taking good care of my mum, and giving me the time to concentrate on my studies.

Along this learning journey, I met another extraordinary supporter, my supervisor, Dr Mark Baildon has guided me over the years to work with different school teachers in making the implementation of the CWR with upper secondary students a reality. He has been my writing mentor who consistently offered clear comments, feedback, and insightful perspectives in helping me to progress as a more experienced and skilled researcher, writer, and learner.

I am grateful to all the teachers and students who participated in this research and welcomed me into their schools, classrooms, and shared their learning experiences. They provided invaluable opportunities for me to learn tremendously from them. I am thankful to Dr Ng Swee Fong, Dr Ho Weng Kin, Dr Lay Hoon Seah, Dr Kiat Hui Khng, and Dr Victor Chen who have shown exceptional attention and patience in guiding me during the learning process.
# Table of Contents

1 Chapter One: Introduction .................................................................................................... 1  
   1.1. Background and Problem Statement ........................................................................ 1  
   1.2. Purpose of the Study and Research Questions ......................................................... 5  
   1.3. Context of Singapore Social Studies ......................................................................... 8  
   1.4. Significance of the Study ......................................................................................... 10  
   1.5. Outline of the five chapters .................................................................................... 11  
   1.6. Definition of Terms ............................................................................................... 13  

2 Chapter Two: Literature Review ........................................................................................ 15  
   2.1. Technology Integration and Learner-Centered Practices (LCP) ................................. 15  
   2.2. Self-Regulated Learning (SRL) ............................................................................... 18  
   2.3. Historical Perspective of SRL ................................................................................. 20  
       Operant theoretical perspectives of SRL ................................................................. 21  
       Phenomenological theoretical perspectives of SRL ............................................... 22  
       Information processing theoretical perspectives of SRL ........................................ 22  
       Social cognitive theoretical perspectives of SRL ..................................................... 23  
       Volitional theoretical perspectives of SRL ............................................................... 24  
       Sociocultural: Vygotskian theoretical perspectives of SRL ..................................... 25  
       Cognitive constructivist theoretical perspectives of SRL ........................................ 26  
   2.4. Guiding Theoretical Frameworks: Social Cognitive and Sociocultural Theories ...... 28  
       Social cognitive theory: Zimmerman’s model of SRL ............................................. 29  
       SRL in a computer-based learning environment: An illustrative example. ............... 34  
       Sociocultural theory ............................................................................................... 37  
       Zone of proximal development (ZPD) ...................................................................... 38  
       The Scaffolding Metaphor ....................................................................................... 39  
   2.5. Computer-Based Learning Environment .................................................................. 43  
   2.6. The Critical Web Reader (CWR) ............................................................................. 47  
   2.7. Contexts of Singapore Social Studies ..................................................................... 52  
   2.8. Summary ............................................................................................................. 54  

3. Chapter Three: Methodology .......................................................................................... 57  
   3.1. Design ................................................................................................................... 58  
   3.2. Methods ................................................................................................................ 60
Purposeful sampling........................................................................................................................... 60
Research sites.................................................................................................................................. 61
Procedure ......................................................................................................................................... 63

2 Maya .......................................................................................................................................... 66
Participants .................................................................................................................................. 67

3.3. Subjectivity of the Researcher ........................................................................................ 86
3.4. Data Collection ......................................................................................................................... 89
    Focus group interview ................................................................................................................. 89
    Documentation: CWR students’ online responses ................................................................. 94
    Trustworthiness ......................................................................................................................... 95
3.5. Data Analysis ......................................................................................................................... 97
3.6. Textual Analysis ..................................................................................................................... 108
3.7. Ethical Concerns .................................................................................................................. 108
3.8. Summary ............................................................................................................................... 109

4. Chapter Four: Findings ...................................................................................................... 112

4.1. Finding 1: Critical Web Reader (CWR) provides certain support and constraints for learning ......................................................................................................................... 116
    Support ................................................................................................................................ 116
    Constraints .............................................................................................................................. 126

4.2. Finding 2: SRL prompts assisted students’ learning of social studies ......................... 131
    Identifying key information .................................................................................................... 132
    SRL lenses prompted students to think more about information in the source .................. 134
    Cultivate self-questioning ...................................................................................................... 136

4.3. Finding 3: Students’ conceptions of social studies affect their views on the usefulness of the CWR ................................................................................................................................. 140
    Interest .................................................................................................................................. 141
    Lack of interest ....................................................................................................................... 143
    Learners’ strategies and preferences in learning ................................................................. 148
    Learners’ perspectives of learning social studies ............................................................... 154
    Career aspiration .................................................................................................................... 156

4.4. Finding 4: Students’ key learning approaches ............................................................. 162
    Help seeking from teachers ................................................................................................. 163
    Independent learning ............................................................................................................ 166
    Memorization ......................................................................................................................... 173
Prior knowledge activation.............................................................................................................. 177

4.5. Finding 5: Planning increases students’ engagements in learning......................... 179
Planning ...................................................................................................................................... 179
Minimal planning ....................................................................................................................... 186

4.6. Finding 6: Monitoring increases students’ participations in active learning........... 193
Monitoring ................................................................................................................................... 194
Minimal monitoring .................................................................................................................... 202

4.7. Finding 7: Self-reflection decreases students’ participation in learning.................. 210
Self-reflection .............................................................................................................................. 211
Minimal self-reflection ............................................................................................................... 214

5. Chapter Five: Discussion .................................................................................................... 231

5.1 Discussion: Research question one (RQ1)................................................................. 231
RQ1: To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning? ................................................................. 231

5.2 Discussion: Research question two (RQ2)................................................................. 251

5.3 Conclusion......................................................................................................................... 277

5.4 Implications .................................................................................................................... 280

5.5 Limitations ....................................................................................................................... 282

5.6 Directions for future research...................................................................................... 285

6. References............................................................................................................................ 289

7. Appendix A: Student Assent Form .................................................................................. 309

8. Appendix B: Parent Consent Form .................................................................................. 311

9. Appendix C: Interview Questions for Students ............................................................... 313
### List of Figures

1. Figure 2-1 Phases and subprocesses of self-regulation ............................................................... 29
2. Figure 2-2 An example of the CWR interface ........................................................................... 47
3. Figure 2-3 An example of a CWR interface with an online video source ................................. 49
4. Figure 2-4 An example of a pop-up definition .......................................................................... 50
5. Figure 2-5 A screenshot of the Critical Web Reader (CWR) learning environment with scaffold for supporting self-reflection. ....................................................................................................... 52
6. Figure 3-1 A screenshot of the CWR activity............................................................................. 92
7. Figure 3-2 A screenshot of the CWR with embedded self-regulated learning lens................. 93
8. Figure 5-1 The impacts of the CWR integration in enhancing students’ engagements........ 232
9. Figure 5-2 Two opposing perspectives concerning technology integration ......................... 236
10. Figure 5-3 The effectiveness of SRL prompts. ........................................................................ 238
11. Figure 5-4 The differences and similarity between two distinct groups of students ......... 243
12. Figure 5-5 A comparison between students in the two different planning categories ....... 263
13. Figure 5-6 Monitoring differences between the two groups of students. ......................... 269
14. Figure 5-7 Differences between the two groups of students ............................................... 274
List of Tables

1 Table 3-1 Summary of activity types, dates, and number of participants................................. 66

2 Table 3-2 Participants’ demographic characteristics ................................................................. 67

3 Table 3-3 Development of Themes (Partial examples from transcript) ............................. 101

4 Table 4-1 Summary of seven findings and categories with different subcategories ............ 112

5 Table 4-2A Finding 1: The first category and subcategories to answer RQ1 ........................ 116

6 Table 4-2B Finding 1: The second category and subcategories to answer RQ1 ..................... 126

7 Table 4-3 Finding 2: Four categories in answering RQ1 ......................................................... 132

8 Table 4-4 Learner's experience with SRL prompts ................................................................. 138

9 Table 4-5 Finding 3: Five categories in relation to answering RQ1 .......................................... 140

10 Table 4-6 Finding 3: A comparison of CWR online responses from participants of different interest categories .................................................................................................................. 145

11 Table 4-7 Finding 4: Four categories to answer RQ2 ............................................................ 163

12 Table 4-8 Common learning approaches reported by help seeking and independent participants ........................................................................................................................................... 168

13 Table 4-9 Finding 5: Two categories with subcategories to answer RQ2 ............................. 179

14 Table 4-10 Finding 6: Two categories with subcategories to answer RQ2 ......................... 193

15 Table 4-11 Monitoring versus Minimal Monitoring ............................................................ 204

16 Table 4-12 Finding 7: Two categories and subcategories to answer RQ2 ............................ 210

17 Table 4-13 A comparison of CWR online responses from participants of Self-reflection and Minimal self-reflection groups. ........................................................................................................... 224
Summary

Globalization and technology are rapidly transforming people’s lives. In a future filled with uncertainty, students need the competencies of self-regulated learning in order to learn and adapt to an increasingly complex social reality. Similarly, the shift from a teacher-centered practice to student-centered approach is critical to help students develop the self-regulated learning strategies they will be able to employ as independent life-long learners.

To effectively learn social studies, a multidisciplinary subject, students need sophisticated thinking skills in order to understand complex social issues, such as globalization. To understand and address these issues, they need to compare multiple information sources, and evaluate and synthesize information in a coherent manner. In a student-centered classroom, learners need to move away from the habits of passively learning information to actively setting their own goals and monitoring and reflecting on their learning progress. However, these learning processes can be a difficult task for struggling or novice students to perform.

To assist these learners, computer-based learning environments can present a range of multiple representations through multimodal text, video, and animation for them to learn in social studies. Therefore, this research study aims to understand how to better support students to become active learners by scaffolding their learning through the use of an educational tool, the Critical Web Reader, to guide their self-regulatory processes during social studies’ classes. To understand students’ perception of self-regulated learning, this study draws from two influential theoretical frameworks: the social cognitive and the sociocultural perspectives.

The qualitative case study methodology was used to collect upper secondary students’ perceptions on the CWR integration and applications of self-regulated learning strategies. A
A purposeful sampling method was used to select forty-four (N=44) participants based on mixed abilities, diversity in cultural groups, gender, and willingness to share their learning experiences. Prior to the commencement of the research, NTU IRB approval had been obtained to conduct this study. Subsequently, the student assent form and parent consent form were given to students and their parents. For data collection, the semi-structured focus group interview questions were the main instrument. To triangulate data, the CWR online documentation of students’ responses were utilized for comparison between interview data and written responses.

This study used the constant comparative analysis method (CCA) to analyse the collected interview data. After this inductive analysis, the researcher further employed deductive analysis to identify concepts for the purpose of developing further interpretations. Seven main findings emerged to address the two research questions: 1) Critical Web Reader provides certain support and constraints for learning; 2) Critical Web Reader lenses supported self-regulated learning; 3) students’ conceptions of social studies affect their views on the usefulness of the Critical Web Reader; 4) students’ key learning approaches; 5) planning increases students’ engagements in learning; 6) monitoring increases students’ participations in active learning; and 7) self-reflection decreases students’ participation in learning.

Finally, the seven findings were discussed to suggest technology implementation can be a potential method to increase the motivation of students who lack interest in social studies. The discussion further pointed out the role of students’ conceptions, learning approaches, and efforts to plan, monitor, and reflect on their learning. The discussion concludes with implications, limitations, and directions for future research.
1 Chapter One: Introduction

1.1. Background and Problem Statement

Over the past four decades, in Singapore, education has played a vital role in transforming this small island into a highly industrialized country. Gopinathan and Mardiana (2013) note that education functions as a means for social cohesion, economic development, and nation building. Under such circumstances, the prescribed national curriculum with a high-stakes examination system has directed classroom practice toward traditional and didactic approaches (Deng, Gopinathan, & Lee, 2013). Teachers tend to view teaching as knowledge transmission and learning as memorizing and drill and practice (Deng & Gopinathan, 1999; Hogan, Chan, Rahim, Kwek, Maung, Loo, & Luo, 2013). Subsequently, in a teacher-centered classroom, there is a lack of teaching for higher order thinking, innovative use of ICT, and knowledge construction (Deng et al, 2013; Hogan et al, 2013).

In the current globalized world, the rise of digital technology is permeating and changing people’s lives. At the same time, learning will take place in all kinds of contexts and venues throughout individuals’ lives. Lifelong learning applies not only to students but teachers through formal contexts such as schools, universities, and out-of-classrooms during one’s lifespan (Steffens, 2015).

Lifelong learning refers to “all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence with a personal, civic, social and/or employment-related perspective” (European Commission, 2001, p. 9). However, in order to learn, it is fundamental to comprehend the notion of learning and the ways it can be attained. Therefore, learning to learn or self-regulated learning (Steffens, 2011) has become so important
that one must learn how to best tackle it and cultivate the habit of mind to think critically and analytically about learning (Illeris, 2007).

In view of rapid global changes concerning the Asia-Pacific countries, Singapore Prime Minister Lee Hsien Loong (2012, p.3) stated that people must become more innovative in their education systems, and better prepare children for the future:

“No education system can remain static. The world is changing rapidly. Technology is transforming our lives. The skills needed in the future will be very different from those needed today. Education offers each individual and nation the best chance of navigating an unknown future – coping with uncertainty, adapting to evolving conditions and learning how to learn.”

Clearly, the Prime Minister is suggesting that a different set of skills will be needed in the future. He highlights that education is a way for each individual to learn how to learn. The concept of learning how to learn is not a novel idea. It is worth noting that learning to learn or self-regulated learning has a long tradition in European pedagogy since late 1970s (Steffens, 2011). Self-regulated learning emerged in the US during the 1970s and 80s (Zimmerman 2008) and ever since then the literature on self-regulated learning has grown substantially.

Self-regulated learning or learning to learn is one of the eight 21st century key competences adopted by the European Parliament and the European Council in December 2006 as ‘Recommendations on Key Competences for Lifelong Learning’ (European Council, 2006). In addition to self-regulated learning, digital proficiency is another crucial 21st century key competence.

However, the above raises questions such as how does a high-stakes examination system with traditional didactic classroom practice facilitate opportunities for students to self-regulate
their learning? How do students perceive self-regulated learning? What are their levels of competencies in self-regulated learning?

To facilitate and assist students’ development of self-regulated learning, a substantial number of research studies shows that scaffolding prompts can be successful when combined with self-regulated training (Bannert & Reimann, 2012; Winters, Greene, & Costich, 2008). The scaffolding prompts are brief reminders of metacognitive activities embedded in computer-based learning environments to support learning of self-regulated learning strategies while on tasks.

Notably, technology integration is a complex task because most students have developed the deeply ingrained habits of being passive recipients of knowledge through years of familiar teacher-centered classroom experiences (Hung, 2011; Rasku-Puttonen, Eteläpelto, Arvaja, & Päivi Häkkinen, 2003; Ladewski, Krajcik, & Harvey, 1994;). Thus, the shift from a teacher-centered approach to student-centered is crucial for students to actively engage with technology (Rahimi, 2014). English and Kitsantas (2013) suggest that a student-centered approach within a computer-based learning environment can be facilitated by developing students’ self-regulated learning skills.

In a student-centered classroom, knowledge is no longer transmitted from teachers to learners, rather students are encouraged to take responsibility of their own learning (Chang, 2005). The concept of responsibility refers to the setting of learning goals, monitoring progress toward meeting these goals, and adjusting or adapting approaches in order to achieve favorable outcomes (Hannafin, Hannafin, & Gabbitas, 2009). This self-regulated learning process enables students to effectively engage and be successful in computer-based learning environments (Greene, Moos, & Azevedo, 2011).
Most models of self-regulated learning demonstrate multiple and recursive stages incorporating cognitive processes such as planning, monitoring, and reflection (Butler & Winne, 1995; Greene & Azevedo, 2007; Pintrich, 2004; Schraw, Crippen, & Hartley, 2006; Winne & Hadwin, 1998; Zimmerman & Schunk, 2001). During the planning phase, self-regulated students analyze the learning task and create plans for goal attainment. In the monitoring phase, they select and apply strategies to complete the task. Subsequently, in the reflection phase, they reflect on their approaches in order to further improve understanding of the learning task.

A comparison of self-regulated learners and struggling students shows that the former is able to monitor their learning; whereas the latter are likely to become distracted, unable to regulate larger amount of information, and susceptible to losing interest (Bernacki, Aguilar, & Byrnes, 2011; Narciss, Proske, & Korndle, 2007). Additionally, the former possesses a range of approaches for regulatory purposes; while the latter often lack the strategies necessary for self-regulation (Jakubowski & Dembo, 2004; Hodges & Kim, 2010).

Given the preponderance of empirical research evidence, it appears that a framework of self-regulated learning should be an integral component of the school curriculum (Camahalan, 2006; Nota, Soresi, & Zimmerman, 2004). However, less is known about how students can be guided to develop self-regulated learning strategies; and the role of technology in facilitating such skills. As a result, there is a paucity of research focusing on self-regulated learning in relation to computer-based learning environments for learning social studies.

To effectively learn a multidisciplinary subject such as social studies, students need complex thinking skills in order to engage with multiple information sources, consider different perspectives, and synthesize information in a coherent manner (Baildon & Damico, 2011).
Computer-based learning environments with their affordances of multiple representations through multimodal text, video, and animation can benefit students’ learning in social studies. Moreover, in a fast-changing digital world, the use of technology forms part of students’ daily lives and they are constantly surrounded by a constellation of digital devices for accessing, sharing, and managing knowledge. Subsequently, they may have different expectations concerning the nature and quality of their learning experience (Pedro, 2009). Therefore, the aim of this study is two-fold: first, to explore upper secondary social studies students’ perceptions of learning in a computer-based learning environment embedded with self-regulated learning strategies; and second, to explore their views on the application of self-regulated learning strategies in relation to their learning.

1.2. Purpose of the Study and Research Questions

For some students, active participation in learning can be challenging as it requires the ability to know how to ask questions, assess information sources, and adopt analytical approaches. Specifically, learning in social studies entails comprehending an abundant amount of information, accessing almost limitless resources, and seeing the world from diverse points of view (Kottler & Gallavan, 2015).

Notably, these learning processes can be difficult tasks for struggling or novice students because when examining sources, they need to comprehend, analyze, and evaluate information in addition to balance multiple viewpoints. Given the challenges students experience when learning social studies, and bearing in mind that technology is transforming the world and forming part of most tasks in daily life, it is thus essential to engage in effective self-regulated learning strategies.
To assist these learners in developing more conceptual understanding when they engage in source evaluation and analyze multiple information sources, computer-based learning environments can present a range of varied multimodal information for students to synthesize sources (Sanchez, Wiley, & Goldman, 2006).

However, there is limited research concerning the efficacy and implementation of computer-based learning with embedded prompts to support students’ self-regulated learning skills. The current research intends to address this gap by understanding the extent to which students benefit from the affordances of a computer-based learning environment with embedded self-regulated lenses as a scaffolding tool.

In essence, the purpose of this research is to explore how self-regulated learning can be scaffolded in a computer-based learning environment such as the Critical Web Reader, in directing upper secondary students to learn social studies. The Critical Web Reader was designed and developed over ten years ago. Its aim was to scaffold and support critical thinking in social studies classrooms, and it was implemented in multiple learning contexts consisting of students from varied nationalities, backgrounds, and cultural groups.

The Critical Web Reader was designed specifically to guide students and teachers to engage strategically with web-based texts. To promote literacy practices and deep engagement with content, the Critical Web Reader provides “lenses” with guiding questions, links, and suggestions to be used when engaging with different websites. At the same time, it acts as a writing tool to type, save, and record students’ work. Hence, teachers can easily access students’ online work for sharing during class discussion; or to evaluate students’ work.

Importantly, the Critical Web Reader guides students to pay attention to source details in areas of headings, topic sentences, and informational details; evaluate claims and evidence in
information sources; and evaluate information reliability by considering purpose, authorship, or the structure of arguments. A student can easily use the Critical Web Reader to make meaning of a source by looking across source claims and applying their prior knowledge to determine what claims s/he can make while working on a learning activity.

The primary goal of the Critical Web Reader is to guide both students and teachers to effectively work with challenges such as: working with resources, synthesizing findings, and communicating ideas. Furthermore, as an educational tool, it helps students to develop 21st century skills and to participate in a global digital society (Baildon & Damico, 2011). Research studies using the CWR had been conducted in North American and Asia with participants from diverse cultural background (Baildon & Damico, 2011). Therefore, the current research further extends and builds on this previous work by embedding self-regulated learning prompts as scaffolding strategies to enhance learning.

Essentially, in Singapore, classroom practices tend to be teacher-centered within a high-stakes examination system that emphasizes didactic instruction (Deng & Gopinathan, 2016), hence, it is questionable to what extent this traditional form of classroom practice helps students develop 21st century competencies such as self-regulated learning. In addition, little is known about students’ perceptions of self-regulated learning in a system that has been focusing on examination preparation yet is increasingly emphasizing student-centered learning experience. As a result, this research study aims to find out what happened when self-regulated learning prompts were embedded in the Critical Web Reader to guide students’ regulatory processes during social studies’ classes. There are two research questions (RQs) and sub-RQs:

1. **RQ1**: To what extent is the Critical Web Reader useful for Secondary Social Studies students to become more aware of their learning?
I. **RQ1a**: How does the CWR support and constraint students’ learning?

II. **RQ1b**: In what ways did the SRL prompts facilitate students’ awareness of their learning?

III. **RQ1c**: How did students’ attitudes and values about social studies impact the way they considered the CWR to be useful for their learning?

2. **RQ2**: What are the Self-Regulated Learning strategies used by Secondary Social Studies students?

   I. **RQ2a**: What are the different learning approaches used by students when learning Social Studies?

   II. **RQ2b**: What are the planning strategies used by students to engage in the process of learning?

   III. **RQ2c**: What are the monitoring strategies used by students to keep track of their learning?

   IV. **RQ2d**: What are the self-reflection strategies practiced by students?

The following sections elaborate further on how the two research questions address the context of learning within Singapore’s Secondary Social Studies curriculum.

1.3. **Context of Singapore Social Studies**

In 2001, Social Studies became a compulsory school subject for all secondary students in Singapore. The aim was to help students develop a strong sense of national identity, build social cohesion and develop human capital for the global knowledge economy (Baidon & Sim, 2010). In Singapore schools, Social Studies is a multidisciplinary subject closely related to citizenship education; and involving elements of history, geography, economics, and political science. The
Ministry of Education (MOE) has closely regulated the Social Studies curricula to ensure students learn necessary skills, values, and knowledge for citizenship. Teachers are expected to follow the prescribed curriculum, texts, and assessments (Ho, 2012). Thus, teachers are more likely to focus on examinations because they are the key determiner of educational success; and students are more motivated to learn content that will be tested (Kamens 2014; Zhao 2014).

However, due to challenges from globalization, the Ministry has made effort to transform the pervasive traditional didactic practice. The paradigmatic landmark response, ‘Thinking Schools, Learning Nation’ (TSLN) was designed to not only address the issues of globalization and nationhood, but also sought to create a more student-centric, active learning paradigm for the purpose of cultivating autonomous and independent learners to think, innovate, and learn continuously (Deng & Gopinathan, 2016). In the 2014 curriculum documents, MOE referred to globalization, changing demographics, and technological advancements as key driving forces of the future (Alviar-Martin & Baildon, 2016).

The Social Studies syllabus can be characterized by values such as enterprising spirit, risk-taking, adaptability, and lifelong learning. These values focus on what individuals are expected to do in order to sustain Singapore’s national development. In essence, the Social Studies syllabus accentuates the need to ensure students understand their fundamental commitments to the country, yet develop the necessary skills to succeed in a global economy (Alviar-Martin & Baildon, 2016).

In brief, adaptability, lifelong learning, and technological advancement are seen as key capacities for the nation-state to continue to prosper in a highly competitive global economy. To assist students to develop these key capacities, self-regulated learning can be crucial to work in a knowledge-based society. Although little research to date has examined the role of self-
regulated learning and technology in Singapore’s classroom practice, the current research aims to fill in the gap by exploring students’ perceptions in this important area.

1.4. Significance of the Study

Due to a paucity of research on embedded self-regulated learning scaffold in computer-based learning contexts within Singapore secondary social studies context, and elsewhere, for that matter, the significance of this study relates to three key areas: First, technology is transforming the world. In a future filled with uncertainty, it would be necessary to adapt to the evolving conditions by learning how to learn. The shift from a teacher-centered approach to student-centered is critical because the skills needed in the future will be very different from today. In a student-centered classroom, students need to move away from the habits of passively learning information to actively setting goals by monitoring and reflecting on their learning progress. This study aims to understand how to better support students to become active learners by scaffolding their learning through the use of technology and self-regulated learning strategies.

Second, as a result of globalization and the rise of digital technologies that are rapidly changing people’s lives, students need a different set of competencies such as self-regulated learning in order to learn about increasingly complex social reality. The Critical Web Reader with embedded self-regulated learning strategies could provide the opportunity for them to become more aware of learning how to learn about complex societal issues that are affecting individuals and communities everywhere in the world.

Third, to be a successful lifelong learner in a technological world, the utilization of self-regulated learning is a key requirement (Greene, Moos, & Azevedo, 2011) to navigate through these different terrains, be it educational settings and/or work contexts. In essence, the current research aims to develop further understanding of technology integration in social studies.
classes; the impact of self-regulated learning prompts on students’ learning; and their perceptions of self-regulated learning strategies in the classroom or out-of-classroom.

In conclusion, this research can contribute to students’ learning by assisting them to become more aware of learning how to learn. Concurrently, the study can support teachers to prepare students with 21st century competencies by incorporating self-regulated learning prompts and scaffolding as innovative pedagogies designed to inculcate lifelong learning habits in uncertain and rapidly changing social realities.

1.5. Outline of the five chapters

This study consists of five chapters. The first chapter presents the problem statement and situates the study within the current educational context to delineate the need for students to self-regulate in an increasingly complex technology-driven world. To highlight the need for the current research, a literature review was conducted to provide an overview of research focusing on issues in the areas of learner-centered practice; self-regulated learning or learning to learn in relation to lifelong learning; and the application of self-regulated learning within computer-based learning environments.

The second chapter provides a context for the current research by elaborating on historical self-regulated learning frameworks and by identifying two prominent perspectives to guide the research process: the social cognitive and sociocultural. Further, this chapter identifies the relationships between various self-regulated learning subprocesses in order to provide an overview of the knowledge base in this field by synthesizing multiple perspectives and practices central to self-regulated learning.

The third chapter describes the methodology underpinning the qualitative nature of this research and discusses the selected research design: A case study approach to investigate one
type of computer-based learning environment, the Critical Web Reader; and one educational phenomenon, the self-regulated learning strategies of students in social studies. Purposive sampling was used to identify participants from four secondary schools with a mixture of gender and different cultural groups. To guide the data collection process, in-depth semi-structured focus group interviews were conducted with forty-four participants. The transcribed data were the primary sources of data analysis. The online documentation of students’ written responses was used as supplementary data for triangulation purposes. Finally, the constant comparative analysis method (CCA) was used to analyze the focus group interview data by grouping it into recurring categories and themes to answer the two research questions.

The fourth chapter presents the findings from an analysis of students’ interview data. This chapter comprises seven main findings: 1) Critical Web Reader (CWR) provides certain support and constraints for learning; 2) SRL prompts assisted students’ learning of social studies; 3) students’ conceptions of social studies affect their views on the usefulness of the Critical Web Reader; 4) students’ key learning approaches; 5) planning increases students’ engagements in learning; 6) monitoring increases students’ participations in active learning; and 7) self-reflection decreases students’ participation in learning. In brief, the chapter presents the findings of students’ perceptions in regards to the efficacy of the Critical Web Reader and the range of self-regulated learning engaged in and practiced by various participants.

Finally, the fifth chapter presents discussions of the previous chapter by elaborating the ways technology implementation can be a potential method to increase the motivation of students who lack interest in social studies. The discussion points out that the majority of students do not progress through the cyclical processes of self-regulated learning and that they engage in a range of self-regulated learning strategies with varying levels of planning,
monitoring, and self-reflection. The chapter concludes with implications, limitations, and directions for future research.

Before concluding, the following are definitions of terms commonly used throughout the chapters.

1.6. Definition of Terms

Computer-based learning environments

A computer-based learning environment incorporates multimedia, hypertext, hypermedia, and intelligent and adaptive systems. In these settings, computer technology is utilized for the representations of various kinds of information such as text, still images, animation, and audio-visual. In general, a computer-based learning environment makes available multiple representations of information by affording learner control and extensive learning opportunities (Mayer, 2001).

Self-regulated learning

Self-regulated learning (SRL) refers to the process of becoming a strategic learner by actively monitoring, regulating, and evaluating the different aspects of an individual’s learning in areas of metacognition, motivation, and behavior (Hadwin, Oshige, Gress, & Winne, 2010). The ultimate goal of SRL points to the need for students to take responsibility of their own learning, play an active role, and not a reactive role in their learning process (Zimmerman, 2001). SRL has been defined as self-generated thoughts, feelings, and actions for attaining educational goals through processes such as planning, monitoring, and reflecting at various points of learning acquisition (Zimmerman, 2000, 2004).

Learner-centered practice
Learner-centered practice refers to students taking responsibility of their own learning. In this concept of responsibility, learners set learning goals, monitor progress toward meeting goals, and adjust or adapt the necessary approaches to achieve favorable outcomes (Hannafin, 2009). Graue (1993) states that the learner is an active constructor of knowledge who participates in his/her learning through engagement in generating information about learning, and taking responsibility for understanding and communicating one’s learning.

**Critical Web Reader (CWR)**

The CWR is a web-based literacy and technological tool designed to assist teachers and students to strategically engage with learning through online multimodal texts. The development of the CWR derived from Green’s (1988), Durrant and Green’s (2001) three dimensions model of literacy in which emphases on literacy, subject matter, and technology made up three interlocking dimensions in which the operational, the cultural, and the critical aspects of literacy practice were integrated. Based on the above theoretical frameworks, four important lenses were developed: First, a descriptive lens with guiding questions such as what does this website tell me about the author. Second, an academic lens asks questions about claims. Third, a critical lens asks questions such as what does the website want me to think or believe. Finally, the reflexive lens asks questions concerning what affects the way students read a source.
Chapter Two: Literature Review

This literature review first begins with a review of literature on technology integration and learner-centered practices (LCPs). It discusses the paradigm shift from a teacher-centered approach to an active learning process where students interact with technology as a student-centered practice. Second, it elaborates on self-regulated learning and provides historical perspectives drawing from seven theoretical lenses: 1) operant, 2) phenomenological, 3) information processing, 4) social cognitive, 5) volitional, 6) sociocultural perspectives, and 7) cognitive constructivist. Third, it discusses the two guiding theoretical frameworks for this study: Social cognitive and sociocultural theories. Under the social cognitive theory, this study expands on Zimmerman’s SRL model. For sociocultural theory, it elaborates two primary mechanisms: Zone of proximal development and scaffolding. Fourth, this study elaborates on the scaffolding tool: the Critical Web Reader (CWR) and Social Studies education in computer-based learning environments. Finally, it ends with a summary.

2.1. Technology Integration and Learner-Centered Practices (LCP)

The Partnership for 21st Century Skills (2010) proposes the importance of 21st century skills for students to be successful in work and life. Voogt and Roblin (2012) analyze eight 21st century skills frameworks and conclude that the most pertinent are: the skills of collaboration, communication, digital literacy, citizenship, problem solving, critical thinking, creativity, and productivity. The use of SRL strategies is key for learners to engage in these different skills.
In alignment with the 21st century skills frameworks, Rahimi’s (2014) pedagogy-driven framework recommends a shift from a passive to an interactive engagement learning process where students interact with technology from a student-centered approach. Similarly, researchers support the shift from teacher-centered practices (TCP) to learner-centered practices (LCP) (Alexander & Murphy 2000; Bransford, Brown, & Cocking 2000; Lambert and McCombs, 2000) because the former emphasizes knowledge as being “transmitted” from a teacher to learner whereas the latter focuses on guiding and supporting learners as they learn to construct their understanding of the culture and communities of which they are a part (Brown et al., 1993; Brown, Collins, & Duguid, 1989; Cobb, 1994; Collins, 1990; Duffy & Cunningham, 1996; Pea, 1993b).

Chang (2005) adds that in a digital learning environment, learners are encouraged to take charge of their own learning and take control of their own learning processes. However, in a TCP classroom, learning tends to be controlled by the instructor, and the learners receive knowledge, absorb, memorize, and then recall the information on examinations (Harris, Lindner, & Pina, 2011). Teaching materials, mainly textbooks, are for the purpose of supporting recall of factual information for examinations (Cuban, 1983). As a result, the TCP classroom provides little opportunity for students to actively learn and practice SRL strategies.

To learn in a globalized digital world, there is a need for LCP to support the learners to understand that knowledge is rapidly changing and ongoing effort is required to construct new knowledge. Teachers need to help learners in generating relevant questions and issues that would permit them to be active constructors of their own knowledge, rather than identifying issues and directions for learners to learn (Scardamalia & Bereiter, 1991). In other words, in the
LCP approach it is crucial for teachers to facilitate meaningful learning for their students and assist them to attain deeper conceptual understanding (Pilcher, 2001).

Baildon and Damico (2011) point out that in a globalized digital world, one’s knowledge and understanding are increasingly mediated by new technologies; thus, it is essential to acquire new literacy skills to manage new technologies and complex information sources. Concurrently, Agger (1989, 2004) and Holmes (2000) emphasize the need for new literacy skills because of emerging digital technologies that are part of the new work-order of fast capitalism. However, despite the emphasis on new literacy skills, the role of SRL in developing these skills is seldom mentioned.

To learn in a digital environment, Hannafin et al., (2009) note that it can be challenging for learners as they need to manage available resources to support their learning goals. The cognitive demands include selecting, processing, and assessing the relevance of affordances based on learning goals (Kuiper, Volman, & Terwel, 2005). Additionally, learners failed to involve the use of self-regulatory processes such as planning, knowledge activation, and reflection in helping them to learn within the digital and multi-representational learning environments (Azevedo, 2009).

The above points out that for learners to make sense of their learning, they need effective regulatory strategies to ask good questions, they need to have a high level of metacognitive awareness, ability, and strategic skills to handle learning challenges such as cognitive overload when faced with a plethora of media information (Dettori & Perscio, 2011).

In other words, a digital learning environment may create learning difficulties for students and the learning of SRL becomes essential because it is positively associated with knowledge acquisition in computer-based learning environments (Greeno & Azevedo, 2009;
Kauffman, Gie, Xie & Chen 2008). For students to develop 21st centuries digital literacy skills, to participate as active learners in a LCP classroom, SRL is vital for them to become strategic learners who are able to direct their own learning towards goals’ attainments.

2.2. Self-Regulated Learning (SRL)

The ultimate goal of SRL is to motivate students to take responsibility of their own learning, play an active role, and not a reactive role in their learning process (Zimmerman, 2001). SRL refers to the process of becoming a strategic learner by actively monitoring and regulating metacognitive, motivational, and behavioural aspects of one’s own learning (Hadwin, Oshige, Gress, & Winne, 2010).

To help students regulate and advance their performance, Zimmerman and Risemberg (1997) identify several dimensions of learning. For instance, they suggest that students can control their motivation through goal setting. To achieve their goals, students should be able to evaluate their progress by making the required changes to attain their learning goals. These researchers conjecture that students who are more aware of their own thinking and the conditions that affect their learning are more able to take charge and control their learning.

Importantly, self-regulation is not an inherent trait rather it is the self-directed processes which enable students to change their mental abilities into academic skills in order to achieve positive academic outcomes. With SRL skills and motivational behaviour, students are more likely to engage in their learning and subsequently perform better (Griswold, 2015). McLnerney (2011) reviewed recent SRL research conducted in eighteen countries: nine from Asia, five from Europe, three from North America, and Australia. He found that self-regulation appears to be an important determinant of school engagement and achievement across various cultures.
Similarly, Yang (2005) concurs that students - with equal ability - who regulate their cognition, motivation, and behavior have higher academic achievement.

To compare the SRL models, Pintrich (2000) examines three major models: Zimmerman’s (2000) socio-cognitive model; McCaslin and Hickey’s (2001) socio-cultural model of co-regulation; and Winne and Hadwin’s (1998) four-phase model. Each of these SRL models has its own paradigms and traditions and thus they focus on different aspects of SRL addressing different components and levels of the construct. For instance, Zimmerman’s model highlights three cyclical phases of SRL: forethought, performance, and self-reflection. McCaslin and Hickey’s socio-cultural model of co-regulation, stresses that social interactions and instructional contexts are instrumental for SRL. Whereas, Winne and Hadwin’s four-phase model underlines the importance of metacognitive monitoring and control processes as the centre of self-regulatory behaviours.

Although the SRL models emphasize different aspects of SRL, all of them share some basic assumptions. For example, Boekaerts and Corno (2005) state that “All theorists assume that students who self-regulate their learning are engaged actively and constructively in a process of meaning generation and that they adapt their thoughts, feelings, and actions as needed to affect their learning and motivation” (p.201). These models share a view of SRL as consisting of interactive and iterative processes that integrated cognition, motivation, behavioral, and social dimensions as fundamental in learning.

To further investigate the different aspects of SRL, the next section aims to review the seven historical SRL perspectives for the purpose of synthesizing multiple frameworks and identifying key subprocesses in order to provide an analysis of the SRL construct to guide this research project. The seven SRL theoretical perspectives are: 1) Operant, 2) Phenomenological,
3) Information processing, 4) Social cognitive 5) Volitional, 6) Sociocultural and 7) Cognitive constructivist. These perspectives are foundational in terms of understanding different SRL theories and approaches as they illustrate the progression of SRL research and theory. Each of these theoretical models provides specific insights and elements of SRL as interconnected by multiple parts or processes. By referencing the different theoretical perspectives, this holistic approach helps to situate the current research to address various aspects, components, and levels of SRL within the body of its literature. Next, each perspective is briefly reviewed in the following section.

2.3. Historical Perspective of SRL

Adhering to the principle that to understand a construct, it is important to know its history; the following section focuses on theoretical perspectives used by prominent researchers to guide their research.

According to Zimmerman (2001), theory and research on SRL emerged in the mid-1980s to address the issue of how students can become the masters of their own learning. SRL theorists seek to explain how learners learn or fail to learn despite advantages or limitations in mental ability, social environments, or quality of education. There are four common assumptions concerning how students can self-regulate their learning (Pintrich, 2000).

The first assumption suggests that students can monitor and regulate their cognition, behaviour, and motivation. Second, it is assumed that students can actively construct their own goals and meaning from both the learning context and their prior knowledge. Third, it is assumed that all student behaviour is goal-directed, and the process of self-regulation helps them to modify their behaviours in order to achieve goals. Finally, it is assumed that self-regulation
mediates the relationship among a student’s performance, contextual factors, and individual characteristics of the learner. These assumptions provide the foundation for most SRL theories (Zimmerman & Schunk, 2001).

**Operant theoretical perspectives of SRL.** In this view, it points to the importance of rewards in guiding students’ subsequent actions. For instance, a student who received good grades would continue to work hard and self-regulate because the rewards (good grades) act as stimuli for him or her to engage continuously in further action. Operant researchers point out that learners will not use a known self-regulatory procedure unless the conditions and outcomes warrant it. Therefore, they view the use of reinforcers such as praise for students’ improved test performance as necessary since it induces students to pursue long-term outcomes and enables teachers to reach academically disengaged students. To foster self-regulation, operant researchers identify four major key processes: self-monitoring, self-instruction, self-evaluation, and self-reinforcement (Mace, Belfiore, & Hutchinson, 2001).

The operant researchers adapted B. F. Skinner’s behavioural principles and produced one of the largest and most influential bodies of research on self-regulation (Zimmerman, 2001). For instance, their studies of self-recording, began in the late 1960s, have been applied to areas such as smoking (McFall, 1970), weight control (Stuart, 1967), and academic performance (Broden, Hall, & Mitts, 1971). The use of self-record was a practical way for the purpose of monitoring individuals across various settings, and at the same time, unveiling covert events to operant investigation and control.

Operant theorists contend that a person’s self-regulation is linked to external reinforcing stimuli. Therefore, if self-reinforcement, such as having coffee breaks, helps a student to succeed on a test, then, it can be assumed that the breaks will be continued. In contrast, if the coffee
breaks fail to improve test performance, it can be assumed that the breaks will be discontinued. In short, according to operant theorists, the decision to self-regulate depends on the immediate or delayed rewards as the function of self-reinforcers (coffee breaks) act as discriminative stimuli that guide a student’s further action (Zimmerman, 2001).

**Phenomenological theoretical perspectives of SRL.** McCombs (2001) describes self-identity as a key component of the phenomenological theoretical perspectives of self-regulation. The way a person views his/her past success, perceptions about his/her abilities, and potential for future success affects one’s potential for self-regulation. Paris, Byrnes, and Paris (2001) describe the formation of self-identities developmentally, and they suggest that students’ identities change especially during the elementary and middle school years. Self-identities are seen as the ultimate goals that students use to self-regulate their learning, and experiences that are incompatible with students’ identities are avoided. Hence, the students who have positive perceptions of their abilities for future success tend to self-regulate and embrace the identity such as being one of the top students in class.

Both Paris et al., (2001) and McCombs (2001) remark how learners begin the first grade of school with optimistic perceived competence but experience a decline in their views as a result of adverse feedback from teachers and social comparisons with peers. Subsequently, the decline of their positive views leads them to reject an academic identity and embrace counterproductive identities such as prankster or slacker. Self-identity is understood as the individual’s beliefs and perceptions of one’s ability to direct and control his/her cognition, motivation, and behaviour during learning situations in general (McCombs, 2001).

**Information processing theoretical perspectives of SRL.** Information processing (IP) theory has been used to describe and explain general human cognitive functioning and self-
regulation by a wide range of scholars including anthropologists, linguists, mathematicians, psychologists, philosophers, psychologists, and educators (Johnson-Laird, 1988).

There are five fundamental types of IP: searching, monitoring, assembling, rehearsing, and translating (Winne, 1985). Briefly, searching describes the process of how we retrieve data. Monitoring refers to the comparison of two pieces of information as part of an evaluative process. Assembling indicates the process of storing information in long term memory through establishing links between the new information and existing information. Rehearsing stipulates processes used by the individual either automatically or deliberately to reinforce the assembly of information with usable links. The deliberate rehearsal of informational links can be seen as a process of self-regulation in acquiring information (Winne, 2001).

The key IP model involves metacognitive control and monitoring, which is identified as the primary hub of the SRL process (Winne, 2001). Notably, IP theory and social cognitive perspectives share the same view point in which they point out that monitoring is a key factor in self-regulating one’s learning. For instance, in Zimmerman’s social cognitive SRL model, he elucidates how monitoring has a strong effect on students’ expenditure of time and effort.

**Social cognitive theoretical perspectives of SRL.** Social cognitive theory is an extension of Bandura’s triadic account of human functioning that focuses on separate yet interdependent contributions of personal, behavioural, and environmental influences (Zimmerman, 2001). Schunk (2001) notes that students’ efforts to self-regulate are not determined solely by personal processes such as cognition or affect, rather they are assumed to be influenced by environmental and behavioural events in reciprocal fashion. For this reason, it is vital to create learning opportunity in a classroom environment for students to practice and be cognizant of SRL.
The importance of goals and expectancies have been stressed in various theories of self-regulation, however, these two constructs are distinctive in social cognitive theory in terms of their definitions. Social cognitive theorists established the benefits of setting goals that are task-specific, proximal in their time of attainment, and challenging to the individual as in slightly above one’s current performance level (Locke & Latham, 1990; Zimmerman & Kitsantas, 1999).

In contrast, learners who set general, absolute or unchanging goals tend to be less motivated and successful. Importantly, social cognitive theorists indicate that learners who lack a specific goal are often unsure about what to do next; and learners who set absolute goals are often discouraged about their apparently slow progress.

**Volitional theoretical perspectives of SRL.** Early theological and philosophical conceptions of volition focused on the importance of human will power. St. Augustine views the will as the key human faculty: “We are nothing but wills” (Zimmerman, 2001). Descartes argues that the will plays a key role when linking thoughts and action; will was believed to direct action (Watson, 1963). However, research studies have shown that although at-risk students express willingness to modify poor study habits, they are unable to study more diligently.

Volition researchers have focused their theory on explaining the breakdown in students’ persistence. They elaborate the need for students to become able to resist distractions after undertaking a learning task. Kuhl (1984) describes specific attention-control strategies that can shift a learner’s focus from self-states to task actions. For instance, emotional-control strategies such as self-instructions to relax are assumed to sustain intention so that difficult parts of a task can be learned (Zimmerman, 2001). In the current research, self-instruction is provided in the form of SRL prompts to encourage students to think, focus, and reflect on their learning. The SRL prompts provide students with elements of control over their learning by explaining how to
use and engage SRL strategy, increasing their attention to a task; and describing the nature and demands of a task.

**Sociocultural: Vygotskian theoretical perspectives of SRL.** Vygotsky’s theory is distinctive from other perspectives of SRL by two specific features: first, its emphasis on inner speech as a source of knowledge and self-control; second, its emphasis on interactive dialogue between adults and children as a vehicle for conveying and internalizing linguistic skill (Zimmerman, 2001). Although Vygotsky did not use the term sociocultural, he formulated the sociohistorical perspective. He remains as the major figure of present-day sociocultural theory (Henderson & Cunningham, 1994).

A number of prominent psychologists incorporated Vygotsky’s theory in their work. For instance, Bruner (1986) advocated the concept of scaffolding to describe an adult’s effort to provide additional structure during the early phases of learning a new concept or skill. Specifically, Bruner adapted aspects of Vygotsky’s zone of proximal development framework to illustrate how an adult could scaffold a learner’s learning process.

The sociocultural theory emphasizes that the interpersonal process in which an adult scaffolds learners’ learning provides content for them to internalize their learning. Subsequently, scaffolding enables learners to internalize their learning. This internalization then increases learners’ sense of contribution and their commitment to persist in their learning efforts. In this theory, scaffolding from adults or a more capable other is key in enabling learners to reach their potential. Thus, the current research aims to study the scaffolding of students’ learning of social studies through a scaffolding tool such as the Critical Web Reader.
Cognitive constructivist theoretical perspectives of SRL. In this framework, two widely cited theorists, Bartlett and Piaget point out cognitive schema as the underlying basis for human learning (Zimmerman, 2001). A schema refers to a plan, plot, or outline that specifies the relationship between a number of concepts (English & English, 1958). Constructivists value the development of strategies and skills when learning a task. For instance, to develop effective strategy, learners must be able to break down tasks into parts, organize these parts in a hierarchical sequence, and focus first on the most elementary components. Based on this theory, a SR learner needs a cognitive plan and works strategically to accomplish a learning task. In alignment with this perspective, the current research adapts a cyclical SRL framework as a cognitive scheme for learners to participate strategically within a scaffolded environment in order to accomplish a task.

Constructivist theorists share a similar position with the sociocultural theorists in that they regard learning as a process that has to be examined within the entire social, cultural, psychological, and physical environment (DeCorte, Greer, & Verschaffel, 1996). Paris et al (2001) present three questions in reference to participation as a SR learner: 1) Why regulate one's actions? 2) How do students acquire regulative strategies? 3) What are the consequences of being a self-regulated learner?

These researchers’ answers to the above questions indicate aspects of social environmental factors. For example, first, regulating one’s action is related to the desires of presenting oneself positively in front of peers. Second, students acquire SRL strategies by both invention and instruction. Third, the consequences of being a SR learner extend beyond better learning and higher academic achievement to include enhancement of one’s social presentations to others (Paris et al., 2001). In short, these theorists view SRL as an adaptive response to an
individual’s environment by indicating that a learner not only self-regulates to achieve better performance but also to be seen positively by peers (Paris, Byrnes, & Paris, 2001).

In conclusion, the SRL researchers drew on the above foundational theories to guide their research and to describe and explain different conceptions of SRL. These different theories offer multiple directions, insights, and perspectives to educators and learners in ways of becoming a self-regulated learner. For learning to occur, these distinct theories illustrate that students must remain proactive in their learning, engage in the use of learning strategies, and monitor their learning processes for task accomplishments.

More specifically, these multi-dimensional theories view physical, social, and environmental influences as resources for attainment of self-regulation. Researchers have provided compelling research results in demonstrating that SR activities, such as goal setting, self-monitoring, and reflective learning, are important processes in assisting and improving students’ learning.

For the purpose of this study, the operant theoretical perspective points to the importance of behavior regulation in SRL, while the phenomenological theory helps to think about the role of students’ perceptions and identities. Information processing theoretical perspective requires the need to pay attention to cognitive functioning and metacognitive control as central to SRL. Volitional perspectives help to think about students’ intentions and goals. Social cognitive and sociocultural frameworks help to consider social aspects of SRL. This research selected the social cognitive and sociocultural frameworks due to the fact that the former focuses on influences from personal, behavioral, and environmental whereas the latter emphasizes the importance of environmental scaffolding as a way to support students’ learning.
2.4. Guiding Theoretical Frameworks: Social Cognitive and Sociocultural Theories

To guide this study, the current research draws from both the social cognitive model and sociocultural theory. The social cognitive perspective illuminates learners’ SRL behaviours in the areas of cognition, motivation, and behavior. Similarly, the sociocultural perspective supports the understanding of a technological tool, the CWR, within the learning context of secondary social studies classrooms.

From the social cognitive perspective, SRL processes can be categorized into three cyclical phases: Forethought, performance, and reflection (Zimmerman, 2000). The characteristics and sub-processes of the three-cyclical model were conceived from a broader social cognitive theory under the influence of Albert Bandura back in the 1970’s. The following section briefly reviews Bandura’s theory before elaborating in detail on Zimmerman’s SRL model and its three cyclical phases.

Bandura (1986) proposed the concept of personal agency in illustrating that human behavior is goal-directed. Hence, an individual can proactively respond to his or her environment. To further explain how an individual can actively change his or her environment, Bandura recommends five capabilities: 1) use symbols for communicating or internalizing concepts; 2) anticipate outcomes of potential actions, set goals, and plan actions that will enable goals’ achievement (this is the forethought phase in Zimmerman’s SRL model); 3) reflect on life experiences, and evaluate whether future modifications are necessary (this is the self-reflective phase); 4) learn through observation of consequences of other’s actions, and finally; 5) the capability to self-regulate (Bandura, 1986; Luszyczynska & Schwarzer, 2005).
Notably, Bandura points out key components of SRL behavior specifically in point two, three, and five. To acquire these different capabilities, an individual can self-regulate his or her cognition, motivation, and behavior to achieve favorable learning outcomes.

**Social cognitive theory: Zimmerman’s model of SRL.** Building on Bandura’s work, Zimmerman’s (2000) model further defines and refines social cognitive theory. He proposes a more comprehensive model by highlighting three cyclical phases of self-regulation: forethought, performance, and self-reflection (see Figure 2-1) with guided subprocesses. Each of the phases further elaborates the interactions of one’s cognition, motivation, and behavior with distinct aspects of SRL subprocesses. The following sections elaborate the three cyclical phases with attention focusing on sub-processes closely related to the current research.

![Figure 2-1 Phases and subprocesses of self-regulation](image)

The *forethought* phase consists of metacognitive processes and motivational beliefs that precede efforts to learn and prepare students to self-regulate (Zimmerman, 2011). Two major sources of self-regulation are task analysis and self-motivation beliefs. First, task analysis consists of goal setting and strategic planning. Goal setting is an important task during performance as it directs efforts and attention towards a desired outcome. Goal setting is helpful for individuals to evaluate progress towards a selected goal over time. The self-regulated students are often organized with short term goals that are more detailed and specific whereas poorly regulated students typically set vague and distal goals that are accomplished over an extended period of time (Zimmerman, 2011).

Strategic planning is best understood as a process of matching strategies and regulatory processes. In strategic planning, the self-regulated students select or create strategies for guiding cognition, controlling affect, and directing motoric execution (Pressley & Woloshyn, 1995). In contrast, the poorly regulated students begin studying without clear plans and rely on spontaneous reactions of feedback to enhance learning. According to Zimmerman (2011) the use of goal setting and strategic planning depends on students’ motivational beliefs about the effectiveness of these processes and their skills in implementing them. Notably, these two subprocesses, goal setting and strategic planning are important indicators to guide the current research questions, particularly, research question two as it seeks to investigate whether secondary social studies students apply SRL strategies in their learning.

Next, under self-motivation beliefs, the key aspects include task interest or value. Task interest or value is similar to individual interest (Hidi & Renninger, 2006) and it can be predictive of students’ academic success (Sansone, Weir, Harpster, & Morgan, 1992).
motivation beliefs are under the forethought phase due to the significance of motivation
engagement in subsequent efforts (Zimmerman & Cleary, 2009).

In Zimmerman’s SRL model, motivation refers to the development of behavior
preferences, direction and purpose of behavior, and reinforcement of behavior (Reeve, 2005).
Zimmerman considered motivation and SRL as inter-related in which the former is subsumed
under a broader SRL construct. SRL coupled with motivation is considered efficacious due to
prompting and maintaining of SRL (Zimmerman & Cleary, 2009).

According to Ryan and Deci (2000), there are two types of motivation based on the
various reasons for task completion: 1) intrinsic motivation and 2) extrinsic motivation. Intrinsic
motivation refers to task completion because the learner regards it as inherently interesting.
Whereas, extrinsic motivation indicates task completion due to reasons other than intrinsically
interesting. For instance, a student is motivated to learn mathematics not because s/he wants to
learn it but due to parental praise, s/he continues to excel in the subject. The understanding of
students’ motivational levels helps to address current research questions in areas of in what ways
the CWR is useful for secondary social studies students and what motivates these students to
apply SRL strategies in their learning.

Research conducted in twenty-six countries found that students’ motivation to learn had a
profound impact on their use of control strategies (Artelt, 2005). The author suggests that
students will control their learning only if they are motivated. In general, students who employ
an optimistic, task-focused strategy not only have high academic achievement but also
experience greater joy and satisfaction in their learning. Conversely, students who employ
maladapted, task-avoidant strategy have poor academic performance and low satisfaction. Artelt
(2005) concluded by stating that students’ beliefs and strategies have long-term consequences for
future successes. Therefore, it is important for the current research to find out what motivates students, what are their motivational beliefs about learning social studies, and how they view the subjects or lessons in relation to their future goals in order to engage them in social studies learning.

Next, the performance phase encompasses two major categories: self-control and self-observation. The first category, self-control refers to actions and tactics that manage motivation, attention, or motoric execution of the task. The common tactics include: attention focusing, self-instruction, and implementing task-specific strategies, or common SRL strategies (Zimmerman, 2000). The common SRL strategies refer to setting goals, seeking assistance, or monitoring learning progress.

Highly self-regulated students use strategies designed to focus and sustain their volition such as action control and emotional state control strategies to block ruminations over prior errors (Zimmerman, 2011). Wolters and Rosenthal (2000) identify a number of strategies such as self-consequences, environmental structuring, and self-instructions that students use to motivate themselves. Briefly, self-consequences involve the use of reward or punishment; environmental structuring refers to the change of surroundings for task completion; and self-instruction points to the use of verbal statements to enhance students’ learning.

The second category, self-observation refers to self-monitoring of specific aspects of one’s performance. Self-monitoring is a systematic monitoring of one’s performance by maintaining metacognitive awareness of one’s actions. Monitoring fosters self-awareness of cognition and behaviors by modifying inadequate strategic plans or actions (Bandura, 1991). Consistent monitoring is directly linked to motivation due to the desire to observe performance improvement over time. Research shows that highly self-regulated learners engage in more
monitoring such as self-recording as opposed to poorly regulated learners (Zimmerman & Martinez-Pons, 1990). One of the aims of this research is to find out whether the less regulated students are motivated to monitor their learning.

Finally, the *self-reflection* phase consists of two major categories: self-judgements and self-reactions. The first category, self-judgements, refers to self-evaluating one’s learning performance. For instance, if an individual is disappointed with his or her performance, to correct the mistakes, he or she thinks of strategic adjustments for improvement. The second category, self-reactions is comprised of defensive or adaptive inferences. Defense inference refers to dissatisfaction with performance and attributing the outcomes to uncontrollable causes and often resorting to defensive inferences such as procrastination, task avoidance, and cognitive disengagement (Zimmerman, 2011).

In contrast, adaptive inference explains that students who display some level of satisfaction and attribute poor outcomes to strategy problems are more likely to make adaptive inferences (Zimmerman & Bandura, 1994; Zimmerman, 2011). Importantly, these different self-reactions influence future performance or forethought phase in goal setting or planning. The students who experience high levels of self-satisfaction increase their forethought motivation. The students who experience high levels of dissatisfaction reduce motivation to continue, and further efforts to learn. As a result, this research aims to find out if students participate in evaluating their learning and what are the attributions of satisfaction or dissatisfaction in their learning outcomes.

The SRL model provides a learning process supported with distinct categories under the three cyclical phases. It illustrates the ways in which individuals learn according to cognition, motivation, and behavioral modification in relation to personal, behavioral, and environmental
factors. The next section discusses how the social cognitive model of SRL strategies can be embedded in a computer-based learning environment to teach self-regulatory skills. The current study draws from the following illustrative example as a way to guide the development of the SRL prompts within the CWR in order to facilitate the application of SRL strategies for social studies students.

**SRL in a computer-based learning environment: An illustrative example.** The social cognitive theory of SRL indicates the critical processes that impact students’ learning and achievement (Abrami, Venkatesh, Meyer, & Wade, 2013). The integration of SRL theory in computer-based learning environments is one academic area that has received ample attention from researchers. For instance, the empirical work by Shaikh, Zuberi, and Venkatesh (2012) and Venkatesh and Shaikh (2008, 2011) demonstrate linkages between academic performance and specific self-regulatory processes, namely, task understanding and monitoring proficiencies.

To promote and support the students’ learning of the three key phases of SRL - forethought, performance, and self-reflection - a knowledge tool called Electronic Portfolio Encouraging Active Reflective Learning (ePEARL) was designed to scaffold students’ knowledge construction (Abrami et al., 2013). As a learning tool, the ePEARL aims to explore whether a technology-based tool for fostering SRL could gain positive impacts. The ePEARL is capable of storing visual and auditory content, including text, images, video, and sound served to deepen students’ learning experiences. This educational tool focuses on student-centered practice and scaffolds metacognitive skills such as goal setting, identifying strategies, and reflecting on one’s learning (Abrami & Barrett, 2005). The CWR shares similar function as ePEARL in areas of storing visual and auditory content, however the former scaffolds social studies skills such as embedded critical lens, whereas the latter aims to scaffold SRL skills. The
current research aims to further enhance learners’ experience by integrating the social studies skills with SRL strategies to create a more productive and meaningful learning environment for social studies students.

The training in SRL can benefit students in areas such as academic performance, motivation to learn, and learning strategies (Abramin et al, 2013). Importantly, the training helps them to self-initiate motivational, behavioral, and metacognitive activities in order to control their learning (Zimmerman, 1998). In other words, research show that the scaffolding of SRL creates positive learning outcomes for students.

The embedded structures and strategies of ePEARL was designed as process portfolios to support students’ learning. It helps students with deficiencies in core competencies by reflecting through the authentic tasks and subsequently overcome their weaknesses. This educational tool was linked to students’ abilities to self-regulate their learning and to enhance their development of important educational skills and abilities, particularly, literacy skills (Meyer at al., 2010). Through process portfolios, students assume more responsibility for their learning, learn how to set goals, and attain better understanding of their strengths and limitations (Hillyer & Lye, 1996).

Furthermore, to explore the extent of student engagement and satisfaction with the use of ePEARL, the research addressed two of Zimmerman’s (2008) reviews of SRL theory in online environments. Zimmerman states that to stimulate and study various SRL processes in students, there are four key trends that remain important: 1) the relationship between student reports of SRL and actual use of its processes; 2) the relationship between levels of SRL and overall academic achievement; 3) the role of the social context of the classroom in stimulating or hindering the development of the SRL skills; 4) the relationship between motivation and SRL processes. The current research refers to the above points as guidelines to understand students’
engagement within CWR. For instance, this research aims to find out whether students who are more motivated tend to engage more in SRL processes.

Additionally, to embed different levels of SRL structures within the ePEARL, the authors adapted Zimmerman and Tsikalas’ (2005) research in areas of computer-based learning environments by highlighting three cyclical phases of SRL as the theoretical framework for structural embedments. The three cyclical phases refer to forethought, performance, and self-reflection. In the forethought phase, tasks consisted of encouraging students to set outcome goals, process goals, planning strategies, and create learning logs. In the performance phase, tasks involved self-examination through recordings and learning log entries. In the self-reflection phase, tasks involved reflecting on work, process, feedback, and becoming aware of new goal opportunities. Similar to the ePEARL structure, the current research embedded aspects of Zimmerman’s cyclical model to encourage the use of SRL.

The above research provided confirmatory evidence of the positive impact of the use of the educational tool on students’ literacy skills and SRL strategies. The results showed that students who used ePEARL in medium or high implementation classrooms demonstrated a moderate size of learning gains on a standardized literacy measure and reported positive changes in key SRL skills. The study concluded with convincing evidence that a theoretically based knowledge tool can have a meaningful impact on learning (Abramin et al, 2013). The above results reported by Abramin et al (2013) hold promising potential for researchers who are interested in exploring SRL in computer-based learning environments.

In conclusion, the ePEARL research provides the current study an approach to explore the use of an educational tool such as CWR. For social studies students to gain better understanding of their performance, this research provides them with a learning opportunity in a
computer based learning environment embedded with SRL theory as a way for learners to become more aware of utilizing effective learning strategies for productive learning outcomes.

**Sociocultural theory.** The following sections elaborate on sociocultural notions of the use of a technological tool to scaffold students’ learning (Cole, 1996; Vygotsky, 1978; Wertsch, 1991, 1998; Remillard, 2005). Research in SRL has historically focused on an individual perspective, for instance, models found in the literature portray SRL as an individual and cognitive-constructive activity (e.g., Winne, 1997; Zimmerman, 1989b). These SRL models focus on individual differences associated with SRL in the areas of metacognition, goal setting, self-efficacy, and achievement (Hadwin, Jarvela, & Miller, 2011). Social context was viewed as one of the components that influenced the process of self-regulation (Schunk & Zimmerman, 1997) rather than an integral constituent. Therefore, the models of “self”-regulated learning omit attention to social, cultural, or historical influences.

However, Yowell and Smylie (1999) argue that focusing on the individual learner is inaccurate as it implies that regulation is only an intra-psychological process, ignoring the roles of others and the social context in self-regulation. In agreement with these authors, the current research focuses on the interplay between individual learner and social processes. Similarly, Zimmerman (2008), and Butler (2002) state that current models of SRL are centrally concerned with understanding the interaction between intra (individual) and inter (social)-psychological processes. Indeed, SRL researchers are investigating how individual’s adaptive, agentic learning is constrained, afforded, and/or supported within socially situated settings (Butler, 2011). The following framework depicts how learning can be supported between a teacher and learner within socially situated settings.
Zone of proximal development (ZPD). Vygotsky (1978) defines ZPD as “the distance between a child’s actual developmental level as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peer” (p.86). To elaborate the aspects of school learning, Vygotsky asserts that social interaction plays an important role in cognitive development of a child. The interactional processes between a teacher and child enable the latter to complete activities which s/he cannot be accomplished if without assistance.

The above points out that within the ZPD, tasks that children cannot perform individually can be accomplished with the help from more experienced others. ZPD refers to capabilities that have not yet matured but are in the process of maturation, capabilities that will mature tomorrow but are currently in an embryonic state (Vygotsky, 1978). ZPD is the dynamic zone of sensitivity in which learning and cognitive development occur.

According to Vygotsky, the role of education is to provide children with cognitive and physical “experiences” that are in their ZPD, and provide activities that challenge children but help them to accomplish with sensitive guidance. Vygotsky considers the traditional tests of intellectual functioning of his time as extremely limited because they only assessed “static” or “fossilized” abilities, and left out the dynamic and ever-changing quality of human cognition (Vygotsky, 1978).

Therefore, he argues that adults carry much responsibility for making sure that children’s learning is maximized by actively engaging them along their developmental pathway. In Vygotsky’s view, the teacher’s role is to keep tasks in children’s ZPD, or slightly above their level of independent functioning, rather than giving children tasks for which they have already acquired the necessary mental operations.
The traditional view posits that the moment a child assimilates the meaning of a word, or masters an operation such as written language, the child’s developmental processes are basically completed. In contrast, Vygotsky’s notion of the ZPD states that the child developmental processes have only just begun at that moment. Importantly, the analysis of educational processes through ZPD shows major consequences such as the initial mastery of a skill. For instance, writing provides the basis for subsequent development of a variety of highly complex internal processes in children’s thinking (Vygotsky, 1978).

Taken together, Vygotsky points out that through scaffolding, a teacher can give just enough support for a child to gradually take over responsibility as s/he learns to engage more and more in the task. Gradually, the child learns to become more active and act strategically by requiring less help from social support. In a nutshell, Vygotsky’s ZPD framework illuminates that in educational processes, social interaction plays a fundamental role in the development of students’ cognition. Vygotsky strongly believes that the role of education is to provide learners with cognitive and physical activities that challenge them but at the same time help them to learn and grow. The current research draws from Vygotsky’s theory by further exploring the scaffolding aspect of learning through technology mediated activity such as the CWR.

The following sections expand on the construct of scaffolding in regards to the ways learning takes place through technological mediation.

**The Scaffolding Metaphor.** Scaffolding is a process by which teachers provide support to children who are learning new skills or strategies. Gradually, the teachers provide less support or withdrawal of support as students take up more responsibility for their learning or demonstrate task mastery.
The metaphor of scaffolding was first introduced by David Wood, Jerome Bruner, and Gail Ross in an article published in 1976. In the article, the term scaffolding describes how an interaction between a tutor and a child when constructing a wooden pyramidal puzzle that employs “a scaffolding process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts” (p.90).

Jerome Bruner borrowed the term scaffolding from the construction industry (Smidt, 2009). A scaffold is a temporary support erected to allow the building of a tall structure to be completed, repaired, or painted. After the completion of the building, the scaffold is removed. Bruner borrowed the term to explain interactional support in the form of adult-child dialogue in which the adult maximizes the child’s intra-psychological functioning (Clay & Cazden, 1990).

The social environment is the essential scaffold or necessary support system that allows the child to advance further and continue to build new competencies. Although the original discussion of scaffolding by Wood et al (1976) focuses on an observational study of an expert teacher interacting with children, the majority of the subsequent studies focus on parent-child interactions (Stone, 1998). In the mid-1980’s, the exploration of scaffolding for classroom instruction started to appear with researchers using extended examples of classroom dialogues to argue for the importance of instructional dynamics for classroom instruction.

In 1979, Cazden made explicit the link between scaffolding and ZPD. This external guidance or support could be in various forms including prompts, clues, modeling, explanation, and encouragement (Miller, 2002). Cazden argues that Vygotsky’s notion of ZPD provides an analytic link in understanding scaffolding in broad situations, for example, during classroom lessons, when teachers use repeated questions and answers as scaffolds for students’ learning of classroom discourse (Stone, 1998).
Instructional scaffolding refers to the relationship and interaction between learners and their guides; it is an enabling process in which a novice achieves a goal which otherwise unattainable if without assistance (Wood, Bruner, & Ross, 1976). During the scaffolding process, the learner is actively engaged in the learning process, rather than passively, in order to benefit and attain a higher level of achievement (Rogoff, 1990).

Over time, the notion of scaffolding has been applied broadly to encompass features of computer software (see Pea, 1985a, 1985b), curriculum structures, and physical learning of a complex motor activity like tennis, for example, to assist the novice tennis player in positioning the body, arm, and racket to facilitate a sense of making a first racket stroke.

Interestingly, Pea (2009) recommends the integration of scaffolding processes by which people and machines join together for helping learners learn. He suggests that certain scaffolding activities can be the responsibility of the teacher (or peers) and other scaffolding activities can be provided by the software. In this way, a scaffolding partnership or synergy could be achieved to support learners’ advancement.

To help students learn the class content or complete a task, scaffolding prompts are built into digital activities with cognitive suggestions about learning the content. To guide and support students’ regulation of problem solving (Ifenthaler, 2012), and self-monitoring skills (Kauffman et al., 2008), researchers use prompts to stimulate the application of cognitive strategies, clarify unclear areas or the assignment goals, and cueing students to self-regulate their learning (Schunk & Ertmer, 1999; Schunk & Swartz, 1993).

Correspondingly, Azevedo, Cromley, and Seibert (2004) provide scaffolding features with a set of sub-goals for students to complete tasks. These sub-goals are intended to guide
students’ learning by listing the concepts that they should be able to explain. However, this form
of computer-based scaffolding is considered as static because they are mainly affordances that
students may choose to utilize for regulating their own learning. Although the CWR lenses are
static affordances in which social studies concepts are listed for students without prompting them
to monitor their learning process, its persistent display of task-related information assist students
to utilize these lenses when needed.

In contrast to the above features, another type of scaffolding system is the MetaTutor
(Azevedo et al, 2004). This system provides suggestion in the forms of questions. The students
must answer self-reflection questions such as: “How well do you think you have learned the
information on this page?” This type of scaffolding system attempts to guide students by
providing regulatory strategies in the forms of suggestion.

The current research adapts scaffolding system similar to MetaTutor structure by creating
SRL instructional scaffolding prompts in the forms of guiding questions and reminders to assist
students to become more aware of their learning. Moreover, drawing from scaffolding concepts
derived from ePEARL, MetaTutor, and Zimmerman and Tsikalas (2005), this study incorporated
three cyclical phases of Zimmerman’s SRL model: forethought, performance, and self-reflection
to scaffold regulatory skill such as planning, monitoring and reflecting on one’s learning
(Abrami et al., 2013).

These SRL scaffolding prompts remind students to focus on the key concepts within a
social studies source as well as reading and thinking strategies. By scaffolding SRL regulatory
strategies, this research aims to assist students regulating their learning and achieve conceptual
understanding when instructional scaffolds are not in place (Azevedo & Hadwin, 2005) as
research points out that in a computer-based learning environment, learners need to employ
effective regulatory strategies for information processing and problem solving (El Saadawi, Azevedo, Castine, Payne, Medvedeva, Tseytlin, & Crowley, 2010).

Finally, although SRL is crucial for online learning, limited research exists on social studies instructional scaffolding within the Singapore context of computer-based learning environments. As a result, this research aims to support and optimize social studies students’ learning by combining technology with scaffolding features to facilitate learning processes.

The following sections elaborate on the computer-based learning environment in social studies.

2.5. Computer-Based Learning Environment

According to Gallavan (2003), the subject of social studies encompasses the perspectives, concepts, and methods that enable us to understand the world holistically. Social studies education is inherently multidisciplinary, drawing on the disciplines of History, Geography, Economics, Sociology, Psychology, and Political Science. More importantly, social studies education aims to prepare students to live in an increasingly complex world by helping them develop the capacities to continually question their experience, actively participate in public life to address issues of the 21st century, and make informed decisions for the public good (National Council for the Social Studies, 1994).

To prepare students for 21st century contexts, Singapore’s educational reforms such as “Thinking Schools, Learning Nation” (TSLN) included an information technology masterplan to enhance linkages between schools and the world (Teo, 1977). These educational reforms sought to increase the use of technology in classrooms to develop 21st century skills for globalization and the information age (Baildon & Damico, 2011).
However, according to Kottler and Gallavan (2015), the learning of social studies entails comprehending an abundant amount of information, accessing almost limitless resources, and seeing the world from diverse points of view. Research has suggested that it is through the careful and critical reading of multiple texts that students develop subject matter understanding. When students engage in source evaluation with multiple information sources they gain more conceptual understanding (Sanchez, Wiley, & Goldman, 2006), and develop deeper understanding of subject matter content than from reading textbooks or singular accounts (Nokes, Dole, & Hacker, 2007).

The above points out the benefit of source work in learning social studies, but there are challenges for students to be able to synthesize information from a range of information sources in a coherent manner (Baildon & Damico, 2011), and be able to read skillfully in a dynamic and sophisticated ill-structured domain (Spiro, Collins, Thota, & Feltovich, 2003).

Unlike more well-structured problems such as those found in Science and Mathematics classrooms, where problems generally progress from hypothesis to solution, social studies may present students with ill-structured problems to investigate (Brush & Saye, 2006). For instance, social studies subjects, such as History, are ill-structured domains because problems do not have objectively correct, single answers (Frederiksen, 1984). To effectively analyze these social problems, students need to apply a variety of diverse forms of knowledge in the fields of history, politics, and economics.

Ill-structured domains place greater emphasis on evaluations of the sufficiency of answers to determine whether a problem or question has been adequately answered. Typically, sufficient answers in these domains are well-founded and supported with evidence drawn from a range of information sources. This means that multiple, equally convincing or contradictory arguments can exist (Torney-Purta, 1994). Based on the above, to successfully learn in ill-
structured subjects, such as social studies, the utilization of technology tool and SRL strategies may be essential for students to navigate through complex, tentative, and dynamic nature of the subjects. The following research by Brush and Saye demonstrate how technology can scaffold middle and high school social studies classrooms.

In addition to the challenges of ill-structured issues, Brush and Saye (2006) point out another challenging learner-related issue, which is students’ readiness to grapple with cognitive difficulties posed by social inquiry. In their line of inquiry, Brush and Saye (2000, 2001, & 2006) engage in a series of research experiments aiming to question the obstacles in social inquiry, and to promote new methods of technology integration in middle and high school social studies classrooms (Saye & Brush, 1999, 2002, 2004).

Brush and Saye (2002) provide an example drawing from an earlier research by Jacobson, Maouri, Mishra, and Kolar (1996) in which hyperlinks were embedded within a database in order to provide students with conceptual links between information. The study by Jacobson et al (1996) demonstrated that students who were provided with the conceptual links gained a deeper understanding as opposed to students who freely explored the database.

In agreement with the above research by Jacobson et al, Brush and Saye (2006) state that multimedia resources that are appropriately structured can enrich students’ engagement due to the provision of multiple representations that reflected real-life social issues. Notably, Brush and Saye extended Vygotskian’s Zone of Proximal Development theory by having technology as the knowledgeable tool in scaffolding students’ learning.

Likewise, other researchers suggest that rich and authentic contexts facilitated by multimedia learning environments support and encourage students to become more engaged with
the instructional content. For example, Girard & Harris (2012) point out that technology can be an important tool to scaffold and guide literacy work for social studies students.

In addition, Lajoie (2000) concurs that given the complexity of learning social studies, the computer-based learning environments with internet resources become essential pedagogical tools to present multiple representations of complex content and allow learners to have more control over how they interact with material.

To assist disciplined inquiry into ill-structured problems, these researchers argue that scaffolding tools in multimedia learning environments can facilitate learning (Hannafin, Land, & Oliver, 1999; Hmelo-Silver, 2006; Jacobsen et al, 1996; Land & Zembal-Saul, 2003; Masterman & Rogers, 2002; Reiser, 2004). They further recommend the application of multiple support structures within a multimedia environment to facilitate implementation of online activities in secondary social studies classes. (Hannafin, Land, & Oliver, 1999; Jackson, Stratford, Krajcik, & Soloway, 1995; Linn, 1995; Vygotsky, 1978).

Research also shows that for social studies students to attain a higher level of understanding, scaffolding tools are necessary because in contrast to experts, students do not employ metacognitive strategies (Wineburg, 1999) to monitor and guide their cognitive process when they are investigating problems. Therefore, the challenges of working with ill-structured problems and a lack of metacognitive and learning strategies hinder students’ abilities to engage actively and rigorously in social studies classes.

Evidently, the above research studies point to the significant role of conceptual, strategic and regulatory scaffolds to be embedded within a computer-based learning environment. For students to effectively work with ill-structured domains, complex information sources, and attain
higher level of understanding, the CWR with its embedded SRL scaffolded lenses would be helpful for them to stay on the right track, know what strategies to use, and be able to construct well-reasoned and well-supported claims. The following sections elaborate on the Critical Web Reader.

2.6. The Critical Web Reader (CWR)

The CWR is an online resource that has been used to support source work, inquiry, and student reasoning about social issues in Singapore’s Social Studies curriculum. To support student learning, the CWR integrates methods of disciplined inquiry, sociocultural theories of learning, and literacy practices (Baildon & Damico, 2011). The following (Figure 2-2) is an example of the CWR interface.

![Figure 2-2 An example of the CWR interface](image-url)
Damico and Baildon (2007) at Indiana University designed and developed the CWR to guide teachers and students to engage strategically with web-based texts by evaluating credible informational sources. The CWR provides guiding questions in the form of “lenses” as suggestions to assist students’ learning within a CBLE. The scaffolded lenses refer to 1) descriptive lens, 2) academic lens, 3) critical lens, and 4) reflective lens.

Briefly, the descriptive lens helps to determine the relevance and reliability of online texts and links. The academic lens assists readers examine claims and evidence on a site. The critical lens helps to identify included and omitted perspectives on a site. It further evaluates how authors and web creators attempt to influence readers through the use of words, provocative images, and links. Finally, the reflective lens assists readers to examine how their own beliefs, values, and experiences affect their reading.

To assist students to construct knowledge of a particular social studies issue, the CWR provides a range of online information sources such as YouTube videos, websites, and social media to explore various perspectives and representations of content as opposed to traditional textbook accounts (Baildon & Damico, 2011). Similarly, to motivate and scaffold students’ learning, the CWR uses online information sources for students to construct their understanding in relation to overarching topics’ and questions; and provides lenses with guiding questions, tips, or reminders for them to engage in analytical, interpretive, and evaluative work (Baildon & Damico, 2011). See the following (Figure 2-3) for an example of an online video source for students’ viewing, after which, they could type in their responses in the provided workspace for assessment purpose.
Figure 2-3 An example of a CWR interface with an online video source

The CWR lenses with embedded questions and prompts scaffold students’ learning skills and promote skills development in areas of making inferences, evaluating claims, and comparing and contrasting information process. For instance, the lens for evaluating claims asks questions such as: What claims does the author make? What evidence is used to support these claims (the use of statistics, testimony, or anecdotes)? Does evidence support the claims? Explain.

In addition to embedded questions, scaffolding features include pop-up references with definitions and examples of key terms to help students to think about the nature of the claims and evidence presented in the informative sources (Baildon & Damico, 2008). See the following (Figure 2-4) for an example of a pop-up definition.
Further, the teacher can modify each lens to include a rubric so that students can gauge their answers in relation to the lens questions. In essence, the CWR is a systematic yet flexible set of digital learning tools that guides students to engage strategically with online information.

Building on the CWR’s flexibility in guiding students to learn, the current research embedded effective SRL regulatory strategies as lenses for students to focus on their own thoughts, to better understand the activities they are engaged in, and to take part in the processes of SRL such as planning, monitoring, and self-reflecting. As Medvedeva, Tseytlin, and Crowley (2010) have pointed out, a computer-based learning environment requires learners to employ effective regulatory strategies for information processing and problem solving. The SRL instructional prompts in the forms of guiding questions and reminders were embedded in the CWR lenses as part of the social studies activities.

Bannert and Reimann (2012), recommend that one of the general principles for effective SRL instruction is that SRL learning activities should be integrated with the domain-specific
instruction. In their research, they used different types of SRL prompts to aid students’ learning. For instance, to begin, the prompts assisted students to orientate the learning content by asking questions such as: what is the task and what resources are available? In so doing, the prompts helped students to get a general idea of the learning material, and skim over the structure or some pages in order to gain an overview of the type and amount of information. Similarly, Wirth (2009) points out that prompting is a possible instructional method for guiding and supporting learners' regulation.

With reference to the above research studies, in the current research, the SRL prompts in the CWR were designed with key recommendations deriving from various research findings. In the CWR, the SRL prompts were created in the forms of short questions or explicit instructions (Bannert, 2009) aiming to assist students identifying the key ideas or important points of sources, to discern what perspectives were included or omitted in the source, and to write a short paragraph of what they learned about the activities.

These short questions and explicit SRL instructions were designed with three phases of Zimmerman SRL model in mind (Zimmerman, 2011). For instance, the *planning* prompt was designed to help students to plan ahead before reading the sources, thus, it prompted them to first pay attention to key ideas or important points in the inquiry topic before delving into the text. The *monitoring* prompt aimed to help students to monitor their learning by practicing self-questioning such as what perspectives were included or omitted in the source. The *self-reflection* prompt encouraged students to reflect on what they had learned by writing a short paragraph. Briefly, the self-reflection prompt scaffolded learning by encouraging students to actively connect key ideas from provided sources by writing a short paragraph of what they had learned. See *Figure 2-5* for an example of a SRL reflection prompt asking students to write a short
paragraph of what they learned from the provided sources in relation to the topic of globalization.

5 Figure 2-5 A screenshot of the Critical Web Reader (CWR) learning environment with scaffold for supporting self-reflection.

2.7. Contexts of Singapore Social Studies

In Singapore, the curriculum for citizenship education in the global city has been subjected to continuous changes. The constant adjustments started since 1967 with changes from Ethics to Civics as a programme of learning for citizenship; 1974 witnessed the change to Education for Living; the course was renamed Being and Becoming in 1981; 1992 brought a new course that emphasized Civics and Moral Education; 1997 gave priority to National Education; and in 2001 Social Studies was introduced as a vehicle of National Education (Alviar-Martin & Baildon, 2016). These continual changes signify the Singapore government’s effort to make sure that its young citizens were prepared with crucial capacities, values, and skills for a globalized world.
The introduction of Secondary Social Studies in 2001 sought to develop thinking skills and national identity in order for citizens to work in a knowledge-based society and develop a sense of belonging (Alviar-Martin & Baildon, 2016). The Social Studies syllabus aims to inculcate students’ understanding in issues related to these different areas: 1) socio-economic development, the governance and future of Singapore; 2) gain from other countries’ experiences in areas of building and sustaining a vibrant Singapore; 3) cultivate empathetic citizens; and 4) develop shared destiny and national identity (Alviar-Martin & Baildon, 2016).

To prepare students for globalization, the 2000 Report of the Committee on Compulsory Education in Singapore (MOE, 2000) highlights that it is increasingly necessary for young students to develop skills such as problem-solving, communication, thinking, and IT capacity. Likewise, Prime Minister Lee Hsien Loong (2013) reminded citizens of the importance of the continual upgrading of skills: “You must be able to continue to reprogramme yourself, download new firmware, reboot if necessary and continue to be useful for a very long working career (online source)”. In 2014 curriculum documents, MOE refers to globalization, changing demographics, and technological advancements as key driving forces of the future (Alviar-Martin & Baildon, 2016).

The Social Studies syllabus accentuates the need to ensure students understand their commitments to the country, and indicate the importance for them to be adaptable, technologically savvy and lifelong learners in order to prosper in a highly competitive global economy. To develop skills and capacities in these areas, SRL can be a driving force for students to partake and excel in a highly competitive global economy.
2.8. Summary

In today’s digital world, students are learning differently from the generation of their teachers because they are constantly surrounded by a constellation of digital devices for assessing, sharing, and managing knowledge. Similarly, the various 21st century educational frameworks posit that students’ ability to access and use digital information is one of the critical skills needed to become successful learners.

To help students to take more responsibility of their learning, researchers have given greater attention to the importance of students developing SRL skills. Research studies continue to show differences between successful and struggling learners by pointing out that the former possess a range of strategies to regulate their own learning as opposed to the latter who often lack these strategies (Hodges, & Kim, 2010; Jakubowski & Dembo, 2004). Moreover, researchers have found that the learning of SRL skills is positively associated with knowledge acquisition in computer-based learning environments (Greeno & Azevedo, 2009; Kauffman, Gie, Xie & Chen 2008).

To understand students’ active participation in searching for knowledge and skills, and to describe and explain different conceptions of SRL, the current research reviewed seven prominent SRL theoretical perspectives to gain a brief historical understanding of the development of the SRL frameworks. These different SRL conceptions offer directions, insights, and diverse perspectives ranging from operant to cognitive constructivist.

This research draws from two influential frameworks: the social cognitive and the sociocultural perspective. The former paradigm supports understanding of SRL through Zimmerman’s SRL model in which the SRL processes can be categorized into three cyclical
phases: Forethought, performance, and reflection. The latter illuminates the importance of social scaffolding. Importantly, the synthesis of the above multi-dimensional SRL theories points to the importance of physical, social, and environmental influences as key resources for attainment of SRL.

To scaffold literacy work for social studies students, Girard and Harris (2012) and Baildon and Damico (2012) propose that technology can provide important tools to guide their learning; nevertheless, it is worth noting that limited research exists on instructional scaffolding in Singapore’s Social Studies classrooms within the context of computer-based learning environments. As an inherently multidisciplinary subject, social studies draws from the disciplines of History, Geography, Economics, Sociology, Psychology, and Political Science; it entails seeing the world from diverse points of view and comprehending an abundant amount of information, and accessing almost limitless resources (Kottler & Gallavan, 2015).

As a result, there are challenges for students to synthesize information from a range of information sources in a coherent manner (Baildon & Damico, 2011), and be able to read skillfully in a dynamic and sophisticated ill-structured domain (Spiro, Collins, Thota, & Feltovich, 2003). In addition to the challenges of ill-structured issues, Brush and Saye (2006) point out another challenging learner-related issue, which is students’ readiness to grapple with cognitive difficulties posed by social inquiry.

Given the complexity of learning social studies, internet resources and the use of technology become essential pedagogical tools for accessing information and effectively working with information in classrooms. To better understand SRL in the learning of social studies, this research utilized an online resource, the CWR, by embedding SRL instructional scaffolding for better conceptual understanding and strategic skills development.
Building on the CWR flexibility, this research embedded SRL prompts in the forms of short questions or explicit instructions aiming to assist students to identify key ideas, to discern what perspectives have been included or omitted in the source, and to reflect on what they learned from the CWR activities. As Azevedo and Hadwin (2005) state that without instructional scaffolding, students have problems regulating their learning and achieving conceptual understanding, this research aims to investigate the extent to which the SRL instructional prompts can be productive for students to obtain favorable learning outcomes.
3. Chapter Three: Methodology

The current research utilizes an online educational resource, the CWR, by embedding SRL instructional strategies with the aim of scaffolding students to focus on conceptual understanding and apply strategic skills such as monitoring one’s learning. In essence, this research study aimed to explore the effectiveness of the CWR with SRL prompts in guiding Singaporean Secondary Social Studies students in learning; and to examine the extent to which these students used SRL strategies to help them when learning the subject. Following are the two research questions (RQs):

**RQ1:** To what extent is the Critical Web Reader useful for Secondary Social Studies students to become more aware of their learning?

**RQ1a:** How does the CWR support and constraint students’ learning?

**RQ1b:** In what ways did the SRL prompts facilitate students’ awareness of their learning?

**RQ1c:** How did students’ attitudes and values about social studies impact the way they considered the CWR to be useful for their learning?

**RQ2:** What are the Self-Regulated Learning strategies used by Secondary Social Studies students?

**RQ2a:** What are the different learning approaches used by students when learning Social Studies?

**RQ2b:** What are the planning strategies used by students to engage in the process of learning?
**RQ2c:** What are the monitoring strategies used by students to keep track of their learning?

**RQ2d:** What are the self-reflection strategies practiced by students?

To address the above two research questions, the following sections elaborate on the various methods used in assisting this exploration.

### 3.1. Design

Through a case study approach with a qualitative lens as the methodological framework, this research addresses the two research questions concerning SRL in social studies at the secondary level. The objective is two-fold: to find out about the students’ views on using the CWR with its embedded SRL lenses; and their applications of SRL strategies. A case study design was selected for several reasons. First, researchers use case studies to investigate students’ experiences, conceptions, or engagements in academic environments (Butler, 2011). Similarly, the current research aims to explore students’ perceptions of their engagements in a computer-based learning environment.

Second, to explain a phenomenon, the case study method uses multiple sources of evidence such as archival records, documentation, direct observation, interviews, participant-observation, and physical artifacts. These multiple data sources provide complementary information that, when juxtaposed, allow for creating a more complete understanding of a phenomenon; and also allow for triangulation of evidence to render greater credibility through the use of multiple data sources (Yin, 2003). Likewise, the current study used interview data as the primary data source; and online written responses as a supplementary data source. The application of these multiple sources of evidence provided a rich description of the SRL phenomenon as a result of triangulation.
Finally, the qualitative case study design does not attempt to control the behavior of the participants; similarly, the current research aims to understand their perceptions without manipulating the context. As Yin (2003) points out, a case study is an “empirical inquiry” that examines a phenomenon in “real-life contexts” (p. 13).

According to Lapan, Quartaroli and Riemer (2012), there are five types of case studies: (1) single case study, (2) multiple case studies, (3) multiple site case study, (4) comparative case study, and (5) longitudinal case study. In this study, the researcher utilized a single case study design due to investigation of one type of computer-based learning environment, the CWR and one educational phenomenon, the SRL strategies used by students.

Furthermore, the rationale for using a case study approach is because it can facilitate “insight, discovery and interpretation” (Merriam, 1998, p. 28-29) as well as “in-depth understanding of a case” (Creswell, 2007, p.78). A case study can advance understanding of the interplay between individuals and social processes as they unfold in authentic activity (Yin, 2003). In this research, a qualitative case study helped the researcher to draw insights and develop an understanding and interpretation of the educational processes and outcomes as perceived and experienced by the Secondary Social Studies students. The current case study aligned with Cronbach’s (1975) description of a case study as “interpretation in context” (p. 123).

According to Merriam (1998), qualitative case studies can be particularistic, descriptive and heuristic. Particularistic refers to focus on a specific situation, program, or event. Descriptive discusses the end product of the study as a rich and thick description of the phenomenon under study. A heuristic case study endeavors to discover new meaning, extend the reader’s experience, or validate what is known.
The descriptive case study methodology was appropriate for the current study because it sought to provide rich and thick description of the phenomenon - the self-regulated learning strategies of students in social studies - under study. As a result of using a case study design, the researcher describes in thick and rich terms how both motivated and unmotivated students learn social studies; describe their learning experiences; and share their views about how to apply SRL strategies within real-life contexts situated in classes and out-of-classes. Subsequently, the descriptive method of this case study provides a deep and rich portrait of the computer-based learning environment which encompasses SRL phenomenon.

3.2. Methods

**Purposeful sampling.** To identify key participants for this research, a purposeful sampling strategy was utilized in order to gain insight and deeper understand of issues that were related to the current study. Suri (2011) explains that purposeful sampling in qualitative studies gives the researcher the opportunity to gather information on participants’ perceptions through inquiry to provide a deeper understanding of the issue. Purposeful sampling is “based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned” (Merriam, 1998, p. 61). Fraenkel, Wallen, and Hyun (2012) remark that purposive sampling encompasses the researcher’s judgment in selecting the sample of subjects that may provide the best understanding of what the researcher may investigate.

To maximize the depth and richness of this study, the researcher selected participants for the focus group interviews based on mixed abilities, diversity in cultural groups and gender, and willingness to share their learning experiences (Bogdan & Biklen, 2007; Gall et al., 2005).
selection of focus group interviews is appropriate to generate a wider range of ideas related to students’ experiences within the CWR context.

To understand the impacts of CWR on these students’ learning, students of mixed abilities and diverse backgrounds were essential to inform important facets and perspectives in relation to the phenomenon being studied. The selected participants were: Chinese (N=33), Malay (N=5), and Indian (N=6). They were willing to participate in the study and share their experiences.

As for the sample size, there were forty-four participants (N=44) from four different secondary schools. Payne and Williams (2005) explain that the numbers of participants in qualitative studies varied greatly, often including between eight and sixty participants. The sample size of this case study research is relatively high to gather a plethora of diverse perceptive data to address the research questions.

Yin (2009) recommends researchers to “aim toward analytic generalization in doing case studies” (p. 39). Qualitative sample sizes should be large enough not only to obtain feedback but also to the attainment of saturation. Glaser and Strauss (1967) propose the application of saturation for attaining suitable sample size in qualitative studies. In this study, data saturation was reached when adding more participants’ perspectives did not provide additional new information during coding.

**Research sites.** The participants for this research were from four different secondary schools in Singapore. The selection of these four schools was made based on the teachers’ past teaching experiences in using the CWR in their social studies classes. For example, the project coordinators from Bright Hill and Aston schools had previously used the CWR with their students. Thus, they made recommendation to their HODs for the implementation of the CWR to
a wider group of both new and existing teachers who looked forward to gain teaching experience in the area of technology integration.

These schools are located at various parts of Singapore with different demographic data:

1. First school, Winter Land (pseudonym): A mixed gender school with one class of secondary four students;

2. Second school, Maya (pseudonym): An all-girls school with one class of secondary four students;

3. Third school, Bright Hill (pseudonym): A mixed gender school with two classes of secondary three students;

4. Fourth school, Aston (pseudonym): An all-boys school with two classes of secondary three students.

To attend the CWR lesson, students from the first three schools went to the computer rooms in their schools while those from the fourth school received technical support from assistants who brought the laptops to the classrooms for the students. The implementation process was more efficiently conducted in the fourth school because there were no bandwidth concerns, lower login issues, or other unexpected technical problems.

The characteristics of each school can be identified through the interactions with their representative teachers. For the Winter Land Secondary School, the collaborating teacher highlighted that the school has sustained a thirteen-year robotics club since 2003. Therefore, technology integration has been part of the school culture in developing and supporting students’ interest in technology, programming, and engineering. As for the Maya Secondary School, the focus is on the development of critical thinking as a key aspect of learning across different domains. During the collaboration for the CWR activity development, the Head of Department
(HOD) stressed the importance of helping students to think more in-depth and make distinctions on the provided sources.

In regards to the Bright Hill Secondary School, it encouraged the integration of ICT for teaching and learning. The coordinator embraced and encouraged the opportunities for the school teachers to collaborate in developing CWR activities. Lastly, the Aston Secondary School aimed to nurture its students to be self-directed learners. During the implementation, the school had recently received its mobile laptops, thus, new teachers were particularly enthusiastic to work with their students using the CWR to conduct ICT lessons in Social Studies.

**Procedure.** The current research proceeded to the second phase of case study method: data collection. Briefly, the three phases of the case study method consist of: First, define and design; second, prepare, collect, and analyze data; and third analyze & conclude (Eisenhardt, 1989; Yin, 2003). This second phase involved preparation of data collection as described in the following.

After the permission to conduct the research study was secured from the Nanyang Technological University’s (NTU) Institutional Review Board (IRB), the researcher distributed two informed consent forms to all participative schools’ teachers prior to the implementations: the student assent form (Appendix A) and the parent consent form (Appendix B). The students then brought the forms home for their parents’ consent and returned to schools with the signed documents. Within these two forms, an introduction to the current research was presented; voluntary participation was stated in which students could withdraw from this study at any time, and students’ names would be kept anonymous. After securing both forms from the students, the researcher and teachers organized the focus group interviews according to the researcher’s selection as indicated in purposeful sampling.
Glesne and Peshkin (1992) argue that gaining entry into a setting is a process. They refer to the acquisition of consent to go to a school, observe and talk to participants, and obtain and read selected documents in order to fulfill the research purpose. The researcher gained entry to the four schools through the supervisor’s recommendations. The teachers who previously used the CWR were the gate keepers who facilitated the access to participants in this study.

During the implementation processes, the teachers from the four schools began their lessons by introducing the CWR environment to students. The teacher of Winter Land secondary school had prior experience working with the CWR due to collaboration with earlier research projects. With this familiarity, he started the lesson by demonstrating how to navigate through the learning activity. Although the login procedure was given to students, the researcher and a lab technician assisted them in order to facilitate efficient accessibility. The teacher’s instruction covered areas such as how to progress from the main page to viewing source work by clicking on links connected to text or video. He explained that after reading a source, the students were required to key in their responses in a box provided on the bottom right hand corner of the screen. At the same time, the teacher highlighted the activity’s and the SRL questions on the top right corner of the screen. He emphasized that all questions must be completed within the class time.

The teacher of Maya secondary school started her class in a similar manner as the teacher of Winter Land school by presenting the CWR. Likewise, she had previous work experience with the CWR. In a step by step approach, she introduced students to the CWR through the main page with displayed source links. She clicked on one of the source links and explained how to answer questions about the source. After her demonstration, all students immediately explored and started the CWR online activity. In Bright Hill secondary school, the teacher expected all
students to follow the exact procedure that she demonstrated on the projector. For instance, while she typed in her login password, the students entered their identifications at the same time. Simultaneously, the researcher and a technician assisted students who had login issues. After knowing that everyone was on the same page, she introduced the CWR interface. She highlighted the provided links, briefly explained the different sources, and checked that the students understood what was expected from them in order to complete the activity. This was a secondary three class, whereas the two previous schools were secondary four students where teachers gave more opportunity to freely explore the CWR.

Finally, in the fourth school, Aston, the teacher’s approach was similar to Winter Land and Maya whereby he first demonstrated how to navigate through the CWR context. After, he instructed students to login and start with the activity. The students went through the sources and entered their responses related to the activity and the SRL prompts. All students from the four schools provided online answers which were used to triangulate data collected from the focus group discussions. The online data helped to compare similarities or differences among the students’ answers collected electronically and responses reported during the focus group discussions. For instance, the comparison of students’ online answers toward self-reflection and their views during the interviews.

Next, before the focus group interviews began, all teachers kindly assisted the researcher in organizing meeting venues in the library, in the general office and the multipurpose function rooms. The teachers were well aware of their students’ schedules; they further arranged dates and times as according to students’ after school availabilities. The participants were told that the interview would be audio recorded and that the results would be treated as confidential with access restricted to the researcher only. To build rapport and establish trustful interaction with
the participants, the researcher briefly introduced herself, and invited the participants to introduce themselves as a way to establish confidence between the researcher and all participants. As Molden (2011) points out, productive communication starts with trust and understanding, without these elements, people can be skeptical and suspicious, and subsequently risk the information that the researcher collected. At the same time, while the participants briefly introduced themselves, the researcher took note of their names, seating positions to facilitate better identification of participants during data transcribing. See the following table (Table 3-1) for a summary of the four schools, including dates, activity types, and numbers of participants in different schools for data collection.

<table>
<thead>
<tr>
<th>Number and name of schools</th>
<th>CWR activities with embedded SRL lenses</th>
<th>Duration</th>
<th>Data source</th>
<th>Month of data collection</th>
<th>Number of participants</th>
<th>Pages of transcripts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Winter Land (Sec 4)</td>
<td>Globalization Two text sources, one video link, and one comic source</td>
<td>One class</td>
<td>Focus Group Interview (FGI)</td>
<td>May 2015</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>2 Maya (Sec 4)</td>
<td>Globalization Same as above</td>
<td>Two classes</td>
<td>FGI</td>
<td>June 2015</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>3 Aston (Sec 3)</td>
<td>Poverty One text source, and two video links</td>
<td>Two classes</td>
<td>FGI</td>
<td>July 2016</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>4 Bright Hill (Sec 3)</td>
<td>Poverty Same as the poverty activity above</td>
<td>Two classes</td>
<td>FGI</td>
<td>August 2016</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>44</strong></td>
<td><strong>89</strong></td>
</tr>
</tbody>
</table>
**Participants.** The first and second schools consisted of secondary four students who were 15 and 16 years old. The third and fourth school involved secondary three students who were 14-15 years old. There were fifteen (N=15) female students, and twenty-nine (N=29) male students. Participants were from three different cultural groups, Chinese (N=33), Malays (N=5), and Indians (N=6). The Winter Land Secondary School is a mixed gender school with participants (N=7) from the Normal Academic (NA) track. The Maya Secondary School is an all-girls school with participants (N=4) from the Express (EXP) track. The Bright Hill Secondary School is a mixed gender school with participants (N=21) from the Express (EXP) track. Lastly, the Aston Secondary School is an all boys school with participants (N=12) from the Normal Academic (NA) track. See the following table (Table 3-2) for a summary of the participants:

<table>
<thead>
<tr>
<th>Schools/Participants Pseudonym</th>
<th>Types of school</th>
<th>Gender: Female/Male</th>
<th>Secondary 4 Express/Normal Academic</th>
<th>Secondary 3 Express/Normal Academic</th>
<th>CWR Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>First School: Winter Land</td>
<td>Mixed</td>
<td></td>
<td>Normal Academic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group One:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.YSL (Chinese)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td>Globalization</td>
</tr>
<tr>
<td>2.NY (Malay)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.Jennifer Y (Chinese)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.JT (Chinese)</td>
<td></td>
<td></td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Two:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.QQ (Chinese)</td>
<td></td>
<td></td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.Kovan (Chinese)</td>
<td></td>
<td></td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.AL (Chinese)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second School: Maya</td>
<td>All Girls</td>
<td></td>
<td>Express</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.Hillary (Indian)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.Elizabeth (Indian)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.CT (Chinese)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.Calyn (Chinese)</td>
<td></td>
<td></td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third School: Bright Hill</td>
<td>Mixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class (A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.Globalization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 Table 3-2 Participants’ demographic characteristics
The above participants represented a range of upper secondary students willing to share their views concerning the CWR learning experience and SRL strategies. This qualitative research aims to gain insights into the participants’ thoughts, feelings and experience with the
phenomenon under study. Therefore, finding the participants who were willing to share their thoughts and experience was crucial for this research to gather insights and develop understanding of the selected participants. The following section presents an introduction of individual participants with the purpose of providing depth and richness of participants based on mixed abilities, diversity in cultural groups and gender, and willingness to share their learning experiences (Bogdan & Biklen, 2007; Gall et al., 2005). The forty-four participants were identified as P1, P2, P3 to P44. Brief profiles of the students participating in this study are provided below.

**First school, Winter Land**: The focus group interview started by having students sharing where they would see themselves going after secondary four. The intention of this approach was to create an ice-breaking moment for students to feel more at ease, comfortable, and free to exchange their views about their plans in near future. The duration of the interview went over an hour.

**P1: YSL**

YSL mentioned that during examinations or test periods, she would actively seek help from her social studies teacher. She said that she does not use any learning strategies to assist her learning, she mainly depends on memorization. To her, repeated practice and consulting the teacher are important components for learning social studies.

YSL found the CWR globalization activity to be interesting. It provided her a new perspective about the positive and negative aspects of globalization, and their impacts on countries. She commented that she used to think that globalization was about trading only.

**P2: NY**
To learn social studies, NY stated that she usually studies her class notes by using a storytelling approach as she finds it easier to memorize and interesting. She mentioned that in social studies classes, Mr Tan often uses videos. She links videos and jokes shared in classes as a reference source to help her when studying the textbook.

NY did not see how reflection could help her to become a better learner, but she suggested that good reflection questions should ask: “Was it interesting?” “Did you do anything when you did not understand the subject?” “When you do not understand, do you do something about it or just ignore it?” The student next to her said she did not like those questions either, but NY continued to suggest: “Or what more I can do?” Finally, she concluded that she found the CWR activity helped the class to gain more information.

P3: Jennifer Y (JY)

When it comes to test papers, Jennifer set clear goals for the grades that she expects to score in different sections. She said that if she did not obtain the expected grades, she would feel very sad, but, she stressed that she looked through the paper to find out what she could have done better. She pointed out that to help herself to improve on her own learning, she helped her classmates by teaching them the topics.

She commented that the SRL lenses helped to narrow down exactly what needed to be done. She explained that within a source, a lot of information was given, but the SRL questions helped learners to understand what were the crucial points needed to answer a question.

P4: JT

JT considered peer learning and help seeking from the teacher to be his main learning strategies. Although he found memorization to be difficult, he continued to use it as an
approach for preparing for examinations. For him, studying at the last minute helps him retain memory of the contents, and after an examination he simply forgets what he tried to remember during the exam.

He commented that the CWR activity, particularly the comic source, helped him to think critically about the topic. Before being introduced to the CWR globalization’s activity, JT associated globalization with technology; he linked it to Facebook. The CWR comic source helped him to gain a wider perspective of globalization.

P5: QQ

QQ was cheerful and highly engaging. His thoughts frequently went out of the context of the focus group interview, the researcher had to remind him several times to stay focused within the issues being discussed. QQ said that he needs special attention during examination periods because of his reading disability. During examination, an assistant reader would read the exam paper to him. He explained that if he has to read a text by himself, he may not understand, but if someone reads it to him, he is able to comprehend better.

QQ found the CWR questions helped him to think more in depth. He remembered the questions asked about the main ideas in a source, and the task required him to summarize what he had learned. Although he did not think that the reflection question was interesting, he felt that the embedded SRL questions helped him to think more about ways to approach a source.

P6: Kovan

Kovan shared that in the past, he just read a source without giving much thought to what he needed to do or asked questions about what he read. He remained one of the top fifteen in
class; however, 2015 was his final year and he wanted to do his best, thus, he changed his
techniques. As a result, he became the top student in his class.

Kovan was more comfortable using text-based source over online source-based learning. He found the video source a little confusing because he did not enjoy clicking all the directional keys. He preferred to work with hard copy text because he could use a pencil to circle words and key points about the subjects. Kovan commented that he did not like the internet. He was accustomed to working with printouts, hard copy sources, but with the internet, he felt that he could not work in ways he normally did, as he stressed that it was important to write, circle, or highlight by hand.

P7: AL

To monitor her learning progresses, she compared test results from different periods: beginning of the year, mid-year, to the most current. Her objective was to compare the differences in marks. She found that the differences were a result of her lack of effort when preparing for examinations. She reflected further and concluded that she was distracted by her hand phone because she often spent time playing games.

AL added that without the SRL embedded questions, she would only be scratching the surface of the source without going in-depth. The embedded questions prompted her to investigate further and find the underlying meaning of information.

Second school, Maya: Four girls in this school were interviewed, with the interview lasting over an hour. Two participants were actively engaged in the sharing, two other participants needed more prompting.

P8: Hillary
Hillary shared that since she was young, she always preferred the Arts stream over the Science. Her interests in Social Studies was the drive for her to do well. To be an effective learner, she focused on understanding rather than memorizing. She used the storytelling approach and self-questioning to help with understanding a topic.

She reflected on the CWR learning experience and concluded that it was a valuable experience because the activity helped her to think out of the box. She considered the CWR activity to be innovative and it enabled her to gain wider knowledge on issues related to globalization.

**P9: Elizabeth**

Elizabeth described herself as being a carefree individual last year. However, due to the stress of upcoming examinations and the preparation for Polytechnic admission, she had to put more effort and time on homework. She recognized her weakness in identifying most important points or key evidence in a source because frequently she copied chunks of evidence from a source without questioning the most appropriate answer.

Elizabeth commented that working with the video source was confusing due to the various perspectives given; she was unable to remember all the content being discussed in the video. She preferred to work with a textual source because she could read and re-read repeatedly.

**P10: CT**

CT compared differences between the CWR and in-class activities. She found that the in-class sources were shorter as opposed to the longer ones from the CWR. She felt uneasy that she had to read more than usual although sufficient time was given to complete the activity. She found hard copy textual sources to be easier to work with, whereas the online video was
confusing because she had to go back and forth in order to understand. With hard copy sources, she could easily take down notes, and link back to the question.

However, she commented that the CWR activity made them think more by providing a better understanding of what they were reading instead of just answering the questions. She concluded by adding that although the online sources were long, they provided the necessary information for students to elaborate and answer questions.

P11: Calyn

In the beginning of the interview, Calyn communicated much less but half way during the interview, she spoke more. She and CT needed more prompting from the facilitator. To prepare for social studies, she felt that knowing the content was important and reading newspapers was helpful to build strong background knowledge. She often used mind maps to link key words, main ideas, or the entire topic, and engaged in help seeking from her teacher.

Third school, Bright Hill: The focus group interviews were conducted in four groups, each consisted of five, six, and seven students. The durations ranged from forty-five minutes to an hour. However, due to a larger group size and limited time, students had less opportunity to elaborate their thoughts.

Class A, Group One: Students worked on the poverty activity. There were seven participants in this group. The focus group interview was completed within 45 minutes. Out of the seven participants, four shared more actively than the other three who provided very brief responses. Due to time constraint and a large group size, the facilitator did not try to prompt the three participants for more responses.

P12: Ramon
Ramon suggested that the best way to learn social studies was to improve on language skills. He recommended reading, speaking, or practicing more on exam papers. He claimed that most of the questions for social studies were the same, but the sources were different. For the most part, he consulted his teacher for help on possible examination questions, how to score well on exam, and how to improve his learning. He felt that doing homework and asking for the teacher’s help were sufficient to prepare for social studies.

**P13: Mac**

Mac considered the SRL guiding questions to be helpful by pointing out that they assisted him to think of ideas on the spot, realize more about what he was doing, and be able to elaborate more in his responses to questions. He further commented that while reading a source, he may skip important ideas, or the main ideas, but the SRL guiding questions highlighted the key ideas to focus on.

**P14: Dani**

During the CWR activity, Dani took down notes on a separate piece of paper (rather than use the CWR workspace), followed by typing, expanding, and elaborating on his answers. Similar to some participants, he found the CWR sources long. His strategy for reading a source was to identify key points and then write a short summary using key points as an answer.

At home, he practiced writing English essays and he applied the same writing approach to social studies. He regarded language skills to be key in performance. To do well, he preferred to seek the teacher’s help because he did not trust himself.

**P15: TH**
Compared to some participants, TH was very clear about using the two formulas to help him do well on examination items: 3A and PEEL (these are writing formulas to help with answering questions). He used both to answer a question. For example, in first point of PEEL, he would incorporate 3A. He found the SRL guiding questions to be effective; they helped him to look for or narrow down key ideas in a provided source.

Compared to majority of students who reported help seeking behavior, particularly from their teachers, TH indicated that he monitored his learning based on the teacher’s grading by checking on areas that needed improvements.

The following three participants, HX, MACO, and ZY spoke little during the interview.

P16: HX

HX commented that the SRL guiding questions helped him to stay focused, think about how to answer questions, and stopped him from going off point, which happened before when he wrote content that was irrelevant.

P17: Maco

Maco used his grades to monitor his learning in social studies. For instance, if he did not get the grade as he had expected on assessments, he would read more on content details and check for key points in that particular area. He suggested that one should understand one’s work, and know what the teacher wants or looks for in student’s answers.

P18: ZY

Although she was rather quiet throughout the focus group interview, she listened attentively to her peers’ sharing. During the process, sometimes, she nodded her head showing
her agreement with her peers, or she laughed with others. If she provided or shared her views, it would usually be very short, in a few words, and not in a complete sentence. For instance, for the question: “what are the interesting or least interesting parts using the CWR to learn Social Studies?” She replied: “we type faster than we write.”

Bright Hill (Class A, Group Two): There were three participants in this group. A student showed up but explained that he had to leave because of a tuition class. The duration was within 45 minutes. With a smaller group size, the participants were given ample time to elaborate on their thoughts about their learning experiences within the CWR context.

**P19: Norman**

Norman commented that the SRL guiding questions helped him to work with the online sources. He referred to them as stepping stones for what they were going to learn so that they would not go off-track.

Norman reckoned that students have to be proactive in their learning. Usually, he would read about a new topic to gain some idea before the teacher went over it in class. He is not a frequent help seeker unless he has difficulties in comprehending the topic or issue and then he would seek the teacher’s help. He regarded this approach as better than being told by the teacher what to do.

He supported the integration of the CWR in his Social Studies classes by explaining that in a text-based classroom, the sources were often short, and lacked content. But the CWR online sources provided substantial background information without shortage of content, which in turn provided more evidence for him to elaborate and write his answers.

**P20: Fai**
Fai presumed that reflection is not good for students. He preferred to have the teacher’s help rather than students’ reflecting on their learning. To him, reflection is time-consuming, and they have substantial work to do, so, let the teacher help the students. In regards to the CWR, Fai shared that although computer was much faster in terms of getting things done, he preferred to stick to writing on paper because it is the format of ‘O’ level exams.

P21: Myra

Myra shared that the SRL guiding questions assisted her to stay on the right track without missing the key content. She considered learning within the CWR context to be an interesting experience, particularly the viewing of the video which was not a usual learning experience in her classroom. She observed that the video provided multiple perspectives to comprehend the topic of poverty since she could visually view the various perspectives being presented in the video.

Bright Hill (Class B, Group One): The duration of the focus group interview was 45 minutes and involved five participants. In general, the participants showed very little interest in learning social studies. Frequently, they referred to social studies as an uninteresting subject. As a result, students’ responses were short, without insight, and lacking enthusiasm.

P22: RT

RT considered that learning with computer was an easier task because he could simultaneously Google for information. He was more motivated using online sources than in class using paper-based sources.

P23: KSH
From the beginning of the discussion, KSH showed strong dislike of Social Studies. He said: “I don’t study Social Studies, I just listen in class.” To him, Social Studies is common sense and boring, but for Mathematics, he would plan a time-table including the duration of revision time, frequency per week, and number of questions to work on. He later remarked that Social Studies focused mainly on Singapore and was Singapore-centric. He would like to learn more about the world and see things through different perspectives.

Surprisingly, he commented that the SRL guiding questions were useful in terms of guiding him to think about what to write.

P24: ODDIE

Oddie shared that he used his class notes to prepare for Social Studies examinations. The class notes were prepared by the teacher for students to gain a general overview of the topics. To revise, Oddie followed up by finding out the right formula to use for different types of questions.

P25: STEVEN

Steven claimed that he does not study Social Studies but when he is in the mood to study, most likely he would check with his friends on revision. For the most part, he used peer-helping as an approach when working with homework. However, he considered the utilization of the CWR to be efficient for everyone because the speed of typing was faster than writing, and that emailing homework could be more convenient.

P26: QY

In class, QY wrote down notes while the teacher went through the topic. Each night, she went through the notes and tried to memorize the contents. To help her memorization (during the
poverty activity), she asked questions such as, “How did people get poor? Did they have to work on two jobs?” QY considered the SRL guiding questions conducive for learning because they stimulated more thinking. To her, learning with the CWR was more convenient because she could use online options to search for evidence, which she could not do it in a pen and paper-based class.

Bright Hill (Class B, Group Two): Six participants in this group. The duration of the focus group interview was 45 minutes.

**P27: Cindi**

Cindi pointed out that in class the teacher often asked students to indicate the main points in a given source. By doing that, the teacher wanted them to discern and identify main points of each source. She connected the teacher’s instruction with SRL guiding questions by concluding that through constant asking or checking, students inevitably would cultivate the habit of identifying key ideas from a source.

**P28: Rimi**

Rimi was captivated by the poverty video, which he found it to be very interesting. He explained the advantages of viewing a video over reading from a textual source. With the video, he was intrigued to see a real-life case example of a family whose members had to live with a monthly tight budget in order to make ends meet. He appreciated the mixture of information being presented in various ways to support the illustrated case. For instance, statistics was used for the purpose of comparing different income levels.

**P29: HWS**
She remained quiet throughout the interview. Her responses were brief, and she tended to respond that her answer was the same as her peer.

**P30: Kym**

Before starting an activity, Kym shared that she would plan how long she wanted to take for each task, and how long she thought it would take to complete the questions. For all the subjects in school, she would write down notes to facilitate memorization. She paid special attention whenever the teacher remarked that a particular area was important to annotate. She then followed by adding in more notes from the relevant chapter.

**P31: Nelly**

Nelly commented on the interactivity aspect of using the CWR. She preferred to work with the CWR because it was a more hands-on user experience. With the multi-media CWR environment, she found learning of Social Studies to be more interesting and motivating.

**P32: CK**

He remarked that the poverty video was boring due to its content. To CK, students were indifferent to the topic of poverty. He explained that his generation of students care less about income or inequality. In addition, the video was old (2009), and a more updated version would better grab students’ attentions. However, he approved of the last video, *Skillsfuture*, for its animation, and its up-to-date version.

**Fourth school, Aston:** The focus group interviews were conducted in two groups. The durations ranged from an hour twenty minutes to one hour thirty minutes. In this school, time
was less of an issue, Thus, the participants had more time to share their perspectives in relation to the interview questions.

Class A: In this class, the teacher preferred to have his students volunteer their participation. Six students voluntarily participated in the discussion.

P33: YT

YT did not think that the SRL guiding questions could be helpful for him, he explained that there were many questions to be answered during the poverty activity, and unless it was really necessary, he would not use the SRL guiding questions. To him, if an activity was easy, he would not need the SRL guiding questions.

P34: Justin

Justin further elaborated YT’s point on both the usefulness and less usefulness of having SRL guiding questions. He shared that if a provided source was easy, there was no need for guiding questions; in contrast, if a source was difficult, or the text longer, then, the guiding questions can become helpful for students to understand the topic, and be able to provide better answers.

He further reasoned that the effectiveness of the SRL guiding questions could depend on the subject. For Social Studies, History, and English subjects, he thought that the guiding questions could help, whereas for Chinese, he did not think that it would be helpful.

P35: Caleb

In general, Caleb’s responses were longer and with more insights on how he viewed an issue or approached his learning in Social Studies. To him, the SRL guiding questions were
helpful to keep him on the right track and direction. He said that when he engaged in source analysis, he tends to answer the provided questions rather than understanding the source or the context of the reading. But, the SRL guiding questions helped him to focus his reading.

P36: Leo

Although Leo said that he was not interested in Social Studies, he voluntarily participated in the interview. He said that the SRL guiding questions helped him to think about whatever he learned. During the discussion on why students commonly read a source and find an answer to the question without putting more effort to gain in depth understanding, Leo asked what would students want to really understand instead of just giving an answer. His peers poked fun at him by saying that there were other students who really wanted to excel in Social Studies. Leo raised his voice sharply and asked: “Wait! For Social Studies, what is there to understand!”

P37: Jai

In the beginning of the FGD, Jai associated reading a source and answering the question as a form of learning strategy. He connected a common practice between his secondary and primary education: read the question, then the text, read the text or source again and again until the question is understood. He was not aware that learning strategy referred to various helpful approaches for learning. Moreover, he disagreed with Justin about using SRL guiding questions only for Social Studies, History, and English but not for Chinese. Jai thought that the guiding questions could be used for the recall purposes of any subject.

P38: WS
To study or revise Social Studies, WS wrote down all key points, and developed a paragraph for each of these key points. He commented that the more he wrote about the key points, the better they prepared him for a text or an examination.

He politely pointed out that with the SRL guiding questions, he had to think further in order to answer. In other words, he was suggesting that the SRL guiding questions required more effort which may not be necessarily helpful because more work was required to complete a question.

Class B: During the focus group interview, the interactions among these participants were active and constructive. Occasionally, there were disagreements between the top and mid performers, but both provided logical rationalities concerning their views on issues related to interview questions.

P39: Ben

Ben was a quick thinker but he maintained silence when there were disagreements among other participants. His experience with the CWR video was quite different from others. For example, some students shared that they enjoyed watching the video but found it agonizing when they had to trace or extract particular information or ideas from the video. Ben remarked that he skimmed through the video, searched for information directly related to the question, and proudly announced that he took only four minutes to finish one question.

Ben found the SRL guiding questions helpful for reflecting on what he had learned in addition to what he could do to apply the knowledge.

P40: LKM
LKM shared that his father helps him considerably with his work. He was the only student who mentioned the importance of parental assistance in student’s work. LKM Googled for tests with the intention of questioning his understanding. He recommended YouTube for some educational videos in introducing learners to new topics.

LKM concluded that the CWR could help students to realize their strengths. To him, the SRL reflection question could help with identifying one’s mistakes, thus, the question could be useful for students to realize their own strength and/or weakness.

P41: SY

During the discussion, SY provided few ideas on his learning experience; his responses were usually short without supporting examples. He actively supported one of the participants and disagreed with another when there were disagreements among the participants.

P42: Dave

Dave joined the group on time but said that he had to leave early because of co-curricular activities. Dave spoke little, and was seated at a distance from his peers. Although the facilitator invited him to move closer with the rest, he politely rejected and stressed that he was comfortable with where he was seated. He considered online websites such as Wikipedia to be helpful for learning. In addition, he engaged in repeated practices by using assessment books, worksheets, or text-books to help with learning.

P43: Matt

Matt arrived late for the interview. He appreciated the use of the CWR in Social Studies because the computer helped others to read his work effortlessly, he remarked that he has poor
handwriting. He found the SRL guiding questions conducive for his learning because they tested his reading comprehension. Further, he linked the self-reflection question similar to writing a note to himself so that he could refer to the notes only without the need to go through the whole worksheet for information.

**P44: Niko**

Niko considered the SRL guiding questions to be useful because they assisted students to conclude what they had learnt and progress to the next source analysis with better understanding. To prepare for Social Studies, Niko used a small thick notebook to write, paraphrase, and highlight all important points and evidence. Before an examination, he referred to the thick notebook and wrote down key points using flashcard for the purpose of memorization. He argued that one should memorize key words in order to assure good grades.

Finally, these brief student profiles provide a range of rich perspectives about the CWR, learning preferences, and SRL scaffolding prompts. These various viewpoints further indicate participants’ attitudes, line of thinking, and judgment about learning social studies. Thus, this dataset can be utilized to generate patterns of learning approaches engaged by students with different performance outcomes.

### 3.3. Subjectivity of the Researcher

In qualitative research, the researcher brought to the study biases and assumptions that permeated her experiences, worldviews, and philosophical stance (Merriam, 1998). Rubin (2012) has contended that the researcher should display the biases that may present themselves during the study. As the researcher and the instrument of data collection and analysis throughout this study (Creswell, 2007; Merriam, 1998), I would like to make some of my biases explicit. For the
past few years, this researcher had been fortunate to participate in several research projects on
various subjects with primary and secondary students from different schools in Singapore. As a
result, past research experiences, knowledge, and biases may influence the current research in
some areas; for instance, in terms of how learning should take place in classrooms.

Specifically, this researcher made the assumption that, due to time constraints, most
teachers do not assist students in developing learning strategies that are efficacious for their
learning in general because teachers have to cover substantial instructional content. Moreover,
the learning of self-regulated learning would be viewed as inessential possibly by both teachers
and students due to the pressing need to cover the syllabus as presented and to prepare for
examinations. Based on the above, technology integration is an opportunity to scaffold students’
cognitive processes and ways to learn because self-regulated learning strategies can be an
effective approach to engage students in becoming more active in their learning processes.

From the past research which I participated as a Research Associate, two significant
projects influenced my perceptions on learning issues in relation to ICT and metacognitive
scaffolding. The first project utilized a virtual environment to assist secondary science students
to learn about the causes and impacts of diseases in Singapore history during the 18th and 19th
centuries. Through the multi-users-virtual environment, students participated as selected
characters based on the earlier historical periods of Singapore. The content of the research was
created for ten lessons in which students went through different phases of the investigation
involving hypothesis making, data collection and data analysis.

During the implementation, the researcher observed that most students were actively
engaged in the simulated world in finding out the cause of illnesses affecting residents from
different parts of Singapore. A student guide book was developed for navigation purposes and
aimed to keep students on the right track for task completion. The created ICT program was essentially student-centered rather than teacher-centered; the teachers were the facilitators in guiding their students who self-directed their own learning. With the completion of the implementation, students presented their findings in groups. Based on their class presentations, this researcher found that most students did remarkably well. As a result, the researcher learned from this rich and immersive ICT experience that technology can assist and guide young learners to become active participants of their own learning.

The second project aimed to assist secondary students in the development of metacognitive strategies through an informal context, namely their co-curricular activities (CCA). On a weekly basis, the researcher worked with a group of young national bowlers to inculcate metacognitive awareness in their regular practices. The dialogic nature of the research was conducted frequently over training sessions through one-to-one interviews or focus group interviews. Particularly, the research team worked closely with one of the key participants and the researcher kept a detailed record of his progression. Through in-depth observations and interviews, the researcher noted that the young learner progressively became more aware of the calibration of his performance, and the way in which he managed erratic performance through metacognitive control such as reminding himself to avoid repeating the same mistakes. The above research highlighted the importance of becoming more aware of one’s learning by identifying ways that could be helpful for the advancement in understanding not only the theory but also the application as well.

To this researcher, the two research projects illuminated two critical aspects of learning: first, the potential of technology integration and the way in which it can transform a teacher-centered classroom to a student-centered one and enable students to become self-directed
learners. Second, the application of social scaffolding can increase the levels of students’ awareness in one’s learning and subsequently help them become strategic learners by actively monitoring the different aspects of learning, such as motivation and behavior. These invaluable research experiences are the drive for the current research. However, I also realize that I have a charitable view of the efficacy of technology to enhance students’ learning experiences and support their learning processes. Nevertheless, I am hopeful that the students from this research study could benefit from their experiences in using the CWR with its embedded SRL prompts; gain from various learning feedback during the focus group interviews; and apply the SRL learning strategies in various learning contexts.

3.4. Data Collection

**Focus group interview.** The focus group interviews were the main instrument used in the data collection. The semi-structured interview questions (Appendix C) were reviewed by members who attended the researcher’s confirmation of candidature in year 2014; and the supervisor in May 2015 before conducting the actual interviews. Merriam (2009) points out that semi-structured interviews are effective because participants might freely express their thoughts, as a result, “fresh insights and new information can emerge” (p. 91). Interviews with open-ended questions enables the researcher to probe participants’ responses; delve deeper into their thinking and feeling about the phenomenon; and gain entry into their perspectives in a broader worldview (Patton, 1990).

Importantly, the open-ended interview questions allowed the researcher to follow with additional questions or prompt for a further response from the participants who provided simply yes or no answers. Concurrently, it provided participants the opportunities to expound their knowledge or lack of knowledge in learning issues (Fraenkel et al., 2012) in relation to the
CWR, the SRL embedded lenses, and SRL learning strategies. The focus group interviews were conducted as part of the evolving dialogues between the researcher and participants in which the dialogic nature of the conversational processes created a supportive, encouraging, and non-threatening environment for participants to openly share and discuss their experiences, insights, or fresh and unexpected ideas.

The focus group interviews were conducted outside of class time and at the convenience of the participants. The data collection started in May 2015 and concluded by August 2016. There were two phases, first phase involved secondary four participants from Winter Land and Maya secondary schools. The first data collection date for the first school was in May 2015; followed by the second school in June 2015. The second phase consisted of secondary three participants from Bright Hill and Aston. Data collection for Bright Hill was in July 2016; followed by Aston in August 2016.

Before the start of each interview, the researcher provided a short briefing about the purpose of the interview to students. The lengths of these interviews ranged from forty-five minutes to an hour and a half. All sessions were audio recorded with participants’ permission and sound files were transcribed by the researcher. The focus group interviews were tape-recorded because tape recording provides an “unimpeachable data source; it ensures completeness of data; can be reviewed as often as needed to develop a full understanding [of a phenomenon]; and provide reliability checks” (Lincoln & Guba, 1985, pp. 271-272).

Following is a summary of the numbers of participants in different groups. Note that the first class of participants in Bright Hill secondary school had seven in one group and three in another because the teacher gave them the option to pick the best available time slot, as a result, more participants selected to be in the first group.
1. Winter Land, students were interviewed in groups of four and three.

2. Maya, students in a group of four were interviewed.

3. Bright Hill, the first class of students were interviewed in groups of seven and three. Whereas, the second class of students were in groups of five and six.

4. Aston, students were interviewed in groups of six and six.

Prior to data collection, the researcher coordinated with teachers from different schools for developing the CWR activities for their students. The meetings consisted of: narrowing down the appropriate topics to be developed; and selecting related sources for evaluation based on suggested pedagogical approach. Two social studies topics were selected: Poverty and globalization.

First, the poverty activity began with an online text introducing students to the challenges faced by the low-income families, government, and independent welfare organizations on how to tackle these issues. On the CWR screen, the first text source with the title: *Breaking the poverty cycle in Singapore*, links students to the next page where related questions are presented to be answered.

The second source, a video link: *Working poor* provides a case example of a family with four children; including the way how they struggled to live with a thousand dollar of household income each month. Similarly, students are expected to work on this source by providing their answers.

The poverty activity ends with the third source, a video link: *About Skillsfuture*. This link points out the various possibilities offered to low-income families to seek help and support from both private and public funding. See the following for an illustration of the students’ activity:
Second, the globalization activity commenced with an overview of an international perspective on this issue. The first source was presented with showing the positive aspects of globalization within Singapore’s context. The second source displayed its negative aspects. The purpose of having these contrasting views was to engage students to question and think further about both the positive and negative aspects of globalization.

With the above sources, the self-regulated learning lenses were embedded. The aim was to engage students to think about the questions before formulating the answers. Following is an example of the reflection lens embedded in the poverty activity.
The three self-regulated learning lenses, planning, monitoring, and self-reflection were previously discussed in chapter two under the Critical Web Reader (CWR). A short description of the lenses follows: First, the planning lens prompts students to pay attention to details such as what are the main ideas in this source. Second, the monitoring lens encourages them to think further by employing self-questioning skills such as to think about different perspectives: those included and those omitted. Third, the self-reflection lens persuades them to reflect by writing a short paragraph about the poverty issue. In essence, the planning lens assists students to think ahead before reading a source. The monitoring prompt helps to check the learning process by engaging in a self-questioning strategy. Finally, the self-reflection prompt scaffolds learning by helping students reflect on and connect key ideas from different sources.

The teachers from upper secondary four integrated the CWR scaffolded globalization activity in classroom learning while the secondary three teachers implemented the topic of poverty. The lengths of implementation varied according to the teachers’ schedule. However, they shared one commonality: to complete the CWR activities in class. As a result, some
teachers spent two lessons whereas others utilized more than two lessons for completing the activities.

Notably, the activity-related meetings between the researcher and teachers were extremely essential for the researcher to be introduced into the various schools’ settings and to establish trust with different teachers. Helping the teachers with issues on activities development, implementation processes, and providing in-class assistance were crucial parts of building and fostering strong research relationships with the community of educational practitioners. It also ensured the CWR activities and lenses were aligned with the teachers’ learning goals for students. During data collection, the teachers and HODs provided immeasurable efforts in facilitating the process.

After the completion of focus group interviews, the researcher transcribed each interview. Merriam (2009) recommends that researchers transcribe their own interviews in order to become more intimate with the data. Also transcribing the interview allowed the researcher to begin the analytical process as the data were transcribed. Through transcribing, the researcher developed better understanding of participants responses in areas of connected and similar ideas to contrasted viewpoints, which subsequently aided in the process of identifying patterns within the data (Merriam, 2009).

**Documentation: CWR students’ online responses.** With the CWR platform, teachers can easily login from any computer to view their students’ responses. On the page to view students’ work, the teacher could immediately check the status of the students’ completion rates. All students’ names are displaced on the screen along with their progression status indicated by either complete or incomplete activity. The teacher could either monitor the students under
incomplete activity to find out if help is required or at the same time direct students under complete activity to advance to another level of work.

Using the same page, the researcher viewed the online responses of participants who attended the focus group interviews. For instance, during the focus group interviews, some participants claimed that they had limited interest in the topic of poverty. In contrast, other participants shared their interest in learning the topic. To check for consistency, the researcher used the activity completion page and found that the former did not complete the activity or presented a few words as answers. Whereas, the latter provided long paragraphs of answers indicating clear understanding of the task requirements.

This form of online documentation provided data which enables the researcher to obtain and access evidence of participants’ engagements. Students’ online responses indicated different levels of thoughtfulness, attention, and comprehension given to the activity during learning in the CWR. Similarly, the participants who stated disapproval of the self-reflection question did not provide an answer or had limited responses whereas participants who approved of it expressed their views by annotating insights of what they had learned from the CWR activity. In essence, online documentation captured valuable contextual information that the focus group interviews may have missed.

**Trustworthiness.** In this case study, the researcher used triangulation of data sources obtained from students’ focus group interviews and the online responses to demonstrate trustworthiness. Yin (2003) refers to the use of multiple sources of evidence as “converging lines of inquiry” (p.98); other qualitative researchers make reference to it as triangulation (Lincoln & Guba, 1985; Patton, 1987). Seale (1999) and Johnson (1997) state that if the validity or
trustworthiness of data sources can be maximized or tested, then the more credible and
defensible the result will be.

Lincoln and Guba (1985) remark that validity and reliability in qualitative research are
described in quantitative terms. Similarly, Creswell (2007) prefers an alternative approach to
symbolize the notions of validity and reliability as qualitative research designs are not generally
associated with issues of reliability, validity, or generalizability. Furthermore, other researchers
such as Fraenkel et al. (2012); Merriam (1998), and Miles and Huberman (1994) conjecture that
credibility, authenticity, transferability, dependability, and confirmability may be more
applicable for qualitative research designs.

To build trustworthiness, Lincoln and Guba (1985) recommend field journals, on-site
team interactions, triangulation, gathering referential materials, debriefing, and audit trail.
Triangulation has shown to be “an important methodological issue in naturalistic and qualitative
approaches to evaluation [in order to] control bias and establishing valid propositions because
traditional scientific techniques are incompatible with this alternate epistemology” (Mathison,
1988, p.13). In the current study, the researcher used two approaches for triangulation purpose:
(1) data obtained from focus group interviews; and (2) students’ online responses as
documentation of written and textual materials.

The researcher triangulated the two different data sources through collection of multiple
perspectives from diverse groups of students concerning the experience they gained from the
implementation of CWR and the application of self-regulated learning strategies. To assure
trustworthy data, the students’ online responses were used to triangulate with the focus group
interview data with the aim of adding richness, depth of understanding, and thoroughness
(Lodico, Spaulding, & Voegtle, 2010) to this study. Notably, the application of triangulation
was imperative in increasing rigor in this qualitative study as Yin (2009) states that the use of multiple sources of data assisted in triangulation to ensure comprehensive results that accurately depict the participants’ input.

3.5. Data Analysis

The constant comparative analysis method (CCA) was used to analyze the focus group interview data by grouping into recurring categories and themes to answer the research questions. The foci of this qualitative case study aimed to understand secondary three and four students’ perspectives on the use of technology and SRL learning strategies. The qualitative focus group interview data gathered from forty-four students from four schools formed the analysis in this research. This analysis aligned with Boeije’s (2002) approach in using CCA as a method to analyze and compare interviews from different schools and groups. Similar to Fram’s research (2013), this researcher used CCA to answer the research questions in this study.

The CCA method is “a set of procedures and techniques for gathering and analyzing data” (Strauss and Corbin, 1998, p3); it is the process of generating and comparing categories, figuring how they relate to each other (Glaser, 1978). Following Creswell’s (2003) and Yin’s (2009) step-by-step methods regarding case study, Palmer (as cited in Fram, 2013) points out that CCA:

From a review of the data, the researcher formulated codes used as tags to identify concepts, themes, and meaningful patterns that emerged within each individual case. The researcher began with a code category encompassing the research purpose. This was then divided in to categories to represent the research questions. The researcher used different colors corresponding to the categories to mark text in the interview transcripts, survey questions, and
artifact documentation to identify categories and emerging themes. (Palmer, 2010, p.63).

After carefully reading the focus group interview transcripts several times for clarity and better understanding, the researcher highlighted and coded students' responses on a line-by-line basis either through words or sentences that described their learning (the open coding process) in order to capture main ideas for subsequent development of categories. While going through the open coding process, the researcher asked questions such as: “What is this participant saying?” “What s/he is trying to convey?” and “What is being referred to?” (Strauss & Corbin, 1990).

After confirming the key ideas in a student’s response, the researcher then assigned descriptive codes that reflected factual information embedded within the speech segments (Creswell, 2007). The researcher searched for key ideas originated from the participants’ speeches related to their personal experiences (Bernard, 2000; Bogdan & Biklen, 1982).

In this initial step of data analysis, the researcher analyzed the data by identifying appropriate codes to label new concepts based on distinct ideas. Merriam (2009) suggests that the researcher takes notes about any data “…that strike you as interesting, potentially relevant, or important to your study” (p.178). Janesick (2011) further adds that when developing codes, the researchers examine data and “looking for what does not make sense in a study, what does not quite fit, and what exposes points of conflict often yields amazing information and insight” (p.187).

Moreover, the researcher wrote short notes or “memos” in a short sentence or sentences to describe the concept being shared by the participants. Glaser (1978) exhorts the researcher to note and store theoretical memos “as they strike the analyst while coding” (p. 83). Glaser (1978) offers further guidelines for preparing effective memos, for instance, when a significant number of memos on different codes appear similar, compare the codes for any differences that may have
been missed. If the codes still seem the same, collapse the codes into one code. In a long interview transcript, it is common to have a few pages of codes. The researcher used “memos” as an effective way to analyze the codes for similarities and differences, which helped to group the various codes into categories based on their common properties. Importantly, to note and store “memos” throughout the data analysis enabled the researcher to recognize patterns of thoughts among the participants; accentuate unexpected and surprising comments; and establish connections between ideas. Additionally, to assist this differentiation process, the researcher used multi-colors to highlight and write in the various parts of the data in order to identify important information from pages of coded data.

In this study, there were four schools, each school was coded individually before comparing them for similarities or differences in categories. For instance, after identifying and creating the categories in the first school and second school, the researcher then compared the data from these two focus group interviews. After the comparative processes, similar categories were then grouped together based on their common properties. The researcher used the common categories to make sense of participants’ patterns of thoughts, insights, and motivational issues related to their learning.

After rounds of repeatedly reading and coding, the researcher further examined for patterns within the data of each participant, and across all participants (the axial coding process) to establish relationships of all categories. Axial coding was conducted to identify major categories by thinking further about the relationships among the categories. In the axial coding stage, Strauss and Corbin (1998) note that the researcher should ask “questions about the conditions, actions/interactions, and consequences of categories, thus making links between the ideas being conceptualized from the data” (Mills, Bonner, & Francis, 2006, p.5). In the process
of axial coding, the researcher examined the data more closely by thinking further about the categories, relationships among different and major categories, and meaningful themes that emerged within these relationships of open and axially coded data (Corbin & Strauss, 1990).

In this study, the researcher conducted both inductive and deductive analysis of data. The coding began with an inductive analysis of the data (Patton, 2002). Analytic “memos” were essential in these first steps (Glaser, 1978). Inductive analysis was employed as the researcher remained open to additional, previously unidentified or unexpected categories in the data. The development of categories also drew deductively from coding frameworks used by Green & Azevedo (2009) and Zimmerman (1989) to identify concepts for the purpose of developing further interpretations of the analysis (Hu & Driscoll, 2013).

Finally, after the systematic back-and-forth inductive process of CCA and existing coding framework used during the deductive process, seven themes emerged from a list of major categories. The seven emerging themes from the categories that the researcher considered to be relevant to answer the research questions were selected based on ideas, concepts, motivation, behaviors, and incidents that were mentioned frequently (Johnson & Christensen, 2012). See the below table (Table 3-3) for an example of development of the seven themes. Briefly, under each themes, different categories and sub-categories are presented with examples directly from the transcripts.
### Table 3-3 Development of Themes (Partial examples from transcript)

<table>
<thead>
<tr>
<th>Themes</th>
<th>Category and sub-category for the development of the particular theme</th>
<th>Codes</th>
<th>Transcript Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Critical Web Reader (CWR) provides certain support and constraints for learning</td>
<td>1. The support and constraints of using CWR</td>
<td>1.1. <strong>Support</strong>: CWR helps content elaboration. Text-based lacks content development.</td>
<td>1.1. Most of the time, I find that when I refer to a source teacher has given us, I find that my answers are <strong>very short, and lack content</strong>. From the CWR, I find that I can find out a lot of evidence, and write a lot of content, based on the sub-questions you have. (Norman, sec 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2. Indicating the importance of having longer text for better understanding and writing.</td>
<td>1.2. Yeah, I don’t agree too much information, I think the more information you have, you have more to talk about. As compared to when you only have a few sentences right, you don’t know what to differ…basically you don’t know what to write about. (Hillary, sec 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.3. Comparing textbook and CWR. Textbook presents more positive views. CWR presents negative views as well.</td>
<td>1.3. …<em>in the text book</em>, maybe they did say, talk more about the positive ones, they always put across the more positive ones than negative ones, so, through the CWR right, I actually learned about the negative impacts, the cartoon actually did interest me. (CT, sec 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.4. <strong>Constraints</strong>: Disinterested students engaging in copy and paste behavior.</td>
<td>1.4. …I also think that using the computer right is quite bad because the students who aren’t listening right, if there are source on the web, they can just go to different browser and search for answers and copy and paste…that is the worst part…(Niko, sec 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5. Leaving the classroom, walking all the way to the computer room, taking up learning time.</td>
<td>1.5. <strong>A bit inconvenient, because you have to go to the computer room.</strong> (TH, sec 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.6. Preferring ‘O’ levels format, paper-based.</td>
<td>1.6. …I think it is best that we stick to written paper so that we eventually going to take ‘O’ levels on papers anyway so it is better to stick to paper. (Fai, sec 3)</td>
</tr>
</tbody>
</table>
2. Learners’ experience with SRL lenses

2.1. **Experience with SRL lenses**

SRL guiding questions cultivate a habit of self-questioning.

2.1. For me, it is quite useful, because in class right, teacher always ask us what are the main points, message. Our teacher also engages us in this kind of activity to help us understand an article or source more, **so I think it is a good practice, in the long term, if we can cultivate the habit of always asking ourselves,** I think it would be very helpful for us. (Cindi, sec 3)

2.2. SRL sub-question bridging his learning without going off track.

2.2. Basically, the sub-question really is going to help me along the way when it comes to learning these sources. **We see these questions as like stepping stones of what we are going to learn, so won’t go off track**…yeah. (Norman, sec 3)

2.3. Reflecting on what has been learned.

2.3. …I think they are helpful because they can help us reflect what we have learned, also, how we can apply. (Ben, sec 3)

3. Students’ conceptions shape their learning of social studies

Categories:

1. **Interest**
   - Sharing interest in SS.
   - Sharing disinterest in SS.

2. **Lack of interest**
   - Showing no interest in SS.
   - Finding it unnecessary to understand SS.

1.1. **Interest**

Sharing interest in SS.

1.1. …I happen to really like history and S.S., so I actually have a very clear goal…(Jennifer, sec 4)

1.2. …so I have interest in S.S., basically, my combined human, the other pure human subjects are arts, I love all three subjects…(Hillary, sec 4)

2.1. **Lack of interest**

Sharing disinterest in SS.

2.1. Yes. **I find SS very boring**. Most of the students in class are sleeping, the teacher talks, but everyone else is sleeping. (KSH, sec 3)

2.2. For SS, I don’t study as well. Most of them are like common sense, also, it depends on my mood, if my mood says that don’t study, then, I don’t. (Steven, sec 3)

2.3. **What! For SS what is there to understand?** (Leo, sec 3)
3. Learners’ preferences in learning:

3.1. Regular practicing and revising.

3.2. Going through the chapters repeatedly.

3.3. More practicing to know your weakness.

4. Learners’ perspective of learning SS;

4.1. Learning perspectives

Working smart referring to knowing your future goals.

Working hard referring to devoting time to study the subject related to your goals.

4.2. Studying hard using the textbook.

4.3. Difficult because memorization and understanding are key in SS.

3. 1. Definitely more practice, and more revising the same thing, going over again. Making sure you don’t make the same mistakes again. (CT, sec 4)

3.2. I just read the notes, write it down, keep going through the chapters. Go through the notes that teachers gave. (Ryan, RT, sec 3)

3.3. …we should practice more, because when you practice, you’ll know what you are lacking in skills…(Calyn, sec 4).

4.1. Smart work is like knowing what you want, knowing what you need to get done just going through the requirements…

If I want to do something that is related to social studies, I probably look more into SS, and work hard on it. (Fai, sec 3)

4.2 Hardworking, stick to textbook, like a nerd. (Jai, sec 3)

4.3. SS is a tough subject, it requires memorization and also about understanding. (Matt, sec 3)
5. Career aspiration

5.1. **Career aspiration**
Majoring in business due to parental influence.

5.2 Being influenced by sibling.

5.3. Showing interest in the business sector.

5.1. I want **to major in business**, because my parents work involved a lot of money, like stock and forex. **I find it very interesting** (KSH, sec 3)

5.2. …I think I would rather **be like a producer like my sister**. (Jai, sec 3)

5.3. I want to **be an auditor**. (Justin, sec 3)

4. Students’ key learning approaches

Categories:

1. Help seeking from teachers;

1.1. **Help seeking**
Checking with her teacher.

1.2. Help seeking: teachers from tuition centre and school.

1.3. Help seeking from teacher.

1.1. Definitely, **I check with my teacher**, because I need another personal opinion, so, I can’t rely on what I have went through… (Myra, sec 3)

1.2. Get helps from **tuition teacher, ask teachers**, and friends. (YT, sec 3)

1.3. …if I don’t understand, I’ll **consult teacher…I’ll consult Mr Tan**… (YSL, Sec 4)

2. Independent learners;

2.1. **Independent learners**
Learning by himself without seeking helps from teacher or friend.

2.2. Without asking the teacher to avoid further confusion.

2.1. Sometime if I seek help, I tend to forget it… at the end I don’t even understand, so, I just **try to understand it myself better**. (Caleb, sec 3)

2.2. **I really don’t ask anyone**, If I ask Mr M. (his teacher), he’ll give me a long explanation, which I really don’t understand. (Jai, sec 3)
3. Memorization;

Memorizing content without strategy.

3. Memorization:

3.1. Memorization

Memorizing content without strategy.

3.2. Using memorization as a strategy.

3.2. …that’s why I study last minute, so, I can keep the memory, so, next day, after doing it (referring to memorization), I just forget. (JT, sec 4)

3.3. Using rewriting to help with memorization.

3.3. I rewrite the whole thing, the essay, I rewrite the whole thing, and SBQ also, so that I’ll try to remember. (QQ, sec 4)

4. Prior knowledge

4.1. Prior knowledge

Engaging prior knowledge.

4.1. Since I read newspapers at home…under the opinion section…I like to read that part, so, I try to make sense of…like how S’pore was prospering…I brought some of my knowledge of what I learnt to the CWR, it helped a bit. (Hillary, sec 4)

5. SRL: Planning increases students’ engagements in learning

Categories:

1. Planning

1.1. Planning

Planning since the beginning of the year to be one of the top students in SS.

1.2. Planning for task accomplishment.

1.1. …because last year, I only got top 15…for the start of the year, I’m trying to change my techniques to learn better. Because this is my final year, I want to do the best…(Kovan, sec 4)

1.2. First thing is to plan out what is the objective, what am I supposed to do, then, plan out what resources I have to accomplish the task so that I can proceed it to finishing…(Niko, sec 3)
2. Minimal planning

2.1. **Minimal planning.**

No, is not that complicated. For SS, a task in class, **not much of planning, just do it on the spot**, there is this format that we follow, for i.e., VAMAO.

(Rimi, sec 3)

2.2. Minimal planning.

If English compo yes (following Rimi’s thought, CK felt that **no planning is required for SS** but for English compo is different). For i.e., the storyline and main characteristics. (CK, sec 3)

6. SRL: Monitoring increases students’ participations in active learning

Categories:

1. Monitoring

1.1. **Monitoring** his knowledge using questions from internet.

1.2. Using another form of learning aid.

1.3. Engaging in self-questioning.

2. Minimal monitoring

Using templates as guide for his learning. Speculating that by practicing the provided examples would help with his ‘O’ levels.

1.1. I **gave myself random questions** regarding the topics then try to answer…from internet…Singapore secondary three history questions. (Jai, sec 3)

1.2. Every time when it comes to studying, I **use flashcard, write them down** (Niko, sec 3)

1.3. I’ll question myself if my teacher read my source, will she ask some more from this, is it enough…(Jennifer, sec 4)

2.1. We know what we have to learn, learn what the syllabus says we have to learn. We have one and a half year, before enter ‘O’ levels, we pretty much learning everything we have to learn for ‘O’ levels starting from Sec three, so, we don’t have a lot of time, so we know that we want to learn this, and we have to learn this in order to answer the ‘O’ levels. **So, we have the templates, we were given a few examples, we learn as much as the examples, we possibly think that will come out in ‘O’ levels. So, it prepares us, we don’t really need extra or require.** [Extra refers to side activities in textbook.] (Fai, sec 3)
7. SRL: Self-reflection decreases students’ participation in learning

Categories:

1.1. Self-reflection

1.1.1. Understanding of reflection questions.

1.1. Self-reflection: They help us think about the work we done, what can we do to apply them, also, depending on the kind of reflection questions, it can also benefit our work, maybe help with our ways of thinking, then, maybe we could change what we do. (Ben, sec 3)

1.2. Understanding of reflection questions.

2.1. Minimal self-reflection

2.1.1. Minimal self-reflection

Questioning the effectiveness of self-reflection. Suggesting that sharing is more useful for building ideas.

2.1.2. Seeing no value in doing reflection, finding it repetitive, and doing the same thing.

2.1. Minimal self-reflection: I don’t think so, probably sharing would be more useful. I think when we shared as a class it can be more effective. When I see my classmates as well, reflections are kind of half-hearted, I don’t think you would get the full benefits of it. For i.e., when I said something right, something might be triggered by Fai, and then he would say something more, and not just what he wanted to say, so sharing bounces off ideas, and trigger what the person wants to say. (Myra, sec 3)

2.2. For some subjects, you have to do it (referring to reflection) after every test, for some, you have to reflect every year on your work or their teaching…every year do the same. (YSL, sec 4)
3.6. Textual Analysis

Moreover, the researcher conducted document analysis of the CWR students’ online responses for the purpose of establishing similar patterns among participants’ interview sharings and their written responses. Document analysis included examining the CWR online assignments for the purpose of determining and writing about the documents’ significance (Miles & Huberman, 1994) in relation to the participants’ reported use of SRL learning strategies.

Participants’ sharing from focus group interviews were compared against their written responses for consistencies. For instance, if students reported that they engaged in self-reflection, the researcher looked at the online responses to provide an understanding and verify how the latter view supported the former. Subsequently, differences between participants who reported positive or negative comments of self-reflection were compared by triangulating their online response data in order to gain further understanding of the ways in which participants approached their learning.

3.7. Ethical Concerns

Before the commencement of this study, the researcher obtained research approval from NTU Institutional Board Requirement (IRB) to conduct this study. To prepare for IRB requirements, detailed descriptions of data collection methods, student assent and parent consent forms, and focus group interview questions were attached as parts of the application. After securing the IRB approval, and with the assistance of the four schools’ teachers, the researcher distributed both the student assent and parent consent forms to the students of the participative classes to request for parental consents.

The purpose of informed consent was to provide the participants and their parents with clear information concerning the research. Thus, the language used in the consent forms was
easy for the students to read and comprehend. In addition, the researcher’s contact information was provided in order to encourage both parents and students for further inquiries or clarification about the purpose of the research or their participation. Furthermore, both of the forms clearly stated that participation was voluntary, without remuneration, and that the participants were free to leave at any point when they felt uncomfortable.

As a result, this study involved only participants who willingly agreed to partake in the interviewing process. To protect the participants, their identities were kept anonymous and each name was encoded with a pseudonymous to make identification feasible for the researcher during data analysis. Likewise, the name of the four secondary schools were also anonymous for the same purpose of protecting the identities of participants and the educational institutions.

All the forms and recorded sound files are safely kept only for this researcher to conduct the analysis. Importantly, the researcher was solely responsible for gathering, analyzing, and interpreting the collected data from focus group interviews and students’ online responses. Therefore, confidentiality for the privacy of the participants was maintained as the data were available only to the researcher.

3.8. Summary

This research aimed to explore the effectiveness of CWR in assisting students to become more aware of their learning in the Social Studies context. To capture the complexity and assist in an exploratory understanding of the research foci, the qualitative case study methodology was used to collect upper secondary students’ perceptions on the CWR integration and applications of self-regulated learning strategies. The purposeful sampling method was used to select forty-four participants based on mixed abilities, diversity in cultural groups, gender, and willingness to
share their learning experiences. The four research sites were upper secondary schools with Social Studies teachers who had previous teaching experiences with the CWR implementations.

Prior to the commencement of the research, NTU IRB approval had been obtained to conduct this research. The student assessment form and parent consent form were given to students and their parents. The semi-structured focus group interview questions were the main instrument used for data collection. The focus group interviews with open-ended questions were aligned with the two research questions and enabled the researcher to: probe participants’ responses; delve deeper into their thinking and feeling about the educational phenomenon; and gain entry into their perspectives of a broader worldview (Patten, 1990).

For triangulation purposes, this case study used focus group interviews with CWR online documentation of students’ responses for comparison of similarities and differences. Yin (2009) remarks that the use of multiple sources of data assisted in triangulation to ensure comprehensive results that accurately depict the participants’ input.

To analyze the collected interview data, the constant comparative analysis method (CCA) was used by coding, grouping recurring categories, and identifying emergent themes to answer the research questions. This study used the CCA method to analyze and compare interviews from four different schools and various groups of upper secondary four and three students. To capture main ideas for development of categories, the researcher engaged in line-by-line open coding process; followed by axial coding to examine the relationships among different categories before identifying meaningful themes that emerged as a result of constant engagements in CCA.

Moreover, after the inductive analysis, the researcher further employed deductive analysis to identify concepts for the purpose of developing further interpretation of this data analysis. In short, the following chapter, four, presents the research findings emerged from the
participants’ perceptions, ideas, and incidents that they frequently mentioned and therefore important for analysis to be conducted for the purpose of addressing the two research questions of this study.
This chapter presents the seven findings to answer the study’s research questions. Findings 1 to 3 address research question one (RQ1), whereas findings 4 to 7 address research question two (RQ2). See the following table (Table 4-1) for the two research questions and a summary of the seven findings with their respective categories.

### Table 4-1 Summary of seven findings and categories with different subcategories

<table>
<thead>
<tr>
<th>Research Questions (RQs)</th>
<th>Findings</th>
<th>Categories</th>
</tr>
</thead>
</table>
| **RQ1:** To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning? | **Finding 1:** CWR provides certain support and constraints for learning | **Two categories:**
| **RQ1a** (sub-research question): How does the CWR support and constraint students’ learning? | **Finding 2:** SRL prompts assisted students’ learning of social studies | 1) Support (with subcategories) |
| **RQ1b:** In what ways did the SRL prompts facilitate students’ awareness of their learning? | **Finding 3:** Students’ conceptions of social studies affect their views on the usefulness of the CWR | 2) Constraints (with subcategories) |
| **RQ1c:** How did students’ attitudes and values about social studies impact the way they considered the CWR to be useful for their learning? | | 3) Identifying key information |
| | | 4) SRL lenses prompted students to think more about information in the source |
| | | 5) Career aspiration |
RQ2: What are the SRL strategies used by Secondary Social Studies students?

RQ2a: What are the different learning approaches used by students when learning Social Studies?

RQ2b: What are the planning strategies used by students to engage in the process of learning?

RQ2c: What are the monitoring strategies used by students to keep track of their learning?

RQ2d: What are the self-reflection strategies practiced by students?

Finding 4: Students’ key learning approaches

Finding 5: Planning increases students’ engagements in learning

Finding 6: Monitoring increases students’ participations in active learning

Finding 7: Self-reflection decreases students’ participation in learning

Finding 1 provides an understanding of participants’ perceptions of learning with the CWR. Finding 1 highlights support and constraints. The affordances of the CWR indicate that the disinterested participants were motivated by the online video sources to learn more about the topic. Other participants were drawn in by internet access because they could engage with a range of resources to facilitate their learning. In contrast, some participants pointed out constraints, such as limitations to annotating, drawing on, or highlighting the text. Other constraints were related to logistical and technical issues.
Finding 2 provides greater details on the ways CWR, specifically the SRL prompts assisted participants to become more aware of their learning. It further describes participants’ views on the effectiveness of embedded SRL prompts during their learning process. The majority of the participants remarked that the SRL prompts were helpful for identifying key information while reading informative sources. Some suggested that the SRL guiding questions helped to cultivate self-questioning, which can be efficacious for long term learning situated in different contexts.

Finding 3 elaborates on participants’ learning behaviors in relation to their motivation and cognition according to their interest or disinterest and their preferences and perceptions of learning in Social Studies. In chapter two, the various historical perspectives illustrate that for learning to occur, students must remain proactive and actively engage in their learning. These different theoretical paradigms further indicate that reciprocal factors such as personal, behavioral, and environmental factors are key in contributing to students’ efforts to self-regulate.

To gain further insight into these interdependent factors, finding 3 discusses students’ learning influenced by their personal processes such as motivation, cognition, and behavior in relation to Social Studies and the CWR. To understand how these different factors shaped the extent to which the CWR was effective in supporting participants to become more aware of their learning, finding 3 compares participants’ interest or disinterest in motivating or demotivating their learning.

Finding 4 further describes the reciprocal factors of cognition and behavior by illustrating the common learning approaches practiced by participants. Most of them mentioned help seeking mainly from their teachers. A few suggested engagement in independent learning and
activation of prior knowledge. However, all of them practice memorization because they believe that learning of the subject requires rote learning.

Findings 5-7 represent three phrases of SRL. Finding 5 elaborates on planning, finding 6 depicts monitoring, and finding 7 explains self-reflection. Specifically, finding 5 points out the different levels of planning strategies used by participants and concludes by identifying two major groups of participants, those who use planning and those who do minimal planning. In essence, some participants in the planning group engaged in goal setting while others had a plan of work to actively follow through during source analysis.

In comparison, the participants in the minimal planning group were unable to provide concrete examples of how planning could be conducted. Due to a lack of interest, some of them considered that planning is inessential. Although some of them suggested that they had a plan of work, they needed determination in order to follow it through.

Finding 6, indicates two groups, those who made effort at monitoring to keep track of their performance and those who used minimal monitoring. Some of the former group used monitoring skills such as self-questioning, writing notes, and searching for online resources. Others engaged in a combination of monitoring skills such as checking source features, employing different formulas, and seeking help from their teachers. These participants exemplified that monitoring efforts lead to active learning. In the latter group, participants indicated that they engaged less actively in their learning, thus the report on note-taking or self-questioning was lower; rather, these participants depended on teachers’ feedback and revised homework as a way to keep track of progress.
Finding 7 shows that only a few participants engaged in self-reflection while the majority of the participants were in the minimal self-reflection group. Some of the self-reflective participants shared their learning experience with the CWR embedded questions. Others reflected on their performance and followed up with necessary actions to improve further. The minimal self-reflection group can be divided into subgroups: those who were disinterested in self-reflection but supportive of the SRL lenses; and those who were disinterested in both self-reflection and the SRL lenses. In short, these participants concluded that they found self-reflection to be ineffective due to years of repetitively working with self-reflection activities in classes.

4.1. Finding 1: Critical Web Reader (CWR) provides certain support and constraints for learning

Support. Finding 1 consists of two categories with respective subcategories. The following sections describe the first category which is participants’ perceptions of learning support in the CWR. The table (Table 4-2A) indicates the various subcategories in relation to RQ1, followed by the second category, constraints.

<table>
<thead>
<tr>
<th>Research question One (RQ1):</th>
<th>Subcategories:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent is the CWR useful for Secondary Social Studies students to become</td>
<td>i) Effectiveness of online video to engage students</td>
</tr>
<tr>
<td></td>
<td>ii) Working with longer online sources provides students</td>
</tr>
</tbody>
</table>

5 Table 4-2A Finding 1: The first category and subcategories to answer RQ1
more aware of their learning? with more evidence for elaboration in their responses

iii) Convenience of typing over handwriting

iv) Internet access enables students to utilize online resources

v) Support students’ critical thinking about topics

Effectiveness of online video to engage students. The CWR as a multimedia instructional tool helps to attract students’ attention when viewing online sources. A few of the participants found the video source meaningful because it provided multiple perspectives from individuals, government, and organizations. Through the video source, participants learned about a real-life case example with supportive evidence from statistics, a monthly financial budget, and the role of government in alleviating the issue.

Rimi was fascinated by the video because it provided multi-perspectives of a social issue concerning poverty. He was intrigued to see a real-life case example of a family whose members had to live with a monthly tight budget in order to make ends meet. Rimi appreciated the mixture of information to support the illustrated case. For instance, statistics were used for the purpose of comparing different income levels. Furthermore, he was informed by how government and different organizations attempt to improve the issues of poverty within the country. Rimi shared that,
In class we won’t be so interested because they just give us what is poverty, but then in video, they show us examples, statistics, how much they are spending per month, [and this] really grabs my attentions. What the government is doing to help…

Rimi provided a clear example of the way how disinterested or unmotivated learners could become motivated to learn through online video sources. To assist these learners and to sustain their attention, the use of online video can be helpful especially if students take short notes or writing down key points to capture the overarching ideas, as shared by Rimi.

LKM concurred that within a relatively short time-frame more learning can be achieved due to various perspectives from online sources. He compared computer-based learning versus text-based by concluding that the latter takes more time because it requires reading, understanding, and making sense of a source, whereas online sources provide multiple views to facilitate better understanding of information at a faster pace. LKM strongly supported technology integration; he considered the affordance of the CWR by noting,

The video is the most interesting because it compiles everything. It is short and sweet. The one about the news telling us about poverty, how it works, this is exactly what we need. Let’s say teacher gives us a question, what are the ways of helping these people out, get out the poverty right, we can easily just refer to the video, think about what we hear, the more we hear, the more we can think about. When the news tells us how we can get out of poverty, it works; it is very simple too, short and sweet. You read a text, to fully explain the thing right; it takes a long time, a lot of work right, so before they [students] read, they fall asleep.
LKM demonstrated enhanced engagement in learning social studies by expressing greater enjoyment and interest in learning more about the issue of poverty through an online video.

Myra considered learning within the CWR context to be a stimulating experience; the viewing of the video was not a usual learning experience in her text-based classroom. She considered the multiple perspectives presented in the video to be crucial for understanding the topic of poverty because visuals helped her understand them. For these reasons, Myra considered the utilization of technology, in this case an online video source, to be an advantage. Myra noted that,

Interesting part, I guess, we can look at video, because in the classroom, the sources are usually on paper, but in CWR, you can visually see it. I feel that you can understand more when you can visually see something.

However, the recency of a video is crucial. To attract students’ attention, a more recent version is key. Animation is another aspect to draw their interest. Through an animated video, some concepts of life can easily be portrayed and animation simplifies otherwise complex or difficult topics such as poverty and hunger.

Initially, CK remarked that the poverty video was boring due to its content. Also, he thought the video was old (2009), and that an updated version would better grab students’ attentions since they were largely indifferent to the topic of poverty. CK stated,

I feel that the video is kind of boring, because, the topic is something that we are not that interested in, because this generation is not exactly interested in income, inequality, whatever, so, by nature, not so interested and the video is kind of old [2009]. Something
that is more current would grab our attention, the video is like old, [and the] topic not very interesting.

However, CK concluded by saying that “But the Skillsfuture video is interesting. They used animation, so [it is] interesting.” CK approved the last video, Skillsfuture, for its animated content and its up-to-date quality. Notably, for disinterested learners, a well selected video source could be a valuable option to draw their attention.

In short, to engage disinterested students to learn about a complex topic such as poverty, the use of online video source can be an important informative learning resource because it provides multiple perspectives within a short time frame in addition to audio-visual content.

**Working with longer online sources provides students with more evidence for elaboration in their responses.** In addition to the CWR’s multimodal affordances, some participants pointed out the benefits of working with longer online sources.

Some students noted that longer online sources provided the opportunity to elaborate cohesive responses to questions. In their view, text-based sources are often short, and they lacked content and detailed information. Their responses indicated acceptance of longer online source analysis and demonstrated interest to learn more about a topic. Dani commented: “In the source [referring to CWR], you gave a full-length article, a very long one... in the normal SS papers [referring to standard classes], the sources are short. But with the longer source, I can elaborate more.”

Hillary shared a similar view about working with longer sources by saying,
Yeah, I don’t agree [that it’s] too much information, I think the more information you have, you have more to talk about. As compared to when you only have a few sentences right, basically you don’t know what to write about.

Norman considered longer online sources to be helpful when developing substantial answers supported by a wider selection of evidence. Norman indicated,

Most of the time, I find that when I refer to a source teacher has given us, I find that my answers are very short, and lack content. From the CWR, I find that I can find out a lot of evidence, and write a lot of content, based on the sub-questions [referring to SRL guiding questions] you have.

Additionally, Norman indicated that longer sources generate richer answers, and that the SRL guiding questions benefitted his learning. He shared that: “Basically, the sub-question [referring to SRL guiding questions] really is going to help me along the way when it comes to learning these sources. We see these questions as like stepping stones of what we are going to learn, so won’t go off track…yeah.” As Norman indicated, the SRL prompts provided scaffolding that can be essential for monitoring his learning experience.

For CT, the length of the sources in the CWR were long as compared to most text-based sources that she had worked with in classes. However, when comparing online sources with her textbook, she remarked that the content in the latter is more positive than negative. Through the longer sources, she learned that negative impacts of an issue are important too. CT stated that,

In the text book, maybe they did say, talk more about the positive ones, they always put across the more positive ones than negative ones, so, through the CWR right, I actually
learned about the negative impacts, the cartoon [referring to one of the online sources] actually did interest me.

When addressing the poverty topic, textbooks might contain limited information. In contrast, online sources can offer more detailed and balanced viewpoints. As a result, an online learning environment can be beneficial for students to gain content knowledge in addition to standard classroom practice.

Nevertheless, in contrast to students who indicated preferences for longer sources, those who prefer shorter versions do so because they are accustomed to. In other words, since reading longer texts is not part of their regular in-class practice, they found it challenging to read longer sources.

**Convenience of typing over handwriting.** The following participants listed the benefits of the CWR due to the convenience of typing over handwriting. Some participants preferred typing because they are more likely to be typing when out of the classroom. Others foresee the connection of learning in an online context to future work place in which keyboarding most likely will remain as a key skill.

For example, Cindi indicated that she was thinking about learning in out of classroom contexts. She connected work place, higher education, and informal settings in which technology is commonly used as a communication tool. As a result, she viewed the CWR as a positive learning tool enabling and preparing her for the future. Cindi highlighted affordance of utilizing the CWR,
Personally, I find the typing part to be interesting, I think in future wherever you go, is typing, so, it is quite beneficial for us to be trained when young, to be able to type, I actually prefer typing over writing...

Likewise, some of the uninterested participants view typing as a more effective way of engaging with their work rather than handwriting because they communicate frequently with their peers through handphones by using text messages. Further, typing is the main operational function to search for online information whether this is done through home computers or handphones. Technology integration is part of their daily experiences and thus they feel that typing is more relevant to their day-to-day activities.

Mac valued typing over handwriting: “I find writing to be troublesome.” Dani agreed with Mac by saying: “Typing is better than writing, faster.” Similarly, Steven considers that the use of computers more efficient for everyone because typing is faster than hand-writing, and emailing homework is more convenient than handing it in. Also, Steven suggested classrooms could go paperless when he said, “Using computer, if you can type, why must [you] write? It is easier for everybody, you don’t have to hand in your work, just email. Convenient.”

**Internet access enables students to utilize online resources.** Participants further indicated that the CWR affords opportunity to internet access which is helpful for their work. With online search engines such as Google or YouTube, information is available at a faster pace and in various forms: as text, sound, or visuals.

For RT, one of the affordances of the CWR is to motivate less interested students since learning a topic through an online platform is a more authentic learning environment. RT considered that learning with a computer was an easier task because he could simultaneously
Google for information. He was more motivated using online sources than text-based sources because he could explore a topic online. With computer-based learning, he said everything is faster and smoother unlike text-based which is “a bit dry.” RT remarked that,

I feel like learning on the computer is a lot easier, because you can do research at the same time. When teacher gives paper [refers to text-based source], there is a lot of text, you don’t feel like reading or writing out anything. It feels a bit dry but, on the computer, everything is a lot faster and smoother.

Leo disliked social studies, and he made it clear at the beginning of the discussion. However, he found using the computer to learn social studies to be an engaging process. Leo stated frankly that he enjoyed the use of CWR due to internet accessibility during class times. Similarly, another participant, LKM, Googled for multiple choice questions on the poverty issue, and commented that online video sources can be helpful when introducing learners to new topics.

Compared to text-based sources, the CWR enabled participants to utilize a range of online information resources about a new topic and explore ways to gain understanding of the content. However, based on their typical classrooms learning experiences, computer-assisted instruction might be considered a novelty effect in which students find the CWR to be an initially engaging learning experience.

Support students’ critical thinking about topics. With the completion of the globalization activity, some participants acknowledged that the online sources helped them to think more critically about the topic and its impact. Prior to the activity, some of them believed that globalization was good for the world; they did not view it as a complicated and complex
issue requiring multiple perspectives in order to gain a holistic viewpoint of this topic. The CWR online sources provided ample ground for participants to experience multimedia resources such as YouTube videos and political cartoons. Through these rich and interactive online resources with diversified perspectives, participants remarked that their learning experience subsequently enhanced their thinking about the topic.

Prior to using CWR online sources, JT, YSL, and Jennifer Y held different conceptions of globalization. JT associated globalization with technology, saying that, “At first, I thought globalization is just technology, because teacher showed us like a Facebook thing.” When JT saw the online comic source, he asked himself: “Is it a serious comic or a fake version?” He did not think that the online source provided serious content for understanding globalization. After careful analysis of the source, he concluded that it provided important content depicting the impacts of globalization on less developed countries. Consequently, he considered the comic source to be his favorite “because a picture speaks a thousand words.”

Similarly, YSL commented that she used to think that globalization was about trading only. She found the globalization activity to be informative because it provided new perspectives on both positive and negative aspects of the topic. After the activity, she linked the struggles between multinational corporations and the developing nations in various parts of the world. YSL shared that, “I did not think it [globalization] would bring such a big negative impact around the world.”

Jennifer Y agreed with her peers that the CWR guided and scaffolded her understanding in terms of critically evaluating the source contents. She described the comic source as being “like a hidden message.”
The next sections begin with the second category under finding 1 which is participants’ perceptions of learning constraints within the CWR.

**Constraints.** In contrast to the above participants who shared positive views about learning with the CWR, the following participants disagreed with its effectiveness. See the table (Table 4-2B) for the subcategories.

6 Table 4-2B Finding 1: The second category and subcategories to answer RQ1

**Finding 1:** CWR provides certain support and constraints for learning

Second category: Constraints

<table>
<thead>
<tr>
<th>Research question One (RQ1):</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning?</td>
</tr>
</tbody>
</table>

**Subcategories:**

i) Lack of annotation features.

ii) Ease of copy and paste functions to answer questions reduced necessary effort to understand source content

iii) Logistical and technical issues made the use of the CWR inefficient in terms of class time.

The participants in this category preferred paper-based over online learning because they find it easier to highlight, underline, or refer back to a written sentence or paragraph in paper-based sources. With online sources, they are unable to write, circle, or draw out key points, claiming this made their learning more difficult. Moreover, these participants highlighted the issue regarding the copy and paste function because these online features led to reduced time and effort in understanding or making sense of a source content. Finally, other constraints involved
with technology implementation were the technical and logistical issues experienced by students in some classrooms and schools.

**Lack of annotation features.** Kovan, a high achiever and one of the very few self-driven participants regarded integration of the CWR as a limitation in supporting his cognitive processes when analysing sources because he preferred paper-based sources for their hands-on benefits. In contrast to disinterested participants who need to be motivated in learning social studies, Kovan indicates interest in learning social studies; he works hard to achieve his goal to be the top student in class. Kovan is driven by internal motivation to be a top performing student; he actively partakes in the process of goal setting and attainment.

Kovan found the video source somewhat confusing because he did not enjoy clicking the mouse for navigation purposes. Rather, he prefers to draw with a pencil, and circle the key points in sources. For instance, when working with a paper source, he first focuses on the characters’ facial emotions to determine whether they expressed fear or anger, followed by briefly writing down his thoughts while identifying different parts of the source. He found it challenging to do the same procedure with the online sources. Kovan does not like the internet. He stated,

> The text source, the video is a bit confusing. The text [paper-based] is really good, because you can highlight, and then refer back, but with video, you need to click here and there. For the comic, you need to analyse, umm…for me, you need to circle the subject, what is the subject about, the feeling of this subject, the thinking, and doing part of this subject.
Kovan repeatedly stressed his preference for actively engaging with paper-based sources. He insisted that,

For pictures, I circled the subjects, what they were doing, thinking. I would think if this subject is victim or culprit. For text right, it is quite easy…but on internet, I cannot circle, so, it is quite difficult for me. But if is not on internet, then, it is quite easy. I don’t like internet stuff.

Kovan highlights the ways technology and the use of online information sources can be affordance for some students, but viewed as a constraint by other students.

**Ease of copy and paste functions to answer questions reduced necessary effort to understand source content.** Kovan and Niko, two high achievers, firmly stated their preference to work without online sources. Niko does not consider the application of the CWR to be useful in facilitating students’ knowledge assessment or development of conceptual understanding in social studies. Specifically, he pointed out the issue regarding overuse of the copy and paste function because students could freely and easily copy answers from online sources. He considered such conditions to be extremely unfair for those who prepare and study hard. Because, as noted by some participants earlier, social studies is one of the subjects requiring ample memorization and solid understanding of its content in order to score well on exams. Niko commented on the problems associated with online resources,

I also think that using the computer right is quite bad because the students who aren’t listening right, if there are sources on the web, they can just go to a different browser and search for answers and copy and paste…that is the worst part, so I think it is not very fair
for people who have studied the source, and people who just copy and paste the source,
that is my main problem with that, yeah.

Niko went on to say, “I think CWR helps you to visualize but [instead of] memorizing
definitions right, students just copy and paste, they don’t think about reading the source, they
copy and paste.”

For these reasons, Niko saw limitations in using an online platform, like the CWR. When
Matt commented that, “I think it [referring to the CWR] is interesting because you can see
different things rather than just looking at the screen,” Niko strongly disagreed with Matt by
saying, “What he [referring to Matt] is saying is that instead of everyone looking at the board,
jotting down notes. But computers can be very distracting, so, paper and pen, I strongly suggest.”

Another participant, Fai, considered that the paper-based context was more relevant than
online learning contexts because the O-level examinations are conducted in the former
environment. These students’ views of the CWR demonstrates how context can affect students’
perceptions of technology and online resources in classrooms. Given the contexts of Singapore’s
high stakes examination system and competition for good grades, high performing students, such
as Niko and Kovan, felt that other students could be given an unfair advantage in getting correct
answers by using technology instead of working hard. Also, since they were preparing to do well
on O-level examinations they favoured preparing for the exam in the exam format (paper and
pen).

Fai highlighted several times the importance of utilizing time efficiently during learning;
he considers time as a crucial factor in determining how much he could study or prepare for a
subject. As much as he agreed with technology integration, he felt the need to follow the social studies syllabus closely to prepare for exams. Fai elaborated by commenting that,

> Accessibility wise, on computer is much faster, you get it done, easier, you don’t have to flip through or browse to do your work, it is right there in front of you. When we do it on paper, we have to flip pages… I think it is best that we stick to written paper because we eventually are going to take O-levels on papers anyway so it is better to stick to paper.

Fai’s statement shows that he prefers to learn in a teacher-centered classroom whereby learning is directed by a teacher and students are efficiently using their time to prepare for exams. In such a context, he follows the teacher’s instruction without having to actively engage in the processes of exploring, navigating, or directing his learning in an online environment.

In short, these findings imply that the utilization of the CWR could provide more positive outcomes for participants characterized as middle and low performers rather than for high ability participants because the latter are more motivated to actively participate in their learning and perform well on exams, whereas, the former may need other forms of motivation to learn.

**Logistical and technical issues made the use of the CWR inefficient in terms of class time.** In Bright Hill Secondary School, the location of the computer labs is an issue for some because in order to attend one class of computer-based learning, students have to leave their classroom located on the third floor and walk to the basement of another block before arriving at the computer room. By the time they settled in, ten minutes had passed; and login is another time issue concern. Out of the four schools in this research, three have similar conditions in which students have to leave their classrooms to attend computer-based learning classes. As TH
remarked: “[Using computers is a] bit inconvenient, because you have to go to the computer room.”

In contrast, Aston Secondary School was the exception whereby technicians delivered laptops to the students in their classrooms. Thus, students did not have to leave the class and move to a computer room. Although this efficient and organized approach enabled students to have more time to learn with less distraction or mobilization, there were technical issues such as students being unable to save their work at times, bandwidth problems (i.e., to download video) even if the technicians were ready to assist or change laptops if necessary. As Caleb stated: “The thing with technology is that when you crash, still stuck there. But pen and paper, can start writing.”

In brief, logistical and technical issues when using online platforms, like the CWR, can be frustrating at times for teachers and learners hoping to accomplish learning goals within limited class time.

4.2. Finding 2: SRL prompts assisted students’ learning of social studies

Most of the participants commented that the SRL prompts, lenses, or embedded guiding questions helped them to think about and understand the sources. In general, they pointed out that the embedded SRL lenses were useful in several areas: First, the embedded SRL questions were useful to narrow down their tasks by identifying key information before answering a question. Second, the SRL lenses prompted participants to think more about information in a source. Third, the SRL lenses prompted them to engage in self-questioning rather than simply answering a question about the source. Fourth, the SRL embedded questions can be applied to other subjects. The following table indicates the four categories of finding 2:
7 Table 4-3 Finding 2: Four categories in answering RQ1

<table>
<thead>
<tr>
<th>Finding 2: SRL prompts assisted students’ learning of social studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Identifying key information</td>
</tr>
<tr>
<td>2) SRL lenses prompted students to think more about information in the source</td>
</tr>
<tr>
<td>3) Cultivate self-questioning</td>
</tr>
<tr>
<td>4) Apply to other subjects</td>
</tr>
</tbody>
</table>

Research question One (RQ1): To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning?

**Identifying key information.** Most of the participants pointed out the usefulness of the following areas of the SRL prompts: identifying important points to answer a question; narrowing down key ideas from provided sources; focusing on main points during reading.

The SRL prompts aimed to direct students’ attention to focus on discerning important information from selected data sources. Determining important information is key when reading a source. Some of the participants tend to think that all information in a source is important. They lack the necessary reading skills to filter most critical to less crucial information in a source. To make sense of the sources, they need regulatory skills to monitor their understanding in order to move through the text strategically, and organize their thinking when deciding what is key in the source.

Jennifer Y commented that the SRL lenses helped to narrow down exactly what needed to be done. She followed with a more elaborated perspective by stating that,
I think the questions [referring to SRL embedded questions] help to narrow down exactly what you have to do, for example, the texts give you a lot of data, but the questions will help you understand exactly what or which data is crucial to answer the question.

Likewise, TH stated that the SRL guiding questions helped him to look for or narrow down key ideas in a provided source. TH stated that, “The guiding question I think is good, it helps me to know what I should look for from the source.” When prompted for more examples, he continued with the idea that, “It can be helpful because you summarize what you know; it is easier to use it [the lens questions] for going back to the source, and looking for what can be used.”

For students who work without clearly articulated learning strategies, the SRL lenses guided them to identify key ideas when reading a source. Commonly, students reported repeatedly reading until they grasped the content, for instance, NY found that the SRL lenses helped her to better analyze the sources, she noted that: “Right, you see the points why you have to read the information, rather than just reading it.” The prompts provided a sense of purpose and focus in reading the source.

Caleb highlighted that the SRL prompts were helpful to keep him on the right track by stating that “they are helpful if they are provided. On my own, I won’t be able to do it.” Oddie concurred that the SRL lenses were “useful because you can reflect on all the sources, and what the main purpose of the sources is.”

Niko noted that the SRL prompts help to summarize and conclude what he had learned before progressing to the next source. He commented that:
What I think is, the SRL question is useful…it basically helped to conclude what the students learning and what he’s understanding are to help him progress to the next source, so I think it helps students to understand and reflect back on what they have learned, and what skills they have to master to accomplish the understanding of the source given...

Niko disagreed on using online sources for learning social studies, yet unlike Kovan, Niko did not associate online learning with negative impacts only; he listed both pros and cons of using technology objectively by providing convincing examples to support his views. He asserted that the SRL prompts can be useful for students to understand, reflect, and assess a source.

However, when reading and analyzing sources, some of the participants lack the necessary skills and experience to tune out details and focus on the key ideas. For some students, every part of a source is considered equally important and these students said that the CWR lenses helped focus their reading. In this case, the SRL prompts plays a key role to assist students to identify and capture main ideas rather than tangential or less relevant information.

**SRL lenses prompted students to think more about information in the source.** Participants also discussed how the SRL lenses prompted them to think more carefully and go beyond the surface of information presented in a source. To these participants, the embedded SRL prompts created a different learning experience in their social studies classes. They commented the ways SRL prompts assisted them to become more active, aware, and cognizant of how they could approach their learning with a purpose other than simply providing or looking for an answer to a question.
CT responded: “We don’t really see these kinds of questions in our papers [exams],
whatever we do. It did make us think more and understand what we were really reading instead
of like just answer the questions.” Hillary nodded in agreement with CT and added that she
benefitted from the SRL prompts because she learnt to think “out of the box”. Hillary elaborated
that,

They [referring to the SRL guiding questions] were quite useful because I didn’t see that
kind of questions in S.S., or in school, so, it made me think more, or out of the box, a bit
more innovative, try our best to answer the best way possible according to the questions.

Likewise, AL and QQ provided affirmative views of how the SRL prompts assisted them
to think more carefully about information rather than reading for the purpose of completing a
question. QQ replied that the SRL questions helped him to think more about the source; he was
able to remember that the SRL prompts asked about the main ideas in a source and to reflect by
summarizing what he had learned. QQ said that “The side questions [refer to SRL lens] helped
me to think.” When the researcher prompted for elaboration, AL stated that,

Without the side questions, we are just scratching the surface of the texts, we are not
going in depth, the questions posted, prompt you to investigate even further. Going
beyond the surface of the source, and finding the meaning behind it. It is like asking you
what other information can you put in from the source.

RT concurred by saying that, “It is okay for me to have the guiding questions there
because they make us think more about the source, think deeper, and we can relate it back to the
question.”
The participants’ responses also suggest that they were more engaged with the CWR activity. For students to work with social studies activities, they need to identify key information from the provided source and think further before answering a question, for example, to think about the various perspectives presented, and be able to construct a convincing answer based on evidence drawn from sources. Evidently, the SRL prompts help participants to engage with the activity by thinking further about various views, arguments or facts.

However, in contrast to most of the participants who found the SRL prompts to be useful, YT disagreed by saying that “Not really have us think more about our learning, because we have many questions already.” He continued to say that “If it is necessary, I will use, if not, I won’t.

YT did not think that the SRL prompts could be helpful for him, he noted that there were many questions to be answered during the poverty activity, and unless it was really necessary, he would not use the guiding questions. To him, for an easy activity, he would not consider using SRL, however, if the level of difficulty is higher, he would use it.

**Cultivate self-questioning.** One of the participants, Cindi, shared an important point concerning the SRL prompts for cultivating self-questioning. She noted how the teacher has often asked students to discern and identify the main points of a source. In so doing, the teacher wanted them to discern and identify main points in each source. Cindi considered this approach as a meaningful practice in the longer term because through consistent practice of asking or checking, students inevitably cultivated the habit of identifying key ideas in information sources. As a result, she commented that the use of SRL guiding questions were instrumental for students’ learning involving source analysis. Cindi asserted that,
For me, it is quite useful because in class, the teacher always asks about the main points.

The teacher also engages us in this kind of activity to help us understand an article or a source, so I think it is a good practice. In the long term, if we can cultivate the habit of always asking ourselves [referring to asking oneself with questions when reading a source], I think it would be very helpful for us.

Cindi’s sharing indicated that she established connection between the SRL guiding questions and her teacher’s instruction. When analysing source work, self-questioning is a way to increase one’s reading comprehension. The SRL prompts help some participants to engage with the reading process by asking question such as what is important here or how can I use this information to facilitate further understanding of the topic under study.

**Apply to other subjects.** Some participants noticed that the SRL guiding questions could apply to other topics such as History or Geography. Jai provided a broader view on how to do so. He disagreed with another participant, Justin about using prompts only for Social Studies, History, and English but not for Mandarin. Jai thought that the SRL guiding questions could be used for other subjects because he considered them useful for identifying the main points in a source in addition to answering the questions. Jai said that, “I think for any subjects I can use it to recall right?”

Finally, in finding 2, the majority of the students found SRL prompts to be effective during the globalization and poverty activities. This could be due to two factors: 1) the SRL prompts assisted their reading process by identifying key ideas; 2) the prompts helped them to become more aware of using learning strategy such as self-questioning to help with source analysis.
In conclusion, finding 2 indicated that students found the SRL prompts in the CWR to be both supportive and non-supportive for learning. Those who adhered to the former commented that the SRL guiding questions helped them to think further and better understand the sources. They explained how the SRL prompts assisted them to narrow down the tasks by identifying key information for the questions. Conversely, those who were in the non-supportive felt that the SRL guiding questions were repetitive and added more work for task completion.

The following table (Table 4-4) shows an overall view of participants’ detailed responses either as supportive or non-supportive of the SRL prompts. Note that four participants provided either without indication, unclear, or it depends on questions. The last response, it depends on questions, indicates that when the source questions are not difficult, then no SRL prompts are needed. However, if the source questions are difficult, then, the SRL prompts can be helpful.

8 Table 4-4 Learner’s experience with SRL prompts

<table>
<thead>
<tr>
<th>Secondary Three</th>
<th>Learners supportive of SRL prompts</th>
<th>Learners non-supportive of SRL prompts</th>
<th>Secondary Four</th>
<th>Learners supportive of SRL prompts</th>
<th>Learners non-supportive of SRL prompts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudonym</td>
<td></td>
<td></td>
<td>Pseudonym</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bright Hill:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class A, Group One</td>
<td>Ramon w/o indication w/o indication</td>
<td></td>
<td></td>
<td>YSL ✗</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Mac ✗</td>
<td></td>
<td></td>
<td>NY ✗</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dani X</td>
<td></td>
<td></td>
<td>Jennifer Y ✗</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TH ✗</td>
<td></td>
<td></td>
<td>JT ✗</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>HX ✗</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Two</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Mac w/o indication w/o indication</td>
<td></td>
<td></td>
<td>QQ ✗</td>
<td>X</td>
</tr>
<tr>
<td>7</td>
<td>ZY ✗</td>
<td></td>
<td></td>
<td>Kovan ✗</td>
<td></td>
</tr>
<tr>
<td>Maya:</td>
<td></td>
<td></td>
<td></td>
<td>Hillary ✗</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Norman ✗</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Fai ✗</td>
<td></td>
<td></td>
<td>Elizabeth ✗</td>
<td></td>
</tr>
</tbody>
</table>

ATTENTION: The Singapore Copyright Act applies to the use of this document. Library and Information Services Centre, National Institute of Education.
The SRL prompts provide an opportunity for participants to learn and practice self-regulatory strategies during classes, although a few students found that the SRL prompts did not
support their learning, most suggested that the prompts were helpful to think more about how to learn.

Finding 3 examines the factors related to the views of those participants who thought that the CWR was useful, and others who had different viewpoints.

4.3. Finding 3: Students’ conceptions of social studies affect their views on the usefulness of the CWR

This finding elucidates the motivational factors of the participants. The categories added an expansive dimension in understanding why some participants found the CWR to be useful, whereas others thought differently about its implementation. This section helps to answer RQ1 by providing five motivational-related issues in relation to students’ willingness to learn with an educational tool such as the CWR. These different issues are linked to factors such as personal interest which can be explained through societal influence in terms of how a student views his learning of social studies, in this case, with the CWR. See the following table (Table 4-5) for the five categories.

9 Table 4-5 Finding 3: Five categories in relation to answering RQ1

<table>
<thead>
<tr>
<th>Finding 3: Students’ conceptions of social studies affect their views on the usefulness of the CWR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research question One (RQ1): To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning?</td>
</tr>
<tr>
<td>1) Interest</td>
</tr>
<tr>
<td>2) Lack of interest</td>
</tr>
<tr>
<td>3) Learners’ strategies and preferences in learning</td>
</tr>
</tbody>
</table>
4) Learners’ perspectives of learning social studies

5) Career aspiration

During the focus group interviews, some of the participants discussed their interest or disinterest in learning social studies. The question on students’ interest in social studies was not included in the list of focus group interview, instead students brought this up on their own during the discussions with the researcher.

**Interest.** The participants with interest in Social Studies were willing to invest more effort in order to excel. They indicated several factors contributing to their interest in social studies: 1) aspiring to become a top student; 2) setting goals to guide learning; and 3) preferring the arts stream over science. These interest-driven participants used more learning strategies in areas of source evaluation, goal setting, and regular note-taking. Respectively, these different factors are supported by evidence from participants Kovan, Jennifer Y, and Hillary.

The participants’ interest in learning social studies depends on multiple factors such as the importance they place on the subject. For some of them, the interest to become a top student motivated them to work hard, and fine-tune learning approaches to achieve desired performance. One of the participants, Kovan acknowledged that,

In the past, I was top 15 but since the beginning of this year, I’m trying to change my techniques to learn better. This is my final year, I want to do the best so from the start of the year, I change everything.
With this said, all participants laughed and began talking briefly about other students’ grades. When asked if his improvement was a result of a change in learning strategies, Kovan nodded and replied confidently that it was. Some of the learning strategies engaged by these participants with interest are setting achievement goals and practicing self-evaluation. Goal setting helps them to focus on the process of learning social studies by using grades as a performance indicator.

Jennifer Y explained that she had a very clear goal for scoring grades on different sections of social studies tests. Jennifer Y stated that,

I think my learning strategy is due to… I really like History and S.S., so I actually have a very clear goal, like for different sections, how much I want to score. When I get my test paper back, if I don’t get the mark, I’ll feel very sad. But I look through to see what I could have done better.

In addition to monitoring learning with the application of learning strategies, some of these participants shared that they focused on understanding the content rather than depending on memorization. To perform well, Hillary said that,

Okay, this is very unusual, I prefer the Arts stream more than the Science. Since young, I always wanted to pursue art stream, so I have interest in S.S., basically, my combined human, the other pure human subjects are arts, I love all three subjects, so, basically, the interest that I have is what helps me to sort of have the will to do it well. If I go to J.C. [Junior College], I also want to take more of the Art subjects rather than the Science, because I have interest in that. I think that memorizing is not the way, you should rather understand what you are doing, because some of the topics in Geography are like
common sensical, so, there is no point, memorizing, rather than just read it a few times, then, you understand what you are reading, so that it actually makes more sense, so the strategy is like, you understand what you are reading rather than just memorizing it.

Kovan, Jennifer Y, and Hillary exemplify how the participants with interest in learning social studies invest additional effort, engage in goal setting, and attempt to understand content without depending on memorization only. Notably, Jennifer Y and Hillary supported the application of the CWR in classrooms learning while Kovan disapproved since he prefers the use of paper and pencil. As a top student who is interested in learning social studies, Kovan focuses on applying necessary strategies to achieve his goals. However, it is important to note that the majority of the participants are disinterested in learning the subject, thus, to help these learners, it is necessary to enhance their learning process through engaging modes of instructional delivery.

Lack of interest. Some of the disinterested participants associated social studies with general knowledge, common sense and thus gave little value to its learning. Other participants aligned their disinterest with future career aspirations because they do not see the relevance of social studies to employment opportunities, consequently, they prefer to work on other subjects that are more in alignment with their career aspirations. In general, these participants show characteristics of: 1) unfamiliarity with the application of the VAMAO and other formulas; and 2) misconception that learning social studies is based on common sense.

Disinterested students were unclear about the application of formula(s) for answering questions. In contrast, students with higher degree of interest were able to clearly explain how to use the formula(s). For example, one formula used by students is VAMAO, an acronym that helps students during source analysis. Briefly, VAMAO refers to V as verb; A indicates
audience; M points to message; and AO denotes anticipated outcomes. These are points for students to consider when writing their answers.

Similar to other participants who were unfamiliar with the application of the formulas such as VAMAO, Rimi claimed that it does not require necessary effort when studying social studies, “No, it is not that complicated. For SS, not much of planning, just do it on the spot. There is this format that we follow, like, VAMAO.” However, when asked how to apply the formula for a question, Rimi was not able to explain; he checked with other participants to elaborate on its meanings and application.

Other disinterested students regarded learning of the subject as a matter of common sense and boring. Steven responded similarly to Rimi by stating that: “For S.S., I don’t study as well. Most of them [referring to topics] are like common sense.” KSH claimed that social studies is a colorless subject that needs no revision. Despite the fact that some participants had limited interest in social studies, they did not openly declare their disinterest with the exception of KSH and Steven who expressed their indifference right from the beginning of the focus group interview. KSH said that, “I don’t study social studies, I just listen in the class.” He continued to add that, “Yes. I find S.S. very boring. Most of the students in the class are sleeping when the teacher talks.”

Between these two participants, KSH was more active in sharing his views on issues concerning learning, future planning, and his lack of interest in social studies. In contrast, Steven was less active, discrete and spoke little throughout the discussion. His responses were usually short to the point without elaboration. However, in the case of KSH, his interest of learning is aligned with his future career; he looks forward to be involved in the business world, thus, he
invests extra effort and time in English and Maths. To KSH, social studies is not related to his future career, hence, he is unmotivated to advance in this subject.

Similar to KSH, Leo demonstrated a lack of interest in social studies, yet he was enthusiastic with the CWR due to online accessibility, and more importantly because the CWR is related to his career aspiration in the field of animation. He admitted that, “Google is my best friend.” His goal is to be admitted into a Polytechnic under the Animation Program. Leo shared that, “Yes, Poly Foundation Program and into Animation.” Notably, the CWR plays a key role in supporting disinterested participants such as Leo and Rimi to actively engage in their learning.

The integration of the CWR into social studies classes generated a sense of relevance to participants who are growing up with digital technology and familiar with computer, internet, and handphones from an early age. In this case, relevancy refers to the way participants felt about their learning of content material since it parallels their daily activities outside of the classroom.

To identify differences between participants with indication of interest or lack of interest, their written responses in the CWR activities were extracted for comparison of similarities and distinctiveness. See the following table (4-6) for participants in these two categories:

<table>
<thead>
<tr>
<th>Participants</th>
<th>With Interest</th>
<th>Lack of interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jennifer Y</td>
<td>Q: What are the messages of this source? A: Globalization has helped to improve Singapore's economy. Singapore has many places that will attract tourists and when tourist comes to Singapore, our economy level will increase. The message of this source suggests that globalization has a positive impact in Singapore's economic level. With such a</td>
<td></td>
</tr>
</tbody>
</table>

Table 4-6 Finding 3: A comparison of CWR online responses from participants of different interest categories
positive impact, Singapore will be able to keep the inflation level low. Inflation is defined as an increase in the general price level and is generally seen as a problem. With the increase in Singapore's economy level, We will be able to import raw materials from other countries at a lower price. Also, Singapore will be able to have a positive net-export by importing cheaper raw materials from abroad and exporting high value-added products. For example, Singapore imports crude oil from abroad, refines the oil and exports it to different countries. Therefore this suggest that Globalization has a positive impact in Singapore's economic level.

Kovan Q: What are the messages of this source?

A: The messages are globalization has an economic impact to the world. Firstly, globalization has help Singapore to gain economic growth through trading. secondly, large amount of foreign direct investment (FDI) helped Singapore achieve potential economic growth. third, Singapore benefited from increased labor flows across international borders. fourth, globalization keep inflation low. lastly, globalization keep Singapore's unemployment rate low. in summary, Singapore have a positive net-export by importing cheaper raw materials from abroad and exporting high value-added products.

Kym Q: What are the main ideas in this source?

A: main ideas in this source is to show the people who are going through the poverty and there are many difficulties in finding a way to solve their problem but yet it is trying show some solutions and advises to the people who are going through poverty. Hence convince them to take action to break through poverty.

Steven Q: What are the main ideas in this source?

A: The main idea is to tell the readers about how poverty has affected the country and what the challenges that the poverty can actually make.

Rimi did not complete the same question.

Leo Q: What are the main ideas in this source?

A: the main idea is how Singapore is in poverty and how we can overcome it.
The participants who expressed interest in learning social studies completed the activities with well thought-out answers. In contrast, those who pointed out the lack of interest provided shorter answers; some were incomplete and some did not provide answers. Take Rimi for example, he selectively answered four out of the ten questions in the CWR activity, the one in the table above remains incomplete. Although he indicated his lack of interest in social studies, his online responses and focus group interview show that learning with the CWR makes a difference compared to standard paper-based text.

As previously indicated in finding1, Rimi found learning through the video source more stimulating than text-based reading as the former provided multiple perspectives of the topic. In his CWR online response, Rimi devoted more effort in completing the question: “According to this video, how can the following help Singaporeans break out of the poverty cycle?” Rimi followed up with a relatively long written answer stating:

Singaporeans have many ways in terms of help to get out of the poverty cycle. Firstly, the government aids those that are in need of help or the less fortunate ones. They help in terms of giving them money monthly to help in their expenditures. This can break them out of the poverty cycle as they do not need to worry so much on feeding their families or paying the bills thus they can work harder to get more money to break out of the cycle. If the government happens to not help those that are in need, there are social services like the red cross. They help the less fortunate in terms of buying them up to $250 worth of groceries. Thus, this is also one way to break out of the cycle as the people getting the help will not have to worry about buying their groceries monthly.

Surprisingly, Rimi who reported lack of interest in social studies embraced the use of CWR online video and showed active engagement through his online written responses. Within a
relatively short period of time, Rimi assimilated detailed information from the video source about poverty. The CWR was found to play a key role as a supportive learning tool in assisting disinterested participants such as Leo and Rimi to actively engage in their learning.

In conclusion, lack of interest illustrates how intertwining factors between learners and supportive environmental variables such as the CWR are instrumental in motivating learning engagements. As pointed out by Cindi who remarked on the importance of motivational variables,

You have to motivate yourself, and find something that motivates you. When you feel like giving up, you must have someone besides to motivate you. Life is tough, so, you need someone to be there to motivate you, whether it is your teacher, your friends, or your parents. It’ll be good to have someone to motivate you…

To motivate and facilitate changes in disinterested students, the CWR can play a role between person-environment relations as Bronfenbrenner (1979) refers to these changes as “ecological transitions,” meaning the relations are both consequences and motivators of development. Essentially, Bronfenbrenner’s ecological systems theory explicates that human development is influenced by their environments. Therefore, in the case of disinterested participants, the use of the CWR could be a positive influence on their learning of social studies.

Learners’ strategies and preferences in learning. Students who demonstrated interest in learning social studies shared more learning strategies than those with less interest. Among these strategies are: rephrasing texts into one’s words; applying multiple elements of evaluation; using a story telling approach; and administering different learning formulas. In contrast, participants with less interest described that their preferences in learning social studies are
associated with their future careers. Those who do not see the connection between social studies and future employment invested limited time, effort, and aimed for passing grades only. Others prefer class sharing since they consider it to be an effective instructional approach for gaining diverse perspectives of social studies. Class sharing captures their attention and helps them to maintain focus in order to learn from their peers.

*Participants with interest.* The participants who reported interest in learning social studies engaged in a range of preferred learning styles. Their interest and engagement in turn place some of them (for instance, Jennifer Y and Kovan) as the top performers in the class. For instance, to achieve a better understanding of a source, some of them write down notes in their own words. Writing in one’s own words is an active learning strategy that involves focusing on reading and comprehension.

After reading a source, Jennifer Y annotates the important points in one or two lines and summarizes the ideas in her own words. By rephrasing texts, she gains a deeper sense of the meanings, therefore attaining a better understanding of a source. She elaborated that by writing in her own words, she felt more secure with the meaning of the texts, and that it was easier to remember source information. Jennifer Y described it as follow: “I’ll read the question and the source, then, I’ll scribble down the important ones, just summarize what it is trying to say using my own words.” She continued to share that,

I would pick the key words, and once I get a sense of the source, I would try to explain it using my own words, because I feel that sometime I don’t particularly understand the note, so I’ll write it in my own words to make it easier to understand.
In addition to the above, other participants apply multiple elements of evaluation before answering a question. Kovan shared that he first read the title to determine if it is a biased or non-biased source; and where and when the event took place. He elaborated that,

Last year, I don’t even look at it [refers to the background information] but this year yes, the background information is very important, it leads me to what the sources would be saying. For each source, I will answer the main question first, then I will look at source A to determine if it is a biased source or a purpose source; if the situation occurs before or after. Then, I’ll go back to the question again, with the main question, I’ll go to the source and pinpoint the answers. After, I’ll check whether one source supports or contradicts another.

Storytelling is the strategy applied by other participants too. Storytelling forges connections among people, events, and ideas in order to make sense of topics. Hillary uses storytelling to make sense of the sources and understand complex information through linkages of factual or tangible examples into meaningful parts for conceptual understanding. She said: “I actually make them seem like a story. Basically, in a way that I can understand it.” The practice of storytelling enables Hillary to actively integrate new information into a comprehensive structure to understand facts, details, or data in a coherent way.

Compared to some participants who do not have clear understanding of when and how to use different formulas, TH has a clear understanding of 3A and PEEL. Both are scaffolds to assist students in answering questions that ask them to explain an issue or topic they are studying in Social Studies. They are strategies typically used in classrooms in Singapore. Briefly, 3A involves action, audience, and anticipated outcomes. Whereas, PEEL refers to point, evidence, explanation, and link. Point (P) indicates the overall argument or main ideas; evidence (E) from
the source to support the point being made; explaining (E) the answer in which evidence is
provided to establish a claim; link (L) the answer to the posted question. He said that: “For me, I
use PEEL format and 3A. I answer a question using PEEL and 3A.”

In short, students with interest shared a range of learning strategies they use when
learning social studies, and demonstrated awareness of the steps required in source analysis and
application of formulas. Importantly, the SRL prompts could support these different strategies as
supplementary guides for students to apply during the process of online source analysis.
Particularly, in the case of the lack of interest participants, these SRL prompts could help them to
be cognizant of the necessary and relevant steps to be taken during social studies activities.

*Participants with a lack of interest.* Both Secondary three participants from Bright Hill
and Aston mentioned that they were taught to use the PEEL formula for social studies writing.
Some of them shared that they use 3A as well. These two formulas assist students to reinforce
their understanding by providing alternative ways of building their answers with more
sophisticated writing and reasoning skills which contributed to enhanced written responses.
However, there are participants who cannot identify differences between 3A and PEEL; they
think that these two are identical.

To Ramon, PEEL and 3A were analogous, “These are very similar, if you know one, you
know another. Just changing a few keywords.” Ramon further reasoned that as long as a student
used one of the formulas to write the answer, marks will be given by the teacher. Ramon: “The
other marks depend on your content; whether you chose the right evidence, answer correctly or
not, but more or less if you write the format, they should give you mark.” While Ramon
understands the steps necessary to get “marks,” he doesn’t seem to be aware of why or how this
helps his learning.
Overall, the findings point to the differences among students with different interest levels. TH from the interest group uses two types of formulas to help his writing; in contrast, Ramon from the disinterested group indicates a lack of awareness of how to apply them. For the latter group, the CWR with its SRL prompts can be essential for highlighting key areas to focus on during social studies activity, but students would need a better understanding of why they perform particular procedures.

**Association of learning with future career.** Some participants associated learning preferences with future work plans. Essentially, they meant that if they want to have a profession in the field of social studies, they would have to invest extra effort to excel, otherwise, they would only work to meet the minimum grade requirement. Students expressed a need to see the relevance of the subject to their career aspirations.

Fai commented that working hard is not everyone’s desire and that working smart may be more suitable. To him, working hard needed a great deal of effort. In his words,

> Hard work really is doing everything from scratch…smart work is like knowing what you want [referring to the type of job], knowing what you need to get done just going through the requirements, you don’t waste time on unnecessary thing that you think that you don’t need to know. At the end, it depends on the person; it depends on what you want to do in the future.

The above suggests that if a student does not see the relationship between a subject and career aspiration, minimum attention, effort and time in learning would be invested. In such a case, technology integration such as the CWR may play an insignificant role in their learning.
Group sharing. The participants shared that they prefer to learn through class sharing rather than reflection. They highlighted that peer sharing helps them to gain multiple perspectives from other students and thus better understanding of the topic.

Myra compared self-reflection with group sharing to demonstrate her preference in learning social studies. She thinks that self-reflection is not useful for learning. Myra commented that her classmates tend to be reluctant when the class activity was to be completed with a reflection exercise to be done individually.

She observed how her classmates participate half-heartedly without benefiting from the activity. In contrast, class sharing was viewed as an effective approach in learning because of instantiation of knowledge building process in which one idea contributes to the formation of another. Consequently, many ideas will surface to enable students to gain multiple perspectives, feedback, and rich insights on issues concerning their learning. Myra noted that:

I honestly feel that sharing is much more effective, because I recently went on an overseas trip [an exchange program in Indonesia], and we were asked to do reflections at the end of the days, but I honestly did not find it that effective. Before reflections, we did sharing, that was much more helpful. In reflection you have to be more structured, nothing wrong with being structured but it might distract your train of thoughts. You wanted to say something but when you write it down is kind of restrictive, I don’t really know how to say it, but I feel that when we talk, more ideas will be triggered from people’s mind.

Likewise, Mac pointed out that sharing among students during social studies classes fostered effective understanding of the topic being discussed. He commented that it is very
helpful to look for common mistakes by going through other students’ answers. Mac asserted that knowing one’s mistakes is important for improvement, and subsequently stand a higher chance of getting better score during tests or exams. Mac indicated that,

Personally, I find that in class, the teacher gives us enough of work to get a good understanding. With the homework, the teacher will get a few volunteers in class to go through answers and find common mistakes, from there, I will learn from others’ mistakes and have a good understanding of my learning.

Essentially, the participants acknowledged the importance of group learning as an alternative for improvement. In Bright Hill Secondary School, the teachers commented that although they wanted to have a class sharing after the completion of the CWR activity, they were unable to do so due to time constraint. To address the question on class sharing, the CWR provides a sharing feature in which teachers could conveniently pick a few written responses from students as examples to be shared with the whole class.

Learners’ perspectives of learning social studies. In general, the participants considered social studies to be a challenging subject requiring repeated practice and memorization. To some, rote learning is imperative in order to excel. To others, re-reading, rewriting, and repeatedly practicing were approaches to learn the subject matter. However, the engagement in drill and practice is an arduous process that may affect those who have limited interest in the subject.

While sharing his thoughts, Jai emphasized the requisite of repeated readings. He stated that, “I don’t know since primary school we have been doing that, read the question, the text,
then you read the whole thing, you don’t answer just like that, you read, read, read, then, you answer.”

Jai’s conception of learning social studies was representative of most participants’ views in which drill and practice or rote learning and following particular procedures is essential in order to excel. Matt concurred that: “S.S. [Social Studies] is a tough subject, it requires memorization and also about understanding.” The rest of the participants nodded their heads in agreement with Matt.

Niko elaborated Matt’s thoughts by stressing that memorization of key words is fundamental to get good grades. Niko asserted that: “If you are able to memorize the key answers, you’ll be able to get good marks. You need to memorize the key words. These key words will give you these marks.”

When prompted for more detail, Niko added: “Yeah, definitions and all that, you must really remember.” Niko associated good grades with memorization of key points and this was echoed by another participant, Norman, who reported: “…My study technique is that usually when I see something, I memorize bits and pieces, or chunks of information stated in text book, and that is where I try to get high marks.”

While Niko was sharing his perspective in learning social studies, LKM, opposed his approaches by challenging him with a valid question, LKM stated that,

I want to counter the thing [referring to Niko’s notebook], in exam you may have one source, you do the sources over and over again, with all the key points and everything right, but in exam, they keep changing the source, they don’t give the same source every year right, how are you going to counter that?
Although Niko and Norman were from different schools, they adopted the same approach: memorization in order to score good grades. Through their personal experiences, these two participants confirmed that in order to secure good grades, memorization is key. In contrast, LKM and Fai questioned about the memorization approach since they were investigating other ways of learning, understanding, and thinking about social studies.

LKM and Fai were the only two participants who raised questions about memorizing contents. The participants from other schools commonly shared that they use memorization to help with their learning. In finding four, memorization will be further discussed since most students use it as their preferred learning approach.

The integration of CWR in social studies surfaced several issues in relation to drawing and capturing the participants’ attention, particularly, the various ways to assist disinterested learners. To engage these participants to think further about social studies issues and not mainly memorizing the content, the provision of learning approaches through the CWR could be embedded to scaffold their interest, engage them to learn, and guide them to progress through the learning of social studies.

**Career aspiration.** The majority of participants are unaware of the wide range of careers opportunities and potential benefits in the field of social studies. Commonly, they mentioned career aspiration in the fields of business, accounting, or technology related areas; very few associated career choices to social studies. The fact that participants demonstrate limited interest in the subject indicates that there is a pressing need for a larger number of potential professional positions to be developed in the field of social studies and for teachers to share these career possibilities. The majority of participants are unaware of the wide range of careers opportunities and potential benefits in the field of social studies.
When sharing their plans after Secondary education, most participants had a general sense of direction, for instance, KSH shared enthusiastically that he looks forward to be admitted to one of the local Polytechnics because he wants to major in business: “I want to major in business, because my parents’ work involved a lot of money, like stock and forex. I find it very interesting.” He was influenced by his parents’ professions which he regarded as stimulating. His parents took him to a few wealth seminars when he was in primary six. He hoped to follow his father’s career as a forex trader.

To become successful in the business world, he reckoned that he has to be good in English and Mathematics. He considered himself to be proficient in English, but he was aware that he has to work harder on Maths in order to become better. To achieve his goals of being admitted to the business program, KSH spends additional effort for Maths. He created a fixed schedule for maths, practiced examination papers, and consulted his school teacher and his tuition teacher.

Essentially, KSH’s motivation to score well in Maths is related to his career aspiration which is influenced by his parents, particularly, his father. KSH’s father was the key influential factor compelling him to set goals, work towards them with substantial effort, and hopefully he could achieve success. KSH’s interest in Maths reflected his understanding of doing well in the subject in order to obtain future employment in the business world. At the same time, KSH’s disinterest in social studies implies that he does not see social studies as a means to obtain future employment.

Finally, finding 3 illustrates the complex interwoven categories presented in students’ learning trajectory of social studies. To address these categories with multiple variables, the CWR with its multimodal instructional method plays a role in enhancing the learning process of
the disinterested students. The CWR supports participants who are familiar with computer, handphone, and technology devices by enabling a sense of relevance to their informal contexts in which internet is commonly used. To the disinterested participants, the integration of the CWR could be a positive influence on their learning of social studies. The embedded SRL prompts can highlight key areas for them to become cognizant of the necessary and relevant steps to apply during source analysis.

This finding further teases out the issue concerning students who do not see the relationship between social studies and career aspiration, in such cases, the role of the CWR might play an insignificant role since these students tend not to give attention and time to learn the subject. In addition, almost all participants consider that the learning of social studies require memorization or rote learning which is a challenging issue for disinterested students because it fails to motivate and engage them to learn the subjects with better understanding. In short, to engage these disinterested students, it would be essential to scaffold their interest and guide them to progress through the process with the use of SRL prompts.

At this point, it is important to note that findings 1 to 3 address RQ1 and sub-RQs: 1a, 1b, and 1c. Following is a consolidation of the above three findings before further discussing finding 4 (it addresses RQ2). See below for the RQ1 and sub-question RQ1a:

**RQ1:** To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning?

**RQ1a** (sub-research question): How does the CWR support and constraint students’ learning?
Finding 1 (CWR provides certain support and constraints for learning) helps to answer RQ1a by explaining that the CWR supported the participants, particularly the disinterested students in learning social studies because the online sources provided ample ground for experiencing multimedia resources. The participants pointed out that within a relatively short time-frame, they learnt about multiple perspectives concerning the topics. Some of them compared the CWR online sources to text-based and remarked that for the latter more time is needed since it requires reading, sense making, and eventually understanding of sources. To these disinterested participants, the CWR facilitated better understanding of information at a faster pace, for instance, online videos provided opportunities for gaining multiple viewpoints and in various forms such as text, sound, and visuals.

Moreover, according to the participants, the CWR online sources provided more evidence for developing cohesive answers to posted questions. They explained that text-based sources are often short and without detailed information. In contrast, the online sources presented substantial amount of content for elaboration of their understanding. Likewise, they noted that to write down responses, the keyboard is more convenient due to the ease of typing over handwriting. To some of them, learning in an online context is similar to an actual work environment where computing and keyboarding remain to be key skills. As a result, most of them strongly supported technology integration in social studies classes.

However, some of the participants indicated constraints when using the CWR. They remarked that paper-based sources were easier to highlight, underline, or refer back to a written sentence or paragraph. They reported that the CWR sources discouraged learning due to reasons such as limitations to annotating, drawing, or highlighting texts. In other words, unlike text-sources, they are unable to easily write, circle, or underline key points. This became a limitation
because it made learning difficult. Notably, the CWR provided more positive learning outcomes for mid and low performers rather than high ability participants due to the fact that the latter are more motivated to learn and perform well on exams. But the former groups prefer other forms of motivating factor such as the CWR to learn the subject.

Finally, for participants who had to leave their classrooms and walked to the computer rooms for the CWR lessons, some pointed out that insufficient class time was a constraint. In this research, three of the schools have similar conditions where students had to leave their classes; only one school had technicians sent the laptops to students in class. This approach is more conducive for learning in the context of technology integration. None of the participants who worked in this setting mentioned the constraint in relation to logistical and/or technical issues.

**RQ1b:** In what ways did the SRL prompts facilitate students’ awareness of their learning?

Finding 2 (SRL prompts assisted students’ learning of social studies) elaborates that the SRL prompts assisted participants to become more aware of their learning in the following ways: First, identifying key information from sources before answering provided questions. Most students lack necessary reading skills to filter most critical to less crucial information; and they tend to think that all information presented in a source is equally important. However, they reported that while reading a source, the SRL prompts guided them to identify main ideas rather than tangential information. Hence, they became more aware of how to focus on key ideas by tuning out unnecessary details. Essentially, they were cognizant of how to approach their learning with a purpose rather than continuously re-reading in order to find the answers.
Second, some of them noted that the SRL prompts shared similar characteristic with the teacher’s instruction. Similar to the teacher, the SRL prompts encouraged students to partake in source analysis by engaging in self-questioning in order to increase reading comprehension. In this finding, majority of the participants considered the SRL prompts to be effective because they increased awareness of using learning strategy such as self-questioning to help with source analysis. Some of them even considered that consistent practice of asking or checking can contribute to habit-building in terms of facilitating understanding of a topic. Although a few students stated that the SRL prompts were not useful, most indicated that prompts were helpful for thinking more about how to learn. To conclude, they further suggested that the SRL prompts could apply to other topics such as History or Geography.

**RQ1c:** How did students’ attitudes and values about social studies impact the way they considered the CWR to be useful for their learning?

Finding 3 (Students’ conceptions of social studies affect their views on the usefulness of the CWR) adds a broader dimension in understanding why the CWR was useful for some participants but not for others. The participants’ willingness to learn through the CWR linked to factors such as personal interest or a lack of interest. Those with interest shared a range of learning strategies, demonstrated awareness of the required steps for source analysis, and showed motivated to learn. In contrast, the disinterested participants associated social studies with general knowledge, common sense, and thus gave little value to its learning. However, some of them pointed out that the integration of the CWR generated a sense of relevance because of familiarity with prevalent digital technologies used in everyday life. According to these participants, learning in a computer-based classroom is pertinent to real life contexts where computers, internet, and hand phones are widely used.
The integration of CWR in social studies surfaced several issues in relation to drawing and capturing participants’ attention during learning. Majority of the participants considered social studies to be a challenging subject requiring repeated practice and memorization. They approached the subject by re-reading, rewriting, and rote learning; but for disinterested participants, this approach can be an arduous process that could further reduce their limited interest in learning social studies. Notably, some of the participants associated learning of social studies with future careers by pointing out that limited attention, time and effort would be invested due to the lack of connection between the subject and their career aspirations. As a result, participants who do not see the relationship between social studies and career aspiration considered the role of the CWR to be unproductive and inefficient.

The next sections, findings 4, 5, 6, and 7 address RQ2 and sub-RQ2a, b, c, and d, see the following for further elaboration:

4.4. Finding 4: Students’ key learning approaches

Finding 4 includes four categories: 1) help seeking from teachers; 2) independent learning; 3) memorization; and 4) prior knowledge activation. These different categories reveal the different learning approaches practiced regularly by the participants. Most students’ learning approaches focus more on seeking help from teachers, memorization and less on independent learning and prior knowledge activation. These categories add an important dimension in understanding the role of the CWR because if more participants self-regulate their learning, they would be engaging less in dependent help seeking behaviors by demonstrating a wider range of independent learners’ characteristics, and subsequently less dependence on memorization as a way to help with their learning in social studies classes. See the following table (4-7) for the four categories:
### Finding 4: Students’ key learning approaches

<table>
<thead>
<tr>
<th>Research question Two (RQ2):</th>
<th>Help seeking from teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the SRL strategies used by Secondary Social Students?</td>
<td></td>
</tr>
</tbody>
</table>

1) Help seeking from teachers  
2) Independent learning  
3) Memorization  
4) Prior knowledge activation

**Help seeking from teachers.** Help seeking is one of the most frequently mentioned strategies used by the participants. This occurrence is due to several factors. Some participants require assistance from their social studies teachers when they have difficulties identifying main ideas or key concepts. Others need their teachers’ support because of lack of confidence and judgement. Most of the participants prefer to follow their teachers’ explicit directions on how to do their work.

The participants who tend to seek help from their teachers depended on teachers’ instructions, such as what is necessary to follow and how to approach questions.

During the focus group discussion, YSL repeatedly mentioned that she approached her social studies teacher for help. When YSL is uncertain about her answers to an activity, she consults the teacher for help. Once the teacher confirms that her answer is relevant and
sufficient, she would accept the teacher’s suggestion even if she felt that she could have made changes that would improve her answer. YSL stated:

I read first, if I don’t understand, I’ll consult the teacher or friends to help me. In S.S., you need skills to do some of the source-based questions, so I’ll consult Mr Tay if I really cannot understand what he said in class, but it should be during exam period. If there is no test, I would not observe my work, when the test is near, then, I’ll do.

Calyn explained that she went to her teacher for help because of a lack of learning strategy. She noted: “No, because I don’t have a strategy, I don’t know how to monitor my own learning, but I feel that topic that I don’t understand, I will clarify with my teacher.” Calyn further commented that: “It is difficult to pick the important elements, most of the time, we think that everything is important.”

Likewise, when working on social studies activities, Elizabeth shared similar problem with Calyn which is they have difficulties in identifying main ideas, thus, they need help from their teacher to find out ways to approach dissimilar source work. Elizabeth pointed that she often has problems identifying key ideas from a source, thus, she copied and pasted chunk of information as answer without extracting main points. Elizabeth said that,

Firstly, there is a certain format like how to write the answer, but I did not even follow it at first, [the researcher asked: “When did you start to change?”]. This year I started, last year, I did not. My answer statement was not there, so for now, my answer statement is there but there is a new problem, according to her [referring to the social studies teacher], she said I’m giving too much information, chunk of evidence, because I just copy and paste.
Elizabeth continued by saying, “I approach those kinds of sources, I get very confused, I don’t understand anything so I just copy and paste.” As a result, Elizabeth turns to her teacher whenever she has problems with source analysis.

Next, these participants shared that they went to their teachers for help because of a lack of confidence with their work. Dani expressed that he asks for the teacher’s feedback because he did not trust himself. He said that: “If I get an exercise, I ask my teacher how I’m doing.” The researcher followed by asking him about his own perception concerning the quality of his work. Dani responded by saying, “Myself, I’m not good, I don’t really trust myself, I ask my teacher.”

Similar to Dani, Myra exhibited a lack of self-confidence with her own work. Myra explained that:

Definitely, I checked with my teacher, because I need another opinion, if I rely on myself, I won’t be on the right track. So I just approach my teachers, for any subjects, just ask him or her whether I’m on the right track, or ask them to clarify my doubts.

These help seekers illustrate that teachers’ assistance is key for their learning of social studies, however, it indicates that there is a need for them to become more aware of their learning and thinking patterns. For instance, to work with a range of challenging sources, it is necessary to find an approach that would help them to think further by formulating questions such as: What strategies could I use to approach this question? What are the main ideas in this source? Which is the best formula to apply in this type of question and why? By engaging in self-questioning, these participants may become more familiar with different question types, and better able to solve problems without the need to constantly seeking help from their teachers.
Independent learning. A small group of participants demonstrated that positive learning outcomes can be achieved by actively engaging in their learning experiences; and they use online resources as a tool for knowledge building.

In the beginning of the discussion, Kovan’s participation was brief with short responses without clear indications of his views on issues. As the discussion progressed, he elaborated his thoughts and shared his learning approaches. He indicated that he prefers to work on his own without peers or group collaboration. Although Kovan started the discussion with limited details, his participation gradually illuminated and enriched the understanding of the ways how an independent student can achieve high grades and become the top student in his class (based on information from his teacher). Kovan’ analysis of sources turned out to be the most thorough example; it demonstrates how a student works within the social studies context.

One of the remarkable differences between Kovan and other participants was his concentration on source evaluation. While reading a source, he engaged in rounds of self-questioning.

For me, I will find out the title to see if the source is a biased or non-biased source or… occurring before or after… I would think what is the purpose of giving this source…, I would think of the impact, the after effects for people. I would start thinking as an audience or the victim of this situation.

In addition, he would go through several steps when evaluating a source. Kovan stated that:
While I read, I’ll think of what I am supposed to learn. What is this source about, what it is trying to pinpoint the topic. Also…I’ll first find out what is this question, what is the question skills…read the title, and what is this source adapted from…

Compared to other participants who depended on their teachers for continuous assistance, Kovan showed that taking control of one’s learning is rewarding. Persistently, while going through sources, he asked relevant questions, evaluated the issues, and examined various possibilities before providing a well thought out answer based on systematic deduction.

Likewise, Caleb indicated that rather than seeking help from teachers, he prefers to understand the source work by himself, then, ask for the teacher’s clarification when necessary. Caleb shared that:

Sometime when we get a worksheet, we just try to finish it, so if I’m unable to do or know that I did not really understand, I’ll try to make time at home and cover what we did in class.

The researcher asked if he asked for teacher’s assistance, Caleb replied that: “Sometime if I seek help, I tend to forget it… at the end I don’t even understand, so, I just try to understand it myself better.”

To expand on Caleb’s thoughts, Jai elaborated more on the reasons why he did not understand his teacher’s explanations. Jai said that, “I really don’t ask anyone, If I ask Mr Mark. [his social studies teacher], he’ll give me a long explanation, which I really don’t understand.” Jai said that to help with his learning, he uses Google to search for past years’ examination questions, and revises them accordingly.
However, other participants commented that although through Google they were able to generate a large number of search results, they found that the process in selecting relevant from irrelevant information required substantial effort. Nevertheless, independent learners are willing to be actively engaged in their own learning without solely depending on their teachers.

The following table (Table 4-8) compares the differences between the help seeking and independent learners. The help seeking participants commonly indicated that they would consult their teachers, whereas the independent learners would find ways to help their understanding. The table shows that most participants preferred to seek help from their teachers and only a small number of participants are independent learners.

12 Table 4-8 Common learning approaches reported by help seeking and independent participants

<table>
<thead>
<tr>
<th>First School: Winter Land</th>
<th>Help Seeking Learners</th>
<th>Independent Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Group one)</td>
<td>“I’ll consult teacher or friends to help me.” , “so I’ll consult Mr Tan [the class teacher]…”</td>
<td></td>
</tr>
<tr>
<td>YSL</td>
<td>“That’s why usually I check with teachers what may or may not come out [in the exam], what they think may come out…”</td>
<td></td>
</tr>
<tr>
<td>JT</td>
<td></td>
<td>“Two to one month(s), then, I will make a priority time table.”</td>
</tr>
<tr>
<td>Jennifer Y</td>
<td></td>
<td>“I’ll read then think what am I supposed to learn…”</td>
</tr>
<tr>
<td>(Group two)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kovan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QQ</td>
<td>“Ask the teacher, revise note, go online to search for other details on that.”</td>
<td></td>
</tr>
<tr>
<td>Second School: Maya</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calyn</td>
<td>“…but I feel that topic that I don’t understand, I will clarify with my teacher.”</td>
<td></td>
</tr>
<tr>
<td>Elizabeth</td>
<td>“…Mrs Tay (the teacher) comes in and she helps me to understand the source…” , “…according to her (Mrs Tay)…I’m giving too much, chunk of evidence…”</td>
<td></td>
</tr>
</tbody>
</table>
Third School:
Bright Hill,
(Class A, Group One)

Ramon  “Can always ask your teacher…”, “Have them look through it…”, “Ask them how you can improve on that also.”

Dani  “…I ask my teacher how I’m doing.”, “Myself, I’m not good at…I don’t really trust myself…I ask my teacher.”

TH  “For me, I do my homework, they mark, I see which part is wrong, so, I use this to improve.”

(My Group two)

Myra  “Definitely, I checked with my teacher…if I rely on myself, I won’t be on the right track…so I just approach my teachers…”

Fai  “…teachers are going to understand that this person is doing well…teacher might have a focus on us…they’ll come to you and talk to you about grades. So, they’ll help us…”

(Class B, Group One)

KSH  “Just do exam papers, if I don’t understand, I ask my school teacher or tuition teacher.”

Oddie  “…I’ll check which type of question I don’t understand, then, I’ll ask the teacher.”

RT  “If you read through the notes, you don’t understand something, you ask the teacher.”

(Fourth School:
Aston (Class A)

“…”

Kym  “After all the summaries, teacher went through, teacher said this is important, I just write down…”

Fourth School:
Aston (Class A)

“…”

YT  “Usually I try, if I still don’t understand, I’ll ask my teacher.”

Jai  “I really don’t ask anyone, if I ask Mr Mark (his teacher), he’ll give me a long explanation, which I really don’t understand.”
Caleb

“Sometime if I seek help, I tend to forget it… at the end I don’t even understand, so, I just try to understand it myself better.”

LKM

“For me, if there is something I don’t understand, most of the time, I’ll go to my teachers get my facts right. Ask them how to do this, how this question works.

SY

“When you don’t understand a topic right, ask teacher for extra lesson, like after school.”

Niko

“…for me, yeah, ask the teacher first, see whether the teacher would accept what I’m doing, on how I’m trying to research for this area, this problem, for example.”

The following compares differences between the help seekers (HS) and independent learners (IL) exemplified by these participants: JT (HS) and Jennifer (IL); Ramon (HS) and Kovan (IL); and Fai (HS) and LKM (IL).

JT considered that help seeking from his social studies teacher is his main learning strategy. JT shared that he usually prepares a few days before the examinations. For revision, he asks the teachers for potential questions, he memorizes selected points based on his conversations with the teachers. JT shared that,

That is why usually I check with the teachers what may or may not come out, what they think may come out. Also, different topics have different amount of marks, this topic has more mark than the other, so I just memorize based on mark.

In comparison to JT, Jennifer Y approaches the preparation of examinations differently. She shared that one or two months before the examinations, she begins to plan on how she would prepare. She pointed out that the notes in history were usually thick with substantial information, thus, she would start her revision in advance by writing down ideas in her own words as a
strategy to be well prepared. In short, JT and Jennifer demonstrated two different learning
approaches in which the former prepared for examinations using help from teachers and
memorization, whereas the latter ensured that she has enough time for planning and studying.

Ramon feels that by doing homework and asking for the teacher’s help are sufficient to
prepare for social studies. For the most part, he consults his teacher for help on possible
examination questions, how to score, and how to improve his learning. Ramon said that:

Can always ask your teacher for more practice paper, do your work, and have them look
through it briefly to see if the formats are okay. Also, ask them how you can improve on
exam questions.

Similar to JT, Ramon’s response conveyed the message of a dependent learner who relied
on his teacher for assistance. His conception of learning differs significantly from an independent
learner who would take responsibility of his or her learning by actively engaging in learning. For
instance, Kovan takes charge of his own learning without relying upon his teacher. Kovan
regards the path to excel in learning social studies is to immerse fully in self-questioning as a
way to direct his own learning processes.

In comparison to Kovan, Ramon demonstrated an approach of learning in which he
prepares his answers in relation to what the teacher asked him to do whereas Kovan adopted a
learning approach that is more proactive in learning social studies. Ramon’s approach indicated
that he did not have a plan to learn, rather he was expecting the teacher to tell or show him how
to work on a topic. Kovan and Ramon demonstrated two learning approaches: active and passive,
which were common amongst participants. Kovan’s approach appears to be more beneficial for a
learner due to its positive learning outcomes. Ramon’s learning approach surfaces questions
about why participants prefer to depend on their teachers for instructions on how or what to do rather than being more actively engaged in their own learning.

Fai further pointed out why he thought that assistance from a teacher is crucial and beneficial for students’ learning by comparing two dissimilar variables: reflection and a teacher’s support. He reasoned that reflection is a time-consuming process, thus, it is ineffective for learning. He suggested that rather than having students to engage in reflection, it would be more efficient for teachers to guide students. In Fai’s view, the teachers’ help is sufficient for students, thus, it is unnecessary to practice reflection due to its prolonged engagement and time constraints since they also have other works to complete.

Fai’s comments indicated that he prefers to have a teacher to scaffold his learning throughout the learning progression. Fai stated that:

Reflection, in my opinion is not really good, you can go another way which is less consuming, basically what we do is every time we finish a chapter, we do have a test. What we learned, and understand, clearly going to show in our results, teachers are going to understand that this person is doing well, or not doing well, if we really aren’t doing well, teacher might have to focus on us. Sometime, they’ll come to you and talk to you about grades. So, they’ll help us, we don’t really need reflection, because it is time consuming, and at the pace we are going, we have to complete quite a lot right.

In view of the above responses, it would be helpful if some of the participants plan how they want to proceed with a subject in order to achieve their learning objectives. This means to set a learning goal, monitor and reflect on performance, and evaluate the appropriateness of selected strategies without solely depending on the teachers to give explicit directions on what
and how to do the works because there may be limitation to overly engaging in help seeking. However, many students appear to seek the teacher’s help as a more efficient means of getting “right answers” in their work.

LKM succinctly pointed out that although as students they could ask their teachers for help, they should not rely on them endlessly. He posted a question to his peer: “You can’t rely on teachers all the time, in Uni, can you rely on your lecturers? You need to Google and find out the answer.” LKM further remarked that:

I disagree with your way of doing it [referring to Niko’s help seeking approach], sometime your teachers don’t have much time, they have their personal life, or to prepare for an exam. So, it is not all the time that your teacher is free, so, you Google, or use the library.

In comparison, LKM illustrated an important factor of learning: willingness of a learner to take responsibility of his learning. LKM asserted that help seeking from the teacher is important, yet, at the same time, a learner needs to be able to resolve questions through other means such as using online resources and the library in the event that the teacher is not available to attend to all students. To attain knowledge, LKM engages in the process of highly active and adaptive learning.

**Memorization.** To learn social studies, all participants engage extensively in memorization but with varied objectives. Some engage through repeated practice of notes from teachers or their own, past years’ examination papers, and class exercises. They believe that social studies is a difficult subject requiring memorization of definitions, factual information, and content. Further, they engage in memorization with the intention of answering examination
questions rather than understanding social studies concepts and issues. In contrast, other participants with interest in social studies engage in memorization complemented by using various resources, preparing summaries for chapters, and regular practice. The following compares differences as demonstrated by participants who engaged in various memorization skills.

Before examinations, some of the participants engaged in memorization by hastily cramming the content. For instance, JT and YSL attempted to store a large amount of learning material by memorizing and hoping that they could retain all the information in order to answer the examination questions. After the completion of the examinations, they simply banish the information from their memories.

JT prefers to study for social studies right before the examinations; to him, it is the best approach as it allows him to retain memory of key content. For JT, the main reason to engage in memorization is to pass an exam. Although he finds memorization to be difficult, he continues to practice it. For him, last minute studying helps to retain memory of the content. JT shared that: “That is why I study last minute, so, I can keep the memory, but next day, after doing it (referring to memorization), I just forget.”

Likewise, YSL uses memorization to help her with examinations. YSL said that: “I don’t use any of the strategies, I would like memorize everything, maybe more than fifty percent, I can remember.”

However, after repeated rounds of cramming, memorizing, and forgetting, some of these participants seemed to lack motivation or interest; subsequently, they engaged in learning of social studies with little curiosity or sense of academic excitement.
Particularly, participants who have less interest in social studies prepared their examinations by engaging in rote learning. This means that they studied hastily by cramming the social studies’ content just weeks before the test. The following participants, KSH, Steven, and RT shared the similar approach of repeatedly practicing on exam papers, notes, or questions in order to retain information through repetition.

KSH mentioned that, “Just do exam papers, if I don’t understand, I ask my school teacher or tuition teacher.” Steven uses a similar approach and he indicated that, “Just do the questions, no strategy at all.” RT added that, “study a lot, I mean like just do what the teacher wants you to do. After that add up by revising more, understand what you do, I mean, make sure you are not lazy. If you are lazy, you won’t study or do your homework.” These students weren’t aware of or able to articulate their learning strategies, other than rote preparation for exams.

Through repeated practice and memorization, some of the participants may be able to provide ‘model’ answers that meet the needs of the examination questions. However, to help students to gain a wider perspective or better understanding of social studies issues, it would be essential for them to be aware of and apply self-regulated learning strategies to advance and improve their learning.

In contrast, participants who have shown interest in social studies engage in memorization as well but without cramming the content within a short time. Rather, they practice regularly by using different resources. Take Dave for instance, he uses sources obtained from various learning materials for regular practice. Dave shared that, “If I want to know about this topic, I just keep on practicing until I know how to do it. For S.S., I use assessment books, worksheets, or text books for practices.”
Dave’s engagement in repeated practice facilitated memorization of the content, which differs from other participants’ approach of cramming large amount of information before examinations. Dave organized his learning over a period of time and interspersed learning of social studies with sources gathered from various areas and not strictly from the textbook. In so doing, he gains memorization through repeated practices which eventually can yield long-term retention rather than memorizing a large amount of information within a short time frame.

Niko emphasizes on the importance of memorization, specifically, definitions in social studies. He focuses strictly on the textbook. Learning from his past experience on obtaining good grades through memorization, Niko has invested extra effort to ensure that he memorizes the definitions by paraphrasing them in his own words as a way to achieve high scores. Niko noted that: “I’m a textbook person. If the textbook has this source, I’ll make sure that I memorize and paraphrase it…”

To reinforce his memorization skills, regularly, Niko keeps detailed notes of his learning in a thick note book with key terms, definitions, or concepts that he deems important. In this way, he makes his study material richer and his learning more interconnected.

Niko helps himself to understand and recall through organizing information from various book chapters and writing them down. This process of writing down key concepts helps him to facilitate memory storage as well as retrieval when needed. Comparing repeatedly cramming information, reworking on workbooks to organizing unconnected concepts presented in different chapters by writing down key concepts in an organized manner, the latter certainly adds meaning, understanding, and clarity to the material.
In short, the participants engaged extensively in memorization which may not help the disinterested students to advance their understanding or comprehension in social studies. This finding points out the importance of assisting disinterested students by introducing them to ways to monitor their own learning rather than constantly engaging in rote learning. To motivate and improve students’ interest in learning social studies, scaffolding such as self-regulated learning is key as Liming et al (2006) state that rote memorization is the reason why students dislike social studies.

**Prior knowledge activation.** Students’ prior knowledge helps them connect out-of-classroom experiences to classroom activity. Prior knowledge indicates how the participants connect their knowledge learnt from different contexts to help with mapping out their understanding in order to complete the CWR activities. During source analysis, some participants thought about what they were reading and considering how the information linked with what they already know.

These students demonstrated more interest and positive views about learning social studies. To increase their understanding of social issues related to the globalized world, they read newspapers as a way to enhance their world views, in the process, they gain out-of-classroom knowledge, which eventually becomes prior knowledge.

Hillary tried to make sense of the globalization topic by linking it to her previous readings concerning Singapore economics from the Strait Times. She actively triggered her prior knowledge and synthesized new ideas and facts from the globalization activity for better understanding. Hillary noted that:
Since I read newspapers at home, under the opinion’s section, I like to read that part, so, I try to make sense of how S’pore was prospering, I brought some of my knowledge of what I learnt to the CWR, it helped a bit.

Another participant, QY commented that for social studies, she read newspapers to gain related information. Her father encourages her to read the section on politics because it not only provides updates on the political scene, but also helps to bridge the gap between learning in a classroom and in the real world. QY remarked that, “Pay more attention in class, do the homework. I read also, because my father subscribed to newspapers.”

QY found that she was able to use her prior knowledge in the area of politics gained from reading newspapers to help in the understanding of the CWR poverty activity. QY continued to add that, “The second source [referring to the CWR activity], what governments do to help with poverty. There is an article in newspaper which I don’t remember in details but it aims to help and increase the income of workers.” QY was establishing connection between what she read in the newspaper and her new knowledge gained from the CWR. QY’s prior knowledge was a useful tool for her to build new knowledge and make sense of learning new content.

Cindi commented that to be good in social studies, students are required to read widely and be informed about the background of a topic. Cindi went on to elaborate that, “You need to read a lot, know the background, more like read a lot more.” She shared joyfully that although she does not read specifically for social studies but for the English class, the knowledge of reading newspapers can be applied to social studies.

With the engagement of prior knowledge, these participants may be more motivated to learn social studies because they experience the benefits of applying what they have learnt from
informal contexts, such as home, to classrooms. Therefore, it is important to provide students with various interest levels in social studies to acquire new content knowledge for source work. For example, the CWR could be an educational tool to facilitate students’ development of prior knowledge by supporting their learning with online or animated video.

4.5. Finding 5: Planning increases students’ engagements in learning

Planning consists of two main categories: First, Planning. Second, Minimal planning. See table 4-9 for the two main categories with respective subcategories.

<table>
<thead>
<tr>
<th>Finding 5: Two categories with subcategories to answer RQ2</th>
</tr>
</thead>
<tbody>
<tr>
<td>First category:  Second category:</td>
</tr>
<tr>
<td>Planning       Minimal planning</td>
</tr>
</tbody>
</table>
| **Subcategories:**                                     **Subcategories:**
| i) Goal setting                                       i) Lack of determination to follow through planning |
| ii) Have a plan of work                                 ii) Provide limited examples on task analysis |
| iii) Revise past years’ examination papers.              iii) Unclear with formulas |

**Planning.** Planning is a set of mental and behavioral operations that bring together cognitive, emotional, and motivational resources in the service of reaching desired goals.
(Hacker, 1998). The learner engages in planning by assessing the learning content and selecting appropriate strategies to work within the learning context.

The participants indicated that they engage in planning for the purpose of achieving positive learning outcomes in social studies. To achieve their goals, they actively participate in planning strategies through different approaches such as: 1) goal setting; 2) have a plan of work; and 3) revise past years’ examination papers.

Consistently, these participants are more capable to provide and elaborate in more details the ways they would engage in their planning processes. Furthermore, they adhere to planning as a regular routine of constant practice rather than just before examinations. Planning is one of the fundamental SRL skills for a student’s performance as it indicates self-initiated actions to complete an activity by focusing on task engagements and goal achievements.

**Goal setting.** Jennifer has an efficient planning strategy; she allocates time for revision or completion of work. She demonstrated planning abilities by using a priority timetable to prepare for examinations. Jennifer reported that she usually starts to push herself to work harder one or two months before the tests’ dates. In her priority timetable, she annotates the way she would manage her time to focus on all different subjects, including social studies. Jennifer’s goal is to excel on the examinations by using the planning strategy. Her priority timetable enables her to plan schedules; identify tasks to be completed; and carry out the preparation in order to meet goals. Jennifer noted that, "Two to one month [before exams], I will make a priority time table."

As a result, she becomes more organized in her studies, which in turn enables her to experience less stress during examination preparation, and subsequently feel more confident
about her performance. During the discussion, Jennifer exhibited a sense of confidence in her plan of action.

*Have a plan of work.* Three participants from three different schools - Kovan (from Winter Land Secondary School), CT (from Maya Secondary School), and Caleb (from Aston Secondary School) - shared similar plans for working with sources. For instance, they focus on source analysis by establishing linkages and cross-referencing in order to create broader perspectives of social issues drawing from various resources.

Similar to Jennifer, these participants actively participate in their learning by depicting specificity in their ‘plan of work’. Their planning strategies illustrate task commitment which in turn enhanced their engagement and performance.

Kovan engages in cross-referencing sources. His plan is to check whether the source he is analysing is supported or disagreed by other sources. By juxtaposing one source with another, Kovan looks for similarities or differences among them in relation to a topic.

Kovan exemplified the benefit of using a plan of work for analyzing and understanding difficult sources. He explained that, first he creates a plan to find out what the question wanted him to do; then he locates the source(s) that would help him answer the question; and finally, he double-checks one source with another, and looks for one or two other sources related to the similar issues. After going through the plan of cross-referencing sources, he would then provide an answer or arrive at the conclusion based on his initial plan. Kovan highlighted that,

I would see the questions…and [which source I need to study to answer the question], like for question one, study source A, question two, study source B. Then, I will go to each source, read the background information first about the source that I am going to
analyze. For example, A don’t like B, then, B don’t like A, why is that so, then, I go back to all the information in the background, to understand. For the cartoon, I look at the text, what is this source trying to tell me, and go back to the question again.

The specificity of Kovan’s plan reflects his awareness of knowing what needs to be identified and how it can be determined in order to score points. Briefly, Kovan uses an action plan as a guide to enhance his learning and performance while engaging in source analysis.

CT shared her plan of work by giving an example of how she engages in text-based source analysis. To understand a source, CT’s plan of work is to engage in a sequence of steps such as taking notes while reading in order to comprehend and develop understanding. While reading a source, she writes down short notes and highlights key points from various sections. At the same time, she engages in self-questioning as an approach to make sense, generate, and answer questions from reading. Gradually, she establishes an overall view of the source by linking all the key points as interrelated components depicting the foci of the reading. CT went on to say that,

I’ll take down notes when I read all the texts, or when I am inferring sources, or I’ll make side notes, and I’ll link back to what is asked, the main topic. If I know what the main topic is, I’ll ask myself why this is drawn, or why it is portrayed like this, slowly, I’ll be able to link all ideas together, and form what I have to know, and need to know.

By having a plan of work, CT learns effectively to manage both time and effort while avoiding demotivation due to learning without a strong focus.

Caleb’s plan of work consists of: 1) read the questions; 2) analyse a source; and 3) link the source to other sources. After reading a question, Caleb focuses on source analysis by finding
the key, relevant, and pertinent points. To make sense and provide supportive evidence for his answer, Caleb refers back to what he has learned from social studies classes to establish linkages and provide relevant information. Caleb noted that:

For me, I usually read the question, find relevant key points from the source, most of the sources would be irrelevant to divert you from the key point, so I’ll highlight the key point, and I’ll go back to the source to look for more relevant ideas to add up, to support my answer.

Caleb further elaborated by saying that,

I usually analyse the source, and try to make links, basically the sources are there to test you on your understanding on the topic, so I’ll link the topic to the source, then, I’ll read the question. I’ll try to link extra information I know to back up my answer.

Eventually, Caleb explained how he tried to establish linkages of sources through class learning:

I’ll read the source and then relate it to what I have learned in class because usually that is the point of the test, and try to answer the question. I use what I have learned in the class, relate it to answer the question.

Caleb’s plan of work consists of linking the source to additional information he has learned from other classes to create a broader perspective drawing from different resources. Essentially, his plan is to establish linkages from other sources he read in classes in order to provide a richer understanding of the activity.
In addition to the above participants, Niko is one of the few participants who can clearly illustrate his plan of work when undertaking an activity. He firmly believes that to study efficiently, it is important to plan, organize, and make sure that precious time is not wasted. To this participant, time is a significant factor in his learning. He described that his plan to accomplish a task begins by finding out the objective and the available resources. Niko reported the necessary steps required when completing a question. Niko remarked that:

First thing is to plan out what is the objective, what am I supposed to do, then, plan out what resources I have to accomplish the task so that I can proceed it to finishing, and making sure that I can complete this task with whatever resources I have to complete it.

He further elaborated how he would approach a source by describing the necessary steps involved when embarking on the analysis. Niko listed a step-by-step procedure: analysing the source; using the PEEL format to identify key points from the source; supporting the answers with strong evidence or substantial points. Niko delineated that:

For me, first thing when I get a source, read through it, analyse, using PEEL method, find the point, quote evidence, come to a conclusion, and make a summary out of it. Whatever I read, I understand it clearly, so that I answer the question with the right points.

To Niko, the PEEL formula is effective for both teachers and students; and it can be used in History, English, and Literature. He went on to say that:

Effective yes, it [refers to PEEL] helps both teachers and students to relate to same points so that the teacher can see the point has been made clearly, and the evidence supports the points so that the teacher knows that the student understands what he has read or understand.
Niko demonstrates that when it comes to learning social studies, he certainly does not ‘cut corners’. His engagement suggests that he has a positive regard for the subject matter, treats the course content as something worthy of taking his time to understand, maintain feelings of interest, challenge, and importance (Howie & Bagnall, 2012).

*Revise past years’ examination papers.* To prepare for GCE ‘O’ levels, some students mentioned that they would revise past years’ examination papers. Take Elizabeth for example, she departed from her carefree attitude in Secondary three and adopted the plan of focusing on hard work using the ten years’ series (booklets designed to support students’ exam preparations). To reach her future goal of becoming a Poly student, she attends more tuition lessons; seeks regular help from her school teachers, and concentrates on homework. She considered the ten years’ series to be beneficial for updating her knowledge, in addition to the use of different formulas. Elizabeth noted that:

As for me, I think you might have guessed, I’m not a hardworking, not exactly very hardworking, for now, I have a very limited period of time, is now or never, so, I’m basically concentrated on the ten years series, my past papers, and my content is not exactly there, but I’m at the same time, going through my content with my ten years series, so I feel that that is very helpful to do the ten years series, especially when you are constantly updating the content right, I tend to remember more so I feel that is a good strategy to study, I guess.

Elizabeth’s plan of revising her social studies content for GCE ‘O’ levels benefitted her learning. To her, having a basic plan towards a goal is essential to gain better understanding when working with sources.
From different schools, the participants who indicated planning shared a common characteristic; they are able to provide clear planning strategies with specific details explaining the approaches they would take when engaging in source analysis or examination preparation. These participants adhere to planning as a routine to direct their attention and effort during the learning process in order to attain positive outcomes. They indicate that to follow through their plan of work, it is necessary to put in constant effort and thereby facilitate determination and dedication to carry out the intended action.

**Minimal planning.** In contrast to those in planning, the participants in minimal planning show divided views in their approach for learning social studies. Some clearly indicated that they have limited interest for learning the subject and thus consider that planning is non-essential whereas others have a plan of work in place but lack determination to follow it through.

Some of these participants do not incorporate planning as part of their regular learning repertoire except one or two weeks before examinations. Further, as much as they acknowledged engagement in some form of planning, they are unable to provide concrete examples of how it is organized, conducted, or established. Under this section, the findings point to: 1) lack of determination to follow through planning; 2) provide limited examples on task analysis; and 3) unclear with formulas.

**Lack of determination to follow through planning.** In contrast to those in the planning group, participants in this group demonstrated a lack of determination in advancing their plan. JT did not have a clear learning plan; his plan did not work the way he expected, and he was not determined enough to follow it through. JT explained that, “I don’t really plan because whatever I plan doesn’t really work out, so I just do whatever I can.” Without drafting a learning plan or having an interest in social studies, JT frequently procrastinated in his studies. JT went on to say
that: “Not really [again referring to not having a learning plan] most of the time, when it comes to studying, I'm just slacking off; either, I fall asleep half way, or I just stop there.”

The following participants reported to have a plan, yet, they fail to describe in details how their learning is organized or the plan would be achieved.

QQ and AL indicated that they had a learning plan for regular practice, revision, or homework, however, they were unable to follow it through due to a lack of determination. QQ’s daily learning plan takes place from 7 pm to 9 pm, Monday to Friday except weekends. During these times, he engages in subjects’ revisions. QQ said that: “…I usually study at 7 to 9 pm every day except weekends.” As for AL, she has a learning plan from 8 to 10 or 11 pm daily; however, she admitted that she was not focusing on getting work done, rather she was spending time on games and handphone.

*Provide limited examples on task analysis.* These participants indicated minimal planning because they provide limited examples on task analysis. According to them, after reading a question, they look for the answer in the provided source without elaborating or explaining how they would approach the task either by applying a formula(s) or by other means. Fai commented that:

> According to the source, we just read the question first before we even read the source. When we read the questions, we pretty much know what they are asking for, they highlighted the parts we need to answer, so when you read a source, you scan through, it is automatically highlighted in my mind.

Myra shared that:
Similar to what he [refers to Fai] said, once I read the question, I have an idea of what I’m looking for, and then, when I read the passage or the source, my mind kind of clicks, this is the point I’m looking for, maybe I can put it in my answer. So, before reading the source, I think reading the question helps.

Other participants indicated that students’ differences in task analysis can be due to reasons such as interest level in learning social studies. These participants with their less than positive perceptions of social studies might affect the way they plan, approach, and learn the subject. As a result, they showed limited enthusiasm when sharing their learning in social studies. To change the group dynamic and have them sharing more about planning, the researcher asked them about their future plan after GCE ‘O’ levels. Due to a change of topic, they shared with a sense of excitement because they look forward to be admitted to a local Polytechnic.

The responses of the less enthusiastic participants are as follows: RT, KSH, and Steven stated that they work with minimal planning. When they were asked if they worked with a plan in social studies, RT responded by saying that: “Just follow the activity, without a plan.” KSH stated that: “I don’t study SS, I just listen in the class.” Steven went on to add that: “For S.S., I don’t study as well. Most of them are common sense.”

This section elaborates on those who asserted positive viewpoints about planning in order to reach their goals, yet often did not follow through in social studies. To capture their attention, the researcher tried to gather a sense of their planning engagement in contexts other than social studies. To prepare for Poly admission, RT set aside time for daily revision and more practice at home. RT shared that:
Set aside time to study, read notes, in class is like things go by very fast. At home, go at your own pace, I think the papers that the school give is enough already, unless you don’t understand then you practice some more at home.

KSH proposed that: “Just do exam papers, if I don’t understand, I ask my school teacher or tuition teacher.” Steven responded by adding that: “Just do the questions, no strategy at all.”

Essentially, all of them pointed out that to reach their goals they have to practice more, keep up with homework, and revise examination papers. These participants firmly believed that by working hard in subjects such as Maths, English, or Biology, they stand a chance to achieve their goals. Surprisingly, none of them stated that they would apply these efforts for social studies. In short, based on these participants’ sharings, they do not seem to have a plan of work for social studies.

Some disinterested participants consider social studies unimportant; their perceptions lead to diminish attention of social studies as a serious, worthwhile, or valuable subject area. Their less than positive perceptions of social studies might affect the ways they plan, approach, and learn the subject. Some of them regard social studies to be boring; their negative perceptions could very well affect their learning behaviour and outcomes. Knowing the participants’ views towards social studies is important particularly for the implementation of an educational program such as the CWR.

However, regardless of the low level of attention these participants might give to social studies when working with paper-based source, they demonstrated different levels of learning enthusiasm when navigating the online-video and comic sources. Technology integration such as the CWR in social studies classrooms could be used as a functional tool for those participants.
with minimal planning and less interest as a way to engage them in participating more actively and effectively in the learning process.

More participants indicated that learning social studies requires less planning. They provided information when asked about planning but they were unable to give examples or details on how planning can be conducted.

Rimi explained that: “No, is not that complicated. For S.S., a task in class, not much of planning, just do it on the spot. There is this format that we follow, for i.e., VAMAO.”

Nelly said: “I just see how the lesson goes, and plan accordingly.” When the researcher prompted for more information concerning her planning, Nelly responded by saying that: “May be just see the structure, the program, how it goes about, basically is on the sport, we can’t plan also. Basically, how it is presented and to use it.”

CK compared social studies to English composition and confirmed that no planning is required for the former. CK brought up a reasonable comparison between the two subjects but he may be unaware of the importance of planning being involved in writing for social studies. In English composition, there are many creative ways to write using different templates or a basic structure: introduction, problem, resolution, and conclusion. Correspondingly, for social studies, there are different formulas available to write and elaborate answers. Nevertheless, CK’s misconception about no planning is necessary for social studies reflected the majority of the participants’ views.

Unclear with formulas. Ramon who reported no planning demonstrates misconceptions about learning social studies, specifically, during task analysis. He demonstrated a lack of understanding in applying formulas when answering questions. To him, the two formulas, PEEL
and 3A are similar, he does not know the distinction between the two formulas; also when and how to use them, yet he continues to work with the misconception without clarifying with the teacher or classmates.

A comparison of participants in minimal planning and planning shows that they are using a similar approach: identification of the question types followed by searching for appropriate answers. However, there is a difference between these two groups. Those in the minimal planning have difficulties explaining how to apply the formulas to help in answering a question; whereas those in the planning group can explain how to use the formulas for elaboration and evidence. These differences were noticeable among different schools.

The above differences were observed on the following participants: Ramon (indicates minimal planning) and TH (demonstrates planning); both shared opposing views on the ways the formulas can be applied when answering a question. Ramon suggested using only one type of formula because all formulas are identical. TH recommended using different types of formulas. His approach is to use the PEEL formula by complementing it with the 3A formula within its first part.

Ramon started by saying that: “Just go through the activity, without any plan.” He went on to say that: “There are [referring to the formulas] very similar, if you know one, you know another. Is just changing a few keywords.” He continued to say that: “Same as everyone else, I use the same format depends on the questions, it is safer, if we use other formats, we might lose out certain marks.”

Another example on planning differences between the two groups is offered by SY (indicates minimal planning) and Niko (indicates planning). The former stated that he usually
works without a plan. SY shared that: “I don’t usually plan, I just start.” However, he gradually changed his stance after listening to Niko, SY added his view positively by relating back to one of his previous teachers from whom he learned how to plan by using a timetable. SY enthusiastically shared that,

I agree with him [referring to Niko], you can make a plan for a timetable, in the past a teacher gave us a timetable for planning. For example, within a week, how many subjects and time to study. For a difficult subject, may be study three times a week, for an easier subject, once a week. That [refers to the time table] is really very helpful.

However, the contrast between Niko and SY is that Niko adheres to planning as a routine; he uses a notebook to keep track of definitions, main points from different chapters, and flashcards to help memorization of key conceptual ideas. Essentially, Niko incorporated planning as a guide to work towards his achievements. In comparison, planning was not a part of SY learning repertoire; he was not using planning as a strategy to achieve a goal or attain positive learning outcomes; or to analyse sources in a step-by-step sequence; or to regularly prepare notes from different textbook chapters.

More importantly, these two participants demonstrated two distinct planning patterns: Permanent planning versus ephemeral planning. Niko embraces planning as a habitual activity throughout his learning endeavour while SY was thinking more in terms of using planning before the examinations. Being one of the top five students in the social studies class, Niko exemplified that planning requires dedicated mind-set, constant effort, and committed engagements in order to excel in learning and performing.

This finding involves two main categories: Monitoring, and minimal monitoring. The participants in the former group provided concrete monitoring examples such as self-questioning. In contrast, the latter group indicated that they might not know how to ask effective questions during source analysis, thus, they regularly engaged in help seeking behaviors.

See the following table (Table 4-10) for the two categories and subcategories.

<table>
<thead>
<tr>
<th>Research question Two (RQ2):</th>
<th>Finding 6: Two categories with subcategories to answer RQ2</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the SRL strategies used by Secondary Social Students?</td>
<td><strong>First category:</strong> Monitoring</td>
</tr>
<tr>
<td></td>
<td>i) Self-questioning</td>
</tr>
<tr>
<td></td>
<td>ii) Writing notes</td>
</tr>
<tr>
<td></td>
<td>iii) Using Online resources</td>
</tr>
<tr>
<td></td>
<td>iv) Combination of monitoring skills</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Monitoring. The participants who demonstrated monitoring indicated that they apply monitoring effort as a way to keep track of their academic performance. Some pointed out a few types of monitoring skills such as: engaging self-questioning; writing notes; and searching for online resources. Other used a combination of monitoring skills such as note-taking, consulting friends, and checking with the teacher when necessary. These participants demonstrated that monitoring entails active learning and extra time and effort in order to excel in social studies.

Self-questioning. Self-questioning requires students to monitor their own reading comprehension by asking themselves a series of self-generated questions or teacher’s questions. Self-questioning serves to check responses in relation to questions and to examine source features such as title, purpose, and background information.

To keep track of her academic performance and meet her outcome goals, Jennifer engages in self-questioning to support the source analysis process. She asks questions concerning her understanding of a source and her responses in relation to a question. She commented that,

I’ll question myself if the teacher reads my source answer, will she ask for more, is it enough? I will ask other questions such as would she [refers to the teacher] ask: ‘Why did the person say this? Why did you write this?’ Also, I'll ask myself whether the answer is detailed enough, or does it answer the question?

Jennifer’s sharing shows that she has internalized the kind of questions the teacher would ask in a class, and she uses similar types of questions as part of her own self-questioning strategy.
While reading a source, Kovan checks the following source features: title, purpose, impact, biasness, and intended audience. He uses these features to guide his monitoring and to enhance his understanding of the concepts presented in the sources. These source features help him to focus his attention on what to look for in a source. The researcher probed for further explanation about the importance of considering or questioning source features. Kovan pointed out that by checking the biasness of a source; he is able to decide how to better answer the question. He uses monitoring for his learning processes and to modify learning strategies for improvement. Kovan elaborated by saying that,

Because it (referring to the source feature) tells you what is this source meant to be, whether it is biased or not, or could I use purpose skills to answer this question? If I cannot use biased and purpose skills to answer, could I use simple inference to answer?

Kovan uses the source features as context clues so that he could actively engage in self-questioning to aid his comprehension of the various concepts presented in the sources. Both Jennifer and Kovan use self-questioning to maintain their focus by probing and identifying incomplete information or clarifying understanding with novel concepts presented in diverse types of social studies sources. At the same time, the source analysis process enables them to check and assess their work for further improvement. These participants exemplify active learners who use monitoring strategies to advance their learning at different levels of source analysis.

Writing notes. Kym and Cindi shared that they write down notes to monitor, retain, and recall what they learn in class. Kym finds note-taking to be effective due to the fact that the process of writing down important information is useful to retain key ideas to be applied later.
Kym stated that, “For all my subjects, I prepare notes, because when I write, I tend to remember, so for most of my subjects, I tend to write down notes.”

In agreement with Kym, Cindi expressed that she tends to be forgetful, so note-taking is indispensable for her learning since the process assists her in retaining and recalling information. Moreover, regularly, she creates flashcards, based on her notes, to test her knowledge by asking herself questions on related issues as a way to maintain engagement. Cindi went on to say that,

For me, I take notes; I’m a forgetful person, so I must take notes on what the teacher said. I use flashcard, I just ask myself questions, and the answers will be at the back. I do these for subjects [referring to maths or food and nutrition] that have heavy content to memorize. Other than that, I just practice a lot.

To monitor her learning, Kym uses note-taking across all subjects. Cindi monitors her learning by using note-taking, flashcard, and self-questions. These participants are different from the minimal monitoring students in that they invest great effort and time in their regular work. Essentially, they work independently without constantly depending on the social studies teacher for help.

Using Online resources. Some of the participants indicated how learning can be done differently in a digital age. Technology offers additional information to easily manage reading, writing, and learning in diverse ways. To these participants, the internet acts as a major generator of information; they efficiently conduct online searches and obtain information from various sources relevant to the content they are studying. Jai and LKM exemplify participants who are frequent computer-users and how they tend to welcome technology implementation for educational purposes.
To monitor his learning, Jai uses the internet to find questions related to history and social studies for practice purposes. The internet provides Jai the opportunity to access and acquire a wealth of information. Through this medium, Jai can freely select various relevant sources and be updated with most recent content. He was delighted when sharing the benefits of using the internet to access a vast number of constantly updated resources and information. Jai shared his excitement by noting that, “I gave myself random questions regarding the topics then try to answer.” The researcher asked how he formulated these random questions. He replied by saying that, “Singapore Secondary three history questions, [the internet] actually gives.” As students are accustomed to taking exams, one way they monitor their understanding is by looking for online examination questions.

LKM stated that he uses the internet to test his understanding of a topic. LKM remarked that Google and YouTube are beneficial for learning about different subjects, particularly, educational videos introduce learners to various complex concepts. LKM stated that:

To test my understanding of a topic, I’ll Google for test that will help to test your own understanding. For example, for poverty, I’ll Google for such a test, or maybe multiple-choice questions. I also look at the mark to see how much I need in order to get a full mark.

Both Jai and LKM use online resources to test their knowledge in social studies and other subjects. Compared to re-reading, self-testing could be a more beneficial monitoring strategy to enhance learning outcomes because it requires the student to actively think of the answers.
Combination of monitoring skills. The following participants reported the use of a combination of monitoring effort for learning. Although some of them commented that they do not engage in monitoring strategy, they elaborated monitoring approaches to learn social studies.

CT said that she does not monitor her learning but she was able to articulate a few learning strategies such as homework completion and teacher’s feedback as part of her monitoring effort. To CT, homework is a way of assessing her current knowledge before examinations and it helps to reinforce content knowledge. At the same time, she regards the teacher’s feedback as a reinforcer to avoid further mistakes by identifying the areas of error. According to CT, this monitoring process assists her to apply the gained knowledge in assignments and to become more aware of her limitations. CT stated that:

I don’t monitor my learning because it is important for me to know what I know and what I don’t know so that I can clarify if there is need. Especially when doing homework, by doing it, you get exposed to it. So, you ask yourself can you handle these kinds of questions. By doing your homework, and how you answer your questions, is already a part of monitoring your learning, also, when your teacher gave you feedback, is also part of monitoring.

CT’s responses indicated the importance of using homework, the teacher’s feedback, and self-questioning to monitor learning. The accumulated effort invested in doing homework plus the teacher’s feedback enables CT to become more aware of the areas she does not know or comprehend. As a result, she could focus more effort in developing areas that need more attention and improvement. CT continued to note that,
After what the teacher tells me, I would look back at what I actually had written as answers, by that, I would see what are the missing parts for me not to get the mark. From there, I would slowly apply to next few exercises that I have to do.

CT uses a few types of monitoring strategies such as homework completion, self-questioning, and help seeking from the teacher.

Similar to CT, Calyn stated that she does not engage in a monitoring process because she does not have a strategy, furthermore, she is not aware of how she could monitor her learning. Since she is working without a strategy, Calyn tends to seek help from her teacher. Calyn explained that: “No, because I don’t have a strategy, I don’t know how to monitor my own learning, but I feel that topic that I don’t understand, I will clarify with my teacher.”

To further understand Calyn’s monitoring strategy, the researcher prompted her for more information in regards to self-questioning. Calyn responded that she is a visual learner; she prefers diagrams such as a mind map depicting a structure with branches of connecting ideas representing different relationships and processes. Calyn uses help-seeking and mind maps to monitor her learning. Calyn noted that:

Because I’m a visual person, I like to draw diagrams, like for theory-based subjects, for i.e., bio, they taught us this tree diagram, is like a mind map. Yeah, it helps me a lot, like when you think of the key words, you can think back to the entire topic, i.e., key words, iron, oh, what is the uses of iron, diagrams are very helpful.

She further confirmed that she uses the mind map diagram with social studies because it is a theory-based subject. Calyn: “Oh yeah, for theory-based.”
Both CT and Calyn commented that they do not engage in monitoring strategy, however, through their sharings, they provided detailed monitoring approaches for learning. Also, they illuminated the distinctions between monitoring and minimal monitoring participants in that the former provided more concrete examples whereas the latter often gave unclear examples.

AL provided detailed examples of how she monitors her learning. To monitor progress towards a goal such as to complete a question, she first checks her answers, then verifies that supportive evidences are included by comparing the background information with her answers. This is followed by ensuring that the provided answers are in alignment with the questions. AL stated:

I’ll first read through my answers, what are the things I write there, is there any supporting evidence from the source itself, making it relevant and answering the question. That is what I’ll do, then, next, I’ll check the background information, see if there is information almost similar to the one in mine, because the background information provides all the necessary information, you’ll need to answer the question, yeah. Then, you’ll just check whether your answer is relevant to the question, that is what I usually work.

As for AL, she monitors her point of view when reading a difficult source. For instance, she adopts a different perspective with a challenging source. AL indicated that she is aware that when learning complex issues, it is essential to adopt multiple perspectives in order to arrive at a conclusive answer. By exploring the learning content from a different perspective, she benefits and becomes more comfortable when learning a tough topic area. AL went on to share that,
So, let’s just say that I don’t know this question and then I try to go back to the source, first thing I’ll do is that I’ll change my point of view, maybe my current point of view is not correct, which is why I was not able to understand the source, so if I would to look at it from a different light, maybe I would be able to see the source, what is the meaning behind it.

AL also engages in self-questioning to monitor her performance in social studies. She uses grades taken from different periods of her learning to check for differences. By using this approach of monitoring her learning across different terms, AL becomes aware of her strengths and difficulties on what she needs to work or plan for the rest of the term, including the necessary adjustments to succeed during examinations. AL said that: “I’ll look into my results, for i.e., early this year, test papers, I compared the differences in marks, why is there like huge difference in mark, why? Is it because of my knowledge or strategy? From there, I analysed.”

AL monitors her learning by checking through her answers with a few careful steps. She tries to adopt a different perspective when the questions are difficult to understand, also, she engages in self-questioning as a monitoring approach. AL indicated that she is aware of the different approaches she could apply when faced with challenging questions. Notably, she demonstrates that participants who are more aware of their learning progress may be more willing to apply effort or strategy to improve their performance.

Similarly, Niko monitors his learning through several steps: note-taking, consulting friends, and asking the teacher for help. Niko keeps a thick notebook for all the key concepts from different chapters. He uses flashcards to monitor his understanding on related ideas. To verify the accuracy of information recorded in the notebook, he checks with his friends and makes comparison between their notes. He then adds missing information in the notebook to get
a richer perspective before further checking with his teacher for the purpose of meeting the teacher’s expectations and requirements. Niko shared that:

First thing is to check my own notes, and sources, to check whether what I have written is legible for the source requirement. Secondly, check with friends, see what they have written, then you compound what they have written and you give percentage of the probability of you getting it correct, and the knowledge that it is relevant to what you have done.

He further elaborated that:

Yes, it is important to check with the teacher too and not only with your friends, because if you check with your friends only you may fail with your friends, so it is best to check with your teacher and your friends together, so you can get a full understanding of what the teacher requirement and paper requirement.

Similar with the above participants, Niko indicated that to attain positive learning outcomes, he needs to be constantly and actively monitoring his learning in areas of note-taking, peer learning, and help seeking from the teacher. Through constant monitoring, Niko improves his learning by identifying knowledge gaps or missing information, in the process, he fills in the gaps with understanding gathered from multiple views. In conclusion, Niko is aware that by monitoring his learning progress, he could attain better performing outcomes, and excel in social studies.

**Minimal monitoring.** The participants in this group indicated lower levels of engagement in self-questioning during source analysis, therefore, they partake in repeatedly re-reading in order to gain understanding. They reported the following during learning: 1) checking
with the teachers; 2) limited self-questioning; 3) using grade as a reference of performance; 4) revising, practicing more and doing homework without fully understanding the purpose; and 5) being unclear with formulas. These participants indicated that they engage less actively in their learning, thus, the report on note-taking, reading from online resources, and evaluating one’s understanding are much lower in frequency among them.

Checking with the teachers. Several participants reported that they work without monitoring, hence, they depend on their teacher’s regular verbal feedback to keep track of their ongoing progress. Ramon indicated that he relies on his teacher’s assistance and feedback to monitor his learning of social studies. Ramon stated that: “Personally, I don’t do that, [referring to monitoring engagement] and I don’t ask teachers for sources, I feel that just the homework is enough.” Ramon continued saying: “Ask the teacher, just do homework.”

Oddie and QY reported that to monitor their learning progress, they need the teachers’ assistance. Oddie shared that: “In one topic where are the different types of formulas, what they’ll ask, I’ll check which type of questions I don’t understand, then, I’ll ask the teacher.”

These participants provided minimal responses, mostly one short sentence or a few words indicating limited ideas of how they would monitor their learning. Commonly, participants from the minimal monitoring group reported checking with their teachers as a form of monitoring their learning. In contrast, participants in the monitoring group reported different types of monitoring strategies, and seeking teacher’s help is not as frequently mentioned. In comparison to the monitoring group, the minimal monitoring participants report fewer use of monitoring strategies.

The following table (Table 4-11) depicts the differences between the two groups of participants.
### Table 4-11. Monitoring versus Minimal Monitoring

<table>
<thead>
<tr>
<th>First School: Winter Land (Group one)</th>
<th>Monitoring</th>
<th>Minimal Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>JYL</td>
<td>“I’ll consult teacher or friends to help me.”, “so I’ll consult Mr Tan [the teacher]…”</td>
<td>“That’s why usually I check with teachers what may or may not come out [in the exam], what they think may come out…”</td>
</tr>
<tr>
<td>JT</td>
<td>“I’ll consult teacher or friends to help me.”, “so I’ll consult Mr Tan [the teacher]…”</td>
<td>“That’s why usually I check with teachers what may or may not come out [in the exam], what they think may come out…”</td>
</tr>
</tbody>
</table>

| Jennifer Y                           | “I’ll question myself if teacher read my source, will she ask some more from this, is it enough? I will ask like, if I write a sentence, would she ask: ‘Why did the person say this? Why did you write this?’ I’ll ask myself if what is done is detailed enough. Does it answer the question?” | |
| (Group two) Kovan                    | “Because it tells you what is this source meant to be then what this source is biased or not, or I can use purpose skill to answer this question, or is it just, I cannot use biased and purpose to answer, I can only use simple inference to answer.” | |
| AL                                   | “I’ll look into my results, for i.e., early this year, test papers, I compared the differences in marks, why is there like huge difference in mark, why…is it because of my knowledge…or strategy that I may be changed. From there, I analysed.” | |

<table>
<thead>
<tr>
<th>Second School: May (Group one)</th>
<th>Monitoring</th>
<th>Minimal Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elizabeth</td>
<td>“…you get exposed to it. So, you ask yourself can you handle these kinds of questions. By doing your homework, and how you answer your questions, is already a part of monitoring your learning…”</td>
<td>“…Mrs Tay (the teacher) comes in and she helps me to understand the source…”, “…according to her (Mrs Tay)...I’m giving too much, chunk of evidence…”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third School: Bright Hill, (Class A, Group One)</th>
<th>Monitoring</th>
<th>Minimal Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dani</td>
<td>“Can always ask your teacher…”, “Have them look through it…”, “Ask them how you can improve on that also.”</td>
<td>“…I ask my teacher how I’m doing.”, “Myself, I’m not good at…I don’t really trust myself…I ask my teacher.”</td>
</tr>
<tr>
<td>HX (Group two)</td>
<td>“If I don’t understand, I redo the homework.”</td>
<td></td>
</tr>
<tr>
<td>Myra</td>
<td>“Definitely, I checked with my teacher…if I rely on myself, I won’t be on the right track…so I just approach my teachers…”</td>
<td>“…teachers are going to understand that this person is doing well…teacher might have a focus on us…they’ll come to you and talk to you about grades. So, they’ll help us…”</td>
</tr>
<tr>
<td>Fai</td>
<td>“Just do exam papers, if I don’t understand, I ask my school teacher or tuition teacher.”</td>
<td></td>
</tr>
<tr>
<td>(Class B, Group One)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KSH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The distinctions between the two groups illustrate how the participants in the monitoring group apply various monitoring skills such as self-questioning, writing notes, and using online resources to expand their knowledge on the subject. They provided more concrete monitoring examples with details describing how they keep track of their learning. In contrast, those in the minimal monitoring group ask fewer questions and frequently delve in repeatedly re-reading for understanding. Since they may not know how to ask effective questions while working with different sources, they constantly need the teachers’ help.

The above comparisons raise questions as to whether participants in the minimal monitoring group need the teachers’ help for immediate solutions to the questions; to find out what to focus on for examinations; or to learn how to complete a task without taking the time to understand it.
Limited self-questioning. In the minimal monitoring group, some participants indicated that they do not know how to ask the effective questions, thus, they engage in minimal self-questioning. For instance, when it comes to monitoring her learning, NY indicated that she would ask herself whether the written answer is clear, other than that, she does not engage in self-questioning. NY does not question whether more work is necessary or more information is needed to provide a well-thought out answer. NY reported that, “No, I don’t read back to see if it is understandable, if people would understand it if they read, I don’t ask myself.” After a short pause, she continued with: “I only ask myself if what I wrote is clear so that the reader would understand, other than that, I don’t ask anything else.”

Another participant, YSL reported that she does not engage in self-questioning. She said: “I don’t ask questions [referring to no engagement of self-questioning].”

Correspondingly, JT provided a similar response. JT explained that he engages in self-questioning to find out if the written answer was correct. JT said that: “Usually as I do, I would ask if this is correct, so when I finish, more or less for me is correct, so I won’t be checking.”

Compared to participants who indicated monitoring through self-questioning, these participants ask fewer questions. Also, they might not know how to ask the effective questions related to source work. They simply read a source by delving right into it without checking its purpose or considering its features or background information. Most of the time, they engaged in repeatedly re-reading for understanding.

Using grades as a reference of performance. To monitor their learning for further improvement, these participants utilize their grades as a form of performance feedback. In the case of TH, he does not engage in monitoring; he usually completes the homework, and then
based on the grades, he would check for errors. To TH, the grades act as performance feedback because they amplify and highlight the areas that need focus and further effort. TH: “For me, I do my homework, they [referring to the teachers] mark, I see which part is wrong, so, I use this to improve.” TH expects the teacher’s feedback rather than proactively monitoring his work for improvement.

In agreement with TH, HX emphasized that he performs the same steps: using grades as an indicator of understanding. He regards doing homework as a way to monitor understanding and performance improvement. HX said that: “If I don’t understand, I redo the homework.” He continued with: “When the teacher gave me the mark right, if I’m not able to achieve a high score, to me, it shows that I don’t understand the chapter.” Similar to TH, HX expects the teacher’s feedback to improve his performance.

Likewise, RT and Steven responded that they use tests’ grades to monitor their learning. For RT, the test results represent a guide to locate mistakes and to identify pertinent answers before referring to the textbook for the right answers. RT: “Through the score, according to how many marks you get on the test.” He continued by noting that: “Whatever questions that you get wrong, you just go back to the chapter, go through what is related to the questions.”

Similarly, Steven said with less enthusiasm that: “If my results are very bad, then, I’ll revise, if pretty good, then less.” Steven’s response indicated that he uses grades as a reference to keep track of his learning.

In brief, the above participants use test results as a form of monitoring which can be effective for performance self-evaluation over a period of time, however, they may benefit from monitoring on the process regularly rather than solely on grades.
Revising, practicing and doing more homework without fully understanding the purpose.

Some participants indicated that they use revising, practicing and doing more homework as monitoring effort. KSH responded to the monitoring question without much thinking. His responses indicated minimal engagement. KSH shared that:

The same as him [he was unsure about what to say, so he referred to RT], see how well I can do in certain tests because definitely most people will have stronger or weaker topics, for stronger topic, I try not to neglect it, but I revise less. For the weaker topic, I’ll revise more and practice more.

Elizabeth commented that she monitors her learning in order to obtain passing grades. To build content knowledge, she dedicates time to work on homework. Elizabeth said:

Currently, I’m monitoring my learning because I know the importance of passing. Last semester, I was very carefree, laid-back, did not do much. So, up to June’s holidays, I have been monitoring my own learning, doing my homework every day, actually, did not forget to bring my homework, which is surprising. Actually, I tried to do my homework on time.

Although Elizabeth expressed monitoring of learning through doing homework, she did not expand further on the monitoring process. Similarly, KSH did not provide details or describe how he would monitor his work through revising and practicing. Specifically, KSH indicated that participants who are less likely to apply monitoring strategy in their learning might not realize the need for better strategies that can be implemented or incorporated in their learning process.
Unclear with formulas. Students in this subcategory were either unsure of the formula or how to apply them to their works. Myra reported that she monitors her learning through the application of a formula and self-testing. Myra suggested that in order to monitor her learning she follows an answering formula as a guide to ensure that she meets all the stated requirements. However, she demonstrated unfamiliarity with the above-mentioned formula while trying to describe its different levels. Her peer Norman intervened to bring clarity to the issue by explaining that there are different types of formulas depending upon the question types. Myra shared that,

I personally will think of a format our teacher gives, there is certain kind of format that we should follow to answer certain type of question, so, I’ll refer to that, if my answer fulfils a requirement in a format then, I know that I’m in a right track and that I have given sufficient points and all that.

In addition, Myra suggested self-testing as a form of monitoring her understanding. Myra continued to say that,

To monitor my learning, before we start on a chapter or topic, they will give a list of questions, if you can answer those questions given before the topic, then, that means that you have understood the chapter. So, I followed those questions, for example, how does the population affect the system? For me, if I can answer that question, I know that I have learned enough, as long as I can answer the questions given before the topic, I know that I have done sufficient learning. As long as I follow the teacher’s template [refers to the formula], I know that I have done sufficient learning, that is how I monitor my learning and understanding also.
To monitor her learning, Myra uses questions posted on each chapter of a text book to test her understanding of a topic. To write her answers, she makes sure to apply the formula. Although she provided a sound monitoring strategy, she was unable to elaborate on how she would apply the formula to different types of questions. As a result, Myra exemplifies differences between monitoring and minimal monitoring participants in which the former provides clear explanations of ways to use the various formulas, whereas, the latter indicates difficulties in explaining the formulas as well as how to use them for various question types.

4.7. Finding 7: Self-reflection decreases students’ participation in learning

In these findings there are two main categories: First, Self-reflection. Second, Minimal self-reflection. See the following table (Table 4-12) for the two categories with different subcategories.

<table>
<thead>
<tr>
<th>First category:</th>
<th>Second category:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-reflection</td>
<td>Minimal self-reflection</td>
</tr>
</tbody>
</table>

**Finding 7: Self-reflection decreases students’ participation in learning**

<table>
<thead>
<tr>
<th>Subcategories:</th>
<th>Subcategories:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research question Two (RQ2):</td>
<td>i) Disinterested in self-reflection but supported SRL lenses</td>
</tr>
<tr>
<td>What are the SRL strategies used by Secondary Social Students?</td>
<td>ii) Disinterested in both self-reflection and SRL lenses</td>
</tr>
<tr>
<td>i) Reflect on the CWR reflection questions</td>
<td>iii) Elaborated on alternative approaches to self-reflection</td>
</tr>
<tr>
<td>ii) Discern areas for improvement</td>
<td></td>
</tr>
<tr>
<td>iii) Reflect on strength and weakness</td>
<td></td>
</tr>
</tbody>
</table>
iv) Misconceptions of self-reflection

v) Self-reflection as an inconsequential practice

**Self-reflection.** During self-reflection, students reflect on performance, assess achievements and/or failures, and evaluate the necessary conditions for improvement. Only a few participants demonstrated and supported engagement in self-reflection. These participants use self-reflection to: 1) reflect on what they learned from the CWR reflection questions; 2) discern their learning performance and to follow up with the necessary actions to improve further; and 3) learn more about one’s strength and weakness.

*Reflect on the CWR reflection questions.* Several participants reflected positively on their learning experience with the CWR and its effectiveness. Some of their reflections show that they think more about the topics they have learned rather than simply carry on with reading the sources and trying to find answers in order to complete the activity. Some of them further mentioned how the CWR activity could be helpful to think about work in the longer term.

Hillary concluded that the CWR experience broadened her views concerning globalization. She recounted: “I found out that there are a lot more negative impacts, like Westernization, a lot of local industries may be affected. It is actually quite sad.” Shortly after reflecting on the CWR globalization activity, she concluded her experience as: “I learnt a lot because I gained wider knowledge on globalization itself.”
Hillary engaged in self-reflection to evaluate her learning and to compare the outcomes of her learning gain. In brief, she uses self-reflection as an assessment of her incremental understanding of a globalized topic.

Ben noted that the SRL reflection questions could be helpful to reflect on completed tasks; and change the way one would normally proceed with source work. He further suggested that the embedded reflective questions could apply to future tasks to facilitate better learning.

Ben stated that,

they [referring to the SRL embedded questions] help us think about the work we have done, what can we do to apply them, also, depending on the kind of reflection questions, it can also benefit our work, maybe help with our ways of thinking, then, maybe we could change what we do. It might even be useful if we have encountered such questions again in the future, because, we might remember the question, and do it more easily than before. So, it is quite a good thing to have a reflection question.

Ben provided positive and supportive reflections of the SRL lenses. The SRL prompts could work as reminder with students who are forgetful or inattentive. With the guided instructions, students could be prompted to remember on what to do at their own pace during source analysis.

Niko depicted reflection as two-fold. First, reflection as an approach to help with understanding, learning, and applying acquired knowledge for further improvement. Second, reflection as a feedback for the researcher to further enhance the CWR in order to facilitate better learning experience for other students. In his words, Niko commented that:
For me, I categorize reflection in two forms, one is you self-reflect, second, how you feedback to reflect for the other persons so that they can help to improve this question for i.e., in the future. I think reflection helps with your understanding, what you have learned, the knowledge that you acquired help you to improve, and possibly in your daily life, so, I think it is quite necessary, also can find out who is not paying attention in class. For the feedback, I think it helps people like you [refers to the researcher] to improve the CWR, to have better experience so that you can implement this in the future for better usage.

Additionally, Niko reflected on the SRL guiding questions by outlining its effectiveness in assisting students’ learning in social studies. Niko pointed out that:

I think the question [refers to SRL reflection prompts] is useful. Basically, it helps to conclude what the students have learned and their understandings in order to progress to the next source. I think it helps students to understand and reflect back on what they have learned, and the skills they have to master or to accomplish the understanding of the source given.

Niko delineated a fundamental issue concerning the role of self-reflection, in this case, the effectiveness of SRL prompts in guiding students to engage in reflection. Niko described how the SRL reflection question guided them to look back on the CWR learning experience and think about or assess what they have learned from the activity. The participants in this group represent reflective learners in which they assess what has been learnt, and how the reflection strategy can apply in other learning contexts for better performance. In addition, they engaged in reflection rather easily without much difficulty when listing the points they have learned during the CWR experience.
Discern areas for improvement. Some participants reflected on their learning performance and identified ways they could improve their learning. CT confirmed that occasionally she would reflect on her performance to discern areas that required further improvement. CT shared that, “I do reflect sometimes especially when you get back your answers after being marked. It does help, you understand what you had done wrongly or correctly, and then you will know how you can improve for your next practice.”

Reflect on strength and weakness. LKM explained reflection along the line of testing one’s initial knowledge in a certain topic. Through reflection, one could learn more about one’s strength and limitation in terms of comprehending an issue. LKM believes that it is important to know one’s strengths and limitations so that more effort can be devoted to reduce the latter. Also, knowing one’s limitations is helpful to better plan and engage in time-management because time constraint is an issue for most students. LKM noted that:

Reflection is more like a way to test your understanding of how or what this topic is about. You reflect what you have learned from your mistake. Reflection is about thinking what you did, and what you think wrongly, so when you first introduce to this topic, you have your own thinking, so reflection is like testing your own knowledge. How you have been exposed to the new topic or how it affects you. To me, that is reflection.

Essentially, LKM suggests that through reflection he could learn from his learning experience, particularly, the mistakes.

Minimal self-reflection. The majority of the participants are in this category. Some of them expressed objections to self-reflection due to the fact that they have been asked to do similar reflection exercises since Secondary one to four; as a result, they no longer find it to be
beneficial. A few of the participants elaborated on alternative approaches to students’ learning rather than self-reflection. For instance, group sharing and teachers’ assistance are more effective because self-reflection is a time-consuming process.

However, the participants who were not interested to share or elaborate their views on self-reflection were encouraged to reflect on the CWR reflection lenses. Most of these participants supported the reflection lenses but others disagreed on their application. In addition, other participants demonstrated misconceptions about self-reflection. They tend to link self-reflection with mistakes and therefore pay less attention to the meaning of their learning experience. The findings in the following sections are: 1) disinterested in self-reflection but supported SRL lenses; 2) disinterested in both self-reflection and SRL lenses; 3) elaborated on alternative approaches to self-reflection; 4) misconceptions of self-reflection; and 5) self-reflection as an inconsequential practice.

**Disinterested in self-reflection but supported SRL lenses.** These participants displayed disinterest in self-reflection but they support the SRL reflective lenses. Most of their reflections highlight the benefits of utilizing SRL guiding questions. Mac shared that he finds the SRL questions to be beneficial to think about extracting key ideas from the source before delving into the reading of long sources, and the reflective lenses assisted him to focus on the content without going off-track. Mac commented that:

I find it [referring to SRL guiding questions] helpful, without those I usually just read through, try to think on the spot, with these guiding questions, while I read, I try to think of ideas on the spot, maybe save me some time, and make me realise more. For example, I may be able to elaborate more.
Mac continued to add that: “While reading I may skip this important idea, which is the main idea, but with the guiding questions, it will help me, notice it.”

Mac’s reflection illustrated that the SRL guiding questions can be an engaging tool with highlighted regulatory prompts for students to stay focused while reading; pay attention to key information in the source; and extract main ideas for elaborating and writing their responses. Staying focused helps students to accomplish tasks without being distracted.

The following participants indicated that the SRL prompts highlighted the key ideas by guiding them to focus, stay on track, and become more aware of their learning process. They pointed out that it is difficult to stay focused because it is easy to be distracted by excessive information or confused about core concepts; eventually misinterpret or go off-track during reading and writing.

HX remarked that: “I think it [refers to SRL prompts] helps me to think towards the answer, so I don’t go out of points.” HX continued to say that: “It happened, I wrote stuff that were not relevant.” TH concluded by saying: “The guiding question I think is good, it helps me to know what I should look for from the source.”

In alignment with the above participants, QQ and AL provided positive feedback on SRL lenses. QQ explained that the embedded SRL questions assisted him to think further about the main ideas and messages of the sources. QQ: “The side questions helped me to think.” AL supported QQ’s answer by adding that they were not scratching the surface of the texts rather they investigated in depth. AL’s reflection on the CWR and SRL questions indicated that she holds positive views about learning with the CWR. In addition, she commented that the
embedded questions prompted her to investigate even further beyond the surface of the source to find the underlying meaning.

AL elaborated by sharing that,

Without the side questions, we are just scratching the surface of the texts, we are not going in depth, the questions that posted, prompt you to investigate even further. Going beyond the surface of the source, and finding the meaning behind it. It is liked asking you what other information can you put in from the source.

Although QQ and AL do not support the practice of self-reflection, they support the SRL reflection questions because the guiding lenses were helpful for learning.

RT concurred that the SRL guiding questions helped him to think further about the sources and questions. For instance, he was able to remember some parts of the video source, including what he learned earlier. RT: “It is okay for me with the guiding questions there because it makes us think more about the source; think deeper then we can relate it back to the question we are supposed to answer.”

Surprisingly, KSH who reported earlier that he is strongly disinterested in social studies, agreed with RT’s view; he found the CWR to be useful for his learning. KSH: “I think it [referring to the SRL reflective lens] is useful, like what they said, the guiding questions guide you so you know what to write.”

In agreement with RT and KSH, Oddie added that: “Is useful because you reflect on all the sources, and what the main purpose of the sources.” QY concluded that: “The guiding questions, I find it useful but I don’t know how to explain it. It helps to trigger more thinking.”
Similar to most participants, WS did not find the practice of self-reflection to be conducive for his learning; he claimed that usually he forgets what he learns. However, he responded by noting that: “It [refers to SRL prompts] helps you to think a bit before doing the question, so you have a rough idea on how it is.” A while later, he added that: “It can help if you don’t understand, get you thinking.”

The above participants expressed that they find the learning experience with the SRL prompts to be productive and practical. Some of them shared their disinterests in learning social studies, yet they provided constructive and positive feedback concerning users’ experience with the CWR. Their reflections suggest that the CWR may play a role in helping disinterested students to become more motivated when learning social studies.

Disinterested in both self-reflection and SRL lenses. In contrast to the above, the following participants displayed disinterest in both self-reflection and the SRL lenses. For Rimi and CK, it is non-productive to think about the main ideas while reading each source because in their interpretations, the process becomes repetitive rather than opportune to cultivate the habit of identifying main concepts within every source.

Rimi expressed that the SRL guiding questions are not helpful for him even though there are aspects of linking or summarizing what was learned from the sources. Rimi stated that: “If writing what you have learned, is kind of good, is like recap what you have learned. But to me, is not so helpful, it is repetitive.”

CK supported Rimi’s view by accentuating that it is repetitive to have to rephrase the answers several times. In total, there were eight questions that the students were asked to complete. CK said that: “Yeah, repetitive. It is like we have to rephrase our answers in eight
times [he was referring to total eight questions to be answered; repetitiveness refers to thinking about the main ideas for each source] While going through the questions, I felt that I was repeating myself again and again.”

Additionally, Kovan stated that self-reflection is not a worthy task to engage with. When the researcher prompted him to reflect on the CWR activity, Kovan replied by saying: “No!” and he recommended to work without the CWR integration due to his preferences for paper-based learning.

Kovan, a top student, knows very well the steps he needs to take in order to obtain high scores. For instance, the steps to analyse, evaluate, and provide supportive evidence when engaging with source work. Kovan is not interested in the CWR because he is familiar and comfortable working with text-based context. The CWR is a new learning environment for him. Therefore, he is reluctant to explore because he knows the routine of working perfectly well within the text-based environment.

Elaborated on alternative approaches to self-reflection. The following participants candidly stated that they do not engage in self-reflection, but they recommended alternative approaches to self-reflection. Unanimously, they concurred that students are not benefitting by practicing self-reflection; they arrived at this conclusion based on their observations and conversations with other classmates.

Myra suggested group sharing over self-reflection; she tried to rationalize by explaining that sharing helps to trigger more ideas from the involving participants. Myra shared that, I don’t think so [referring to the effectiveness of self-reflection], probably sharing would be more useful. I think when we shared as a class it can be more effective. When I see my
classmates as well, reflections are kind of half-hearted, if you do something half-hearted, I don’t think you would get the full benefits of it. For example, when I said something right, something might be triggered by Fai, and then he would say something more, and not just what he wanted to say, so sharing bounces off ideas, and trigger what the person wants to say.

To Myra, sharing is an idea-generation process of peers thinking out of the box and in multiple directions, which eventually generates diversified thoughts within a short period of time.

Fai agreed entirely with Myra about the ineffectiveness of self-reflection. Fai regarded self-reflection as a time-consuming process; he suggested leaving reflection procedures out and replacing them with the teachers’ assistance and reinforcement. Fai recommended more teachers’ help to those students who are not performing well. Fai stated that:

Reflection, in my opinion is not really good, you can go another way which is less consuming, basically what we do is every time we finish a chapter, we do have a test. What we have learned, and understand, clearly going to show in our results, teachers are going to understand that this person is doing well, or not doing well, if we really aren’t doing well, teacher might have a focus on us. Sometime, they’ll come to you and talk to you about grades. So, they’ll help us, we don’t really need reflection, because it is time consuming, and at the pace we are going, we have to complete quite a lot right.

In Fai’s view, self-reflection is a lengthy, unproductive, and prolonged process that could be excluded since the teachers could help students to solve their performance problems.

Norman joined Myra and Fai by agreeing that self-reflection is inefficient for their learning. He reasoned that based on his observation of friends’ in-class behaviours, he arrived at
the conclusion that some of them do not invest effort to reflect and write about their learning progress whether it is a positive or negative experience, rather these students simply copy from their friends in order to accelerate task completion so that they could return to do what they wanted to do. Norman shared in a somewhat serious tone:

Basically, I also think that reflection is kind of useless because in our curriculum we have something like a subject called Character and Citizenship Education, at the end of the lesson, we have to do reflection, I feel that it is not very effective because some of my friends just asked other people for their answers, what they have written. Basically, they have a mind-set of completing it as fast as possible, then, do what they want, basically they have not learned much from citizenship education because of reflection, yeah, haven’t learned much.

These three participants revealed different perspectives on the reasons why self-reflection is regarded as ineffective in their learning. Although self-reflection could be a time-consuming process, as Fai indicated, requiring a learner to think or reflect on several issues concerning learning in relation to a task, it also denotes thinking about what was learned; what are the problems or areas that require deeper understanding; and what needs to be done in order to improve. To think about these questions, most likely Fai would consider the process to be overly lengthy and unproductive, not to mention writing his answers in a coherent manner since Myra suggested that the writing part needs to be well structured. Understandably, these issues point to the reasons why some students prefer to copy their peers’ answers without having to go through the prolonged process of reflecting and then writing their responses.

*Misconceptions of self-reflection.* During the discussions, some participants demonstrated misconceptions of self-reflection. Jai’s response illustrates that his conception of
self-reflection might be narrowly defined within the boundary of knowing the cause of one’s mistakes. If self-reflection is solely about thinking what went wrong, then undoubtedly, most participants would find it to be counterproductive. Jai was not thinking of self-reflection questions as a motivating factor for thinking about what was previously done; how they have learned; or what can be done to improve upon. Rather, Jai described his understanding of reflection as: “You get to record down what you did wrong in a topic.”

The next participant, Caleb elaborated his thoughts on self-reflection by annotating that there are different types of reflection questions depending upon their applicability. For instance, to self-reflect on what went wrong after an examination could be considered as meaningless. According to Caleb, it is pointless to reflect on one’s mistake after the examination since nothing can be done or follow up with. Caleb shared that:

It depends on what kind of reflection question, if it is those that after the exam like where do you think it went wrong? I find them useless, because the test is over, what is the point of talking about careless mistake, what can you do now?

However, Caleb’s sharing indicates that he is unaware that reflecting on one’s mistake helps to avoid or prevent the same mistake from happening again.

Drawing from these participants’ responses about self-reflection, there may be a gap within their conceptions of understanding how self-reflection could be used for assisting them to recognise or identify the progress they have achieved in learning a topic or lesson. These participants link self-reflection to mistakes and pay less attention to the meaning of their learning experience. It is important to note that both experiences and mistakes are essential components in
learning; and it is crucial to question or reflect on their meanings in order to advance in one’s learning process.

**Self-reflection as an inconsequential practice.** All the participants in Winter Land Secondary school considered self-reflection as an inconsequential practice. One of the reasons for this attitude may be due to the fact that from Secondary one to four, they have been asked to do a similar exercise, which is to reflect on either their own learning or on the teacher’s teaching. Therefore, they find reflection to be unnecessary because the questions remain largely the same.

YSL commented that: “For some subjects, you have to do it [referring to self-reflection] after every test, for some, you have to reflect every year on your work or their teaching, every year the same.” NY agreed with YSL by saying: “Is the same question.”

JT professed that: “We don’t even think about it [referring to similar self-reflection questions from classes], see this kind of questions, just write.” Jennifer Y followed after JT saying: “Yeah, we have common answers for this kind of questions.” Notably, although Jennifer Y agreed that self-reflection is an uninteresting task, she managed to provide a coherent reflective written response.

Undoubtedly, these participants failed to see that learning is an incremental effort. For instance, the reflection question: what have you learned? A learner reflects on it to find out what was learnt by elaborating the learned information in a more coherent manner. Although it could be the same questions year after year as pointed out by these participants, the reflective process mirrors a change in terms of the student’s improvement from Secondary two to three or year four. But, because these participants do not view self-reflection questions as beneficial, they have difficulties to understand the advantages of applying it for learning.
Nevertheless, some of them suggested a few self-reflection questions that could be more captivating and engaging. JT suggested by recommending: “Was what you learned fun?” NY continued by saying: “Was it interesting?” YSL followed up with NY’s by articulating: “If not, what would I really need to make it interesting?” Finally, in the next chapter, five, discussion of the above findings will be elaborated with supports gathered from the literature review.

Next, to compare differences between the participants in self-reflection and minimal self-reflection groups, their written responses from the CWR activities were extracted for analysis of the disparities. The participants who supported self-reflection provided longer, richer, and elaborated responses, whereas, those who do not support self-reflection provided brief, short, and limited online written responses. See the following table (Table 4-13).

17 Table 4-13 A comparison of CWR online responses from participants of Self-reflection and Minimal self-reflection groups.

<table>
<thead>
<tr>
<th>Participants Pseudonym</th>
<th>Self-reflection</th>
<th>Minimal self-reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Four Jennifer Y</td>
<td>Q: Write a short paragraph of what this source tells you about globalization? A: I can infer that the short paragraph of this source is trying to tell us that globalization cannot be stopped and we do not have a choice. Support from the military 'Goofys' and 'Donald duck' and 'mickey mouse' marching into the country and everyone has no choice but to surrender. And the coke being shot to the country and the Macdonald ships. All of these items were initially from USA but they are now all around the world. This suggest that globalization has taken all over the world. Therefore, this source is suggesting that Globalization has taken all over the world</td>
<td>Q: Write a short paragraph of what this source tells you about globalization? A: Without Globalization different countries of different background and belief will ending up with a war easily. Support from the source</td>
</tr>
</tbody>
</table>
shows that different countries on different of their warship fighting together. This shows that globalization is very important between countries to maintain peace and harmony together.

Q: Write a short paragraph of what this source tells you about globalization?
A: Globalisation is when products from other countries entering Singapore and giving the people in Singapore a chance to see and buy it. It also shows how the World has developed into to be able to do such things like importing from other countries into our country and thus the cartoon shows as if it is an invasion. The impact of globalisation can either be beneficial or harmful, but in this source it shows that globalisation is harmful and even threatening the people in Singapore from internationally known brands such as Coke, MacDonald, Shell and Microsoft, therefore it shows that such brands enter Singapore it will be hard for locals to set up their own businesses as it will not be as receptive as it should be from the consumers when they buy a product.

Q: Write a short paragraph of what these sources tell you about poverty?
A: Poverty is caused by the lack of skills of a person, causing them to be unqualified for a stable job, thus earning them too little to support themselves or their families.

Q: Write a short paragraph of what these sources tell you about poverty?
A: about how we can apply skills to our jobs

Q: Write a short paragraph of what these sources tell you about poverty?
A: SkillsFuture is a national movement to provide Singaporeans with the opportunities to develop skills throughout life, regardless of their starting points. Through this movement, the skills, passion and contributions of every individual will drive Singapore's next phase of development towards an advanced economy and inclusive society. It does not matter where you stand now, there is a variety of resources to help you attain mastery of skills. Skills mastery is more than having
the right paper qualifications and being good at what you do currently. It is the ways of thinking and continuous striving towards greater excellence through knowledge, application and experience.

The above written responses from the two groups of participants show differences not only in terms of the length of the writing but also in their understanding of the topics. The self-reflection participants provided reflection with understanding linked to personal context, for instance, CT highlighted the impacts of globalization on Singapore. In contrast, the minimal self-reflection group provided limited understanding without sufficient ideas that can demonstrate a comprehensive view about the topic they have learned.

Finally, findings 4, 5, 6, and 7 address RQ2 and sub-RQs 2a, b, c, and d. Following is a consolidation of the above findings.

**RQ2:** What are the Self-Regulated Learning strategies used by Secondary Social Studies students?

**RQ2a:** What are the different learning approaches used by students when learning Social Studies?

Finding 4 (Students’ key learning approaches) helps to sieve out the commonly and less commonly used learning approaches by students when learning social studies. It identifies areas where students may need improvements with their current learning strategies. For instance, participants commonly reported that help seeking is one of the most frequently used strategies. Given that they regularly seek help from teachers, it would be necessary to find out why and what types of help are needed by most students. This finding highlighted that most participants
depended on teachers’ instructions to do their work, prepare for examinations, and get the right answers. In contrast, very few of them reported engagement in independent learning in order to find ways to help their understanding of a topic such as actively searching online content. Likewise, fewer participants reported the application of prior knowledge in connecting out-of-classroom experiences to in-class activities. Only a few participants with interest shared that they read newspapers as a way to enhance their world views, increase knowledge of social issues, and transfer prior knowledge to learning in social studies classes.

To learn social studies, all participants indicated extensive engagement in memorization. However, this approach may not help the disinterested participants to advance their comprehension when learning the subject. According to Liming et al (2006), memorization is the reason why students dislike social studies. Finding 4 elucidates that most participants engaged in ineffective learning strategies such as dependent help seeking for the right answers and memorization of content instead of independent learning and activation of prior knowledge. This finding helps to explain the various learning methods used by participants in addition to self-regulated learning strategies. It provides a comprehensive view of different approaches engaged by students with different interests and varied performance levels.

**RQ2b:** What are the planning strategies used by students to engage in the process of learning?

Finding 5 (Planning increases students’ engagements in learning) planning represents the first phase of SRL. This finding draws out different levels of planning strategies used by participants. There are two distinct groups of learners: Those who engaged in planning and those who practiced minimal planning. In the former group, some participants engaged in goal setting
whereas in the latter, some were either having difficulties to elaborate on their planning strategy or in need of determination to follow through their plans.

The participants in the planning group reported that they engage in planning to achieve positive learning outcomes in social studies. Typically, they provided and elaborated in details how a plan would be conducted. This group of participants adhere to planning as a regular routine rather than study intensively over a short period of time just before examinations. They remarked that engagement in planning requires determination and dedication in order to arrive at the goals. Similarly, in this group, participants from four schools shared much the same characteristic which is providing unambiguous steps related to planning.

On the contrary, in the minimal planning group, some of the participants considered planning to be inessential mainly due to their lack of interest in the subject. In this group, there is a lack of report concerning self-initiated plan and action when learning social studies, also, goal achievement is less communicated.

**RQ2c:** What are the monitoring strategies used by students to keep track of their learning?

Finding 6 (Monitoring increases students’ participations in active learning) identifies monitoring differences between two groups of participants: Those who monitored their learning and those who noted minimal monitoring. Those from the monitoring group reported using monitoring skills such as self-questioning, writing notes, and searching for online resources. Some of them engaged in a combination of monitoring skills in areas of checking source features, employing different formulas, and seeking help from friends and teachers. In
comparison, the latter group engaged mainly on teachers’ feedback and homework revision as ways to keep track of progresses.

The participants in the monitoring group articulated that monitoring entails active participation in addition to allocating extra time and dedicating further effort in order to achieve positive outcomes. Some of these participants used self-questioning when learning novel concepts from different sources. To improve comprehension, they applied self-questioning to focus on source analysis by probing unclear areas, identifying difficult concepts, and clarifying understanding. Some noted monitoring through application of online resources for self-testing purpose. Self-testing enhances learning outcomes because participants had to actively think of the answers rather than repeatedly rewriting or re-reading paragraphs. Those who indicated a combination of monitoring strategies reported peer learning and help seeking from teachers. Through this regular form of monitoring, these participants identify knowledge gaps in learning and re-construct understanding based on views gathered from peers and teachers.

Contrary to the above group, those from the minimal monitoring group frequently checked with teachers, practiced more homework, and engaged less actively in learning. As a result, self-questioning, and application of online resources for self-testing were uncommon. Some of them remarked that they engage minimally with self-questioning simply because they do not know how to ask effective questions. Others noted that they work without any monitoring strategy and thus they depend on help seeking from teachers as a regular form of feedback for ongoing progress. It is worth noting that some of the participants who are less likely to apply monitoring strategies might not be aware of the different learning strategies to be incorporated.

RQ2d: What are the self-reflection strategies practiced by students?
In this last finding, (Self-reflection decreases students’ participation in learning) the participants’ responses were categorized into two groups: Those who indicated they practiced self-reflection and those who indicated minimal self-reflection. There were very few participants in the former group, with the majority of students belonging to the latter group. The minimal self-reflection group can be further divided into two subgroups: Those who were disinterested in self-reflection but supportive of the SRL prompts; and those who were disinterested in both self-reflection and the SRL prompts. Notably, the majority of the participants found self-reflection to be ineffective due to years of working with repetitive self-reflection activities in classes.

Some participants in the self-reflection group reflected on the CWR reflection questions and shared that they think more about the topics rather than finding answers to complete the activity. Others reflected on ways to improve their performance. Through reflection, some of them pointed out that they could learn more about their strengths and limitations so that more effort could be devoted to enhance the former and reduce the latter.

In the minimal self-reflection group, those who were disinterested in self-reflection found the SRL prompts to be productive and practical. Their responses suggest that the CWR might play a role in helping disinterested students to become more motivated when learning Social Studies. In comparison, the participants who were disinterested in self-reflection and SRL prompts regarded the learning process to be repetitive because of the needs to identify key ideas of each source. In addition, some of them recommended alternative approaches such as group sharing rather than utilization of self-reflection exercises.
In this chapter, the findings addressing the two research questions are discussed in context with supportive and relevant literature. Each of the seven findings from Chapter Four are discussed in terms of the study’s research questions.

5.1 Discussion: Research question one (RQ1)

RQ1: To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning?

Finding 1 indicates that learning within the online computer-based learning environment, the Critical Web Reader, was effective in drawing students’ - particularly those with a lack of interest - attention and interest towards a topic of study in Social Studies. The implementation had positive effects on students’ learning experiences.

This finding is in alignment with research studies concerning technology integration in classrooms. The research shows that students have positive attitudes toward the use of technological tools, increased motivation and higher levels of engagement in their learning (Fleischer, 2012). In one-to-one computer projects, students reported a positive effect of laptops on knowledge formation, a greater sense of motivation, and engagement in learning because laptops helped to make classes more interesting (Maninger & Holden, 2009; Zucker & Hug, 2008). Also, students’ participation in computer programs is associated with increased engagement and interest level (Bebell & O’Dwyer, 2010). These research studies found that technology integrations in classroom contexts positively impact students’ learning. The following figure (Figure 5-1) illustrates the beneficial impacts of the CWR in assisting secondary social studies students in learning.
Figure 5-1 The impacts of the CWR integration in enhancing students’ engagements

**Finding 1: Support.** The first finding highlights that the CWR enhanced participants’ critical thinking skills, and increases disinterested students’ engagements. The CWR as a multimodal scaffolding tool provides participants a broader perspective of the topics and opportunity to learn through varied online perspectives.

This finding indicates that prior to using the CWR, secondary four participants from Winter Land and Maya held different conceptions of the topic of globalization. In particular, the participants from Winter Land remarked that the online sources helped them to think more critically about globalization, including its worldwide impacts. The CWR with its multimodal information sources such as audio and visual sources helped to engage these students in learning about the topic. Initially, they had different understanding of the topic, some thought that globalization was related to technology or trade without awareness of its negative impacts.
Participants pointed out that after finishing the last source, a comic clip depicting the invasion of Western influences on a cultural group by drowning out their economies and traditions, and molding the inhabitants into the capitalist way of life, the participants realized that there is a downside to globalization. This realization indicates the necessity to understand the pros and cons of globalization before drawing conclusions.

Additionally, before going through the CWR activity, most of the participants believed that globalization was good for the world; they did not view it as a complicated and complex issue requiring multiple perspectives in order to gain a holistic viewpoint of the topic. Consequently, they concluded that the CWR with its multimedia platforms provided them the opportunity to think more critically. The participants found their learning experiences with the CWR to be mainly positive, constructive and rewarding as they began to think more critically about globalization.

These participants’ experiences reveal two key factors: First, the potential of appropriately utilizing a computer-based learning environment to increase students’ engagement in social studies. Second, the development of critical thinking skills through technological support. These two factors align with the emerging trend of technological and pedagogical integration of digital resources with multiple perspectives of information into curriculum (Kong, 2014; Trilling & Fadel, 2009). Accordingly, one of the key goals in school education in the twenty-first century is helping students develop their critical thinking skills as central to effective learning. Briefly, critical thinking skills refer to the capabilities to think reflectively and skillfully judge reliable information as well as to act cautiously during reasoning and problem-solving (Fung & Howe, 2014; Kwan & Wong, 2014). Kuhn (1991) conceptualizes critical thinking as a form of reasoned argument.
The CWR provided students the opportunity to construct their own understanding of the sources as well as to defend affirmative or contradictory conceptions of the topic. By actively engaging in the investigation of real-world sources, students discover, comprehend, and make crucial judgments for themselves. The learning process of the CWR offered students ample ground to experience perceptive changes in their understanding and view their learning through varied perspectives. This form of scaffolding afforded students the opportunity to understand that many problems or conflicts do not always have a single solution or perspective. By having the students engage in interactive investigations of the globalization topic, the CWR program facilitated their critical thinking skills; helped them develop interest in the topic; and supported their understanding of the importance of multiple-perspectives.

In contrast to the above mentioned secondary four participants, some of the secondary three participants found the CWR activity on poverty to be boring. This standpoint may have been due to their disengagement and lack of interest. However, these students pointed out that although they were disinterested in the topic, they found the use of digital learning a worthwhile experience because the media of video, animation, and visuals offered a broader perspective of the topic.

Lack of interest, which translates into lack of motivation for learning, is particularly prevalent when pursuing social studies. Shaughnessy and Haladyana (1985) point out that commonly students are uninterested in social studies because they perceive it as a boring subject. Students tend to equate uninteresting with unimportant, subsequently, they are not motivated to learn. Other influential factors for students’ lack of interest in learning social studies are due to relying on reading textbooks, memorizing facts and figures, and having to repeatedly re-read and re-write notes.
Notably, the disinterested participants pointed out that video is a user-friendly learning medium to learn about content, learn about different views, and gain better understanding of a topic. This suggests that to sustain students’ interest and curiosity, platforms like the CWR can be beneficial for their learning because, as pointed out by Keddie (2014), “The more interesting the material, the more memorable the content learned in conjunction with it” (p. 74).

Taking into account that students are living in a technology rich society, growing up in a digital world, and facing a future in ever-advancing technology and information (Project Tomorrow, 2010), it is plausible that students engage and respond differently within a digital learning environment. Gee and Elisabeth (2011) note that new forms of digital media draw learners increasingly toward video games, social media, and alternative ways of learning.

In alignment with having an alternative way of learning, one of the participants, Rimi provided an important example of the way in which unmotivated learners could become motivated by the medium used. Rimi clearly stated that the paper-based textual format did not draw his attention as much as the video did. To assist students to learn better, video sources have the potential to support text alone or direct teaching by providing multimedia materials in addition to text-based for students to self-pace their learning (Mayer, 2005; Klose, 2008; Bravo, Amante, Simo, Enache, & Fernandez, 2011). Briefly, self-paced refers to the way a student proceeds from one source to another at his/her own speed.

Likewise, research by Dunleavy and Milton (2009) and Project Tomorrow (2010) illustrate that multimedia technology in the forms of video, animation, and other multimodal information sources have proven effective in engaging students in learning about subjects, and exploring ways to present their learning because technology enables them to control their learning. Clearly, some students prefer different modes of information delivery.
This finding reveals that the advantage of using the CWR with its embedded videos as an instructional method creates ample possibilities for less motivated students to take advantage of the multifaceted capabilities of technology, and more importantly to learn about factual information through multiple perspectives.

In addition to the support, it is equally important to be aware of the constraints pointed out by some of the students. Refer to following figure (Figure 5-2).

![Figure 5-2: Two opposing perspectives concerning technology integration](image)

**Constraints.** The first finding also points to constraints in the areas of limited hands-on involvement such as the lack of directly drawing or writing on the provided sources; and limited support for certain cognitive processes because some participants simply copied and pasted answers without giving much thoughts.

Kovan pointed out that he preferred paper-based source for its hands-on benefits. Bennett, Kennedy, Dalgarno, and Gray (2010), noted in their research similar findings concerning participants’ needs for hands-on benefits. Kovan regarded integration of the CWR as a limitation in supporting his cognitive processes when analyzing sources. In agreement, Niko,
another high achiever, does not consider the application of CWR useful for facilitating students’ knowledge assessment or development of conceptual understanding in social studies. Both Kovan and Niko firmly stated that they prefer not to work with online sources.

Essentially, the above findings implying that the use of the CWR has a more positive outcome on students with middle and low performance support Cheung and Slavin’s (2012) research indicating that instructional technology has a more positive impact on low and middle ability students than high ability students. In this study, students who were the low and middle achievers in social studies remarked that the utility of the CWR is an advantage in supporting learning through the visualization of content through various visual representations of people, events, and places. In contrast, students who were the high achievers concluded that the use of the CWR is a constraint as it interrupted their cognitive flow during source analysis. For instance, they could not highlight important ideas or write short notes on an online source but with paper-based, they can easily do so.

The two opposing views about online effectiveness mirror a widely cited debate between Clark (1983) and Kozma (1994). Clark (1983) argues that educational technology has no impact on student learning under any condition. He views the impact of technology on student learning as a result of novelty effects or instructional strategies, but not technology itself. On the contrary, Kozma (1994) believes that technology has an impact and play an important role in student learning.

The current findings align with Kozma’s position because they indicate that the low and mid performers found that online technology is effective for learning social studies. Given that there is a larger number of students from the low and mid performers’ groups, the four different
schools participating in this research may consider adopting appropriate educational technology programs to narrow the gaps between different levels of performances and interest in learning.

**Findings 2: SRL lenses/prompts.** The majority of the participants agreed that the SRL lens is a supportive tool due to two factors: first, it aids their reading comprehension; second, it increases their awareness of using learning strategies to help with source analysis. See the following *Figure 5-3*.

10 *Figure 5-3* The effectiveness of SRL prompts.

The participants with contrasting views between effectiveness and ineffectiveness of the SRL prompts is small. Most of the students were able to describe the reasons for the effectiveness of the embedded SRL lenses; they understood that the lenses act as prompts for the purpose of providing guidelines, steps, and assistance to go through different sources. The participants from different schools listed the beneficial aspects of the SRL prompts. For instance, the secondary four students, Jennifer Y, pointed out that the prompts helped her to focus on extracting crucial concepts from a bulk of text data. For the secondary three students, Cindi linked the prompts to her teacher’s instructions by outlining that the learning experience could be viewed as a practice to cultivate habitual self-questioning.

This finding supports King’s (1991b) research indicating that the application of SRL prompts guide students to focus on the source content, and examine the information to identify more important information from less important. Importantly, King’s results are consistent with
findings from other studies that use self-questioning to foster reading comprehension (Wong, 1985).

This research shows that application of self-questioning during classes assist students to direct their cognitive processes by: Focusing attention on the content; discerning the ways ideas are organized; and relating content to prior knowledge. Self-questioning helps learners to keep a constant check on their understanding during learning by asking and answering their own questions.

Haller, Child, and Walberg (1988) found self-questioning to be the most effective monitoring and regulating strategy because it helps to monitor one’s learning by asking a question such as: “How does this idea relate to what I learned before?” The discussion concerning self-questioning would be further elaborated under finding six - monitoring and minimal monitoring.

The majority of the students found SRL prompts to be effective during the globalization and poverty activities due to two key factors: they supported reading comprehension and; increased students’ awareness of using learning strategy to help with learning. *Firstly*, according to Catts, Hogan, and Adlof (2005), reading is a complex cognitive task that requires “a host of sensory, perceptual, and linguistic abilities” (p.25). Reading a text can be a demanding task even for skillful readers due to complex sentence structures and large amounts of content specific vocabulary (Brown, 2007). The subject-related vocabulary like concepts and words further add to confusion that students may experience (Alexander, 2011). Thus, it is not surprising that academic success is highly correlated with the ability to read and understand a variety of complex texts (ACT, 2006).
Unfortunately, some adolescents with inadequate understanding of reading strategies may have difficulty in their learning, which in turn relates to school failure, and eventually affect career opportunities within an increasingly competitive global work environment (Faggella-Luby, Graner, Deshler, & Drew, 2012). To identify reading issues that students’ experience in middle school social studies, researchers highlight the challenges in areas of: difficulty in analyzing information, identifying main points, drawing on prior knowledge, and understanding text structures and patterns to aid comprehension (Gajria, Jitendra, Sood, and Sacks 2007; Ward-Lonergan 2010).

The participants from the four different schools indicated similar learning challenges when analyzing source information, identifying more relevant points from less relevant, and understanding of sources and types of question in order to apply the appropriate formulas. With the SRL prompts, they are directed to learn with explicit instructions as guides to effectively focus, extract, and/or deduce rich information for meaningful understanding. As a result, the majority of the participants stated that the SRL prompts with explicit guiding instructions to be essential due to connectivity between SRL guiding questions and learning social studies content.

Research suggests that instruction of self-regulatory strategies is most effective when contextualized within regular instruction, and that transfer of strategies is enhanced when instruction addresses the issue of transfer directly (Dignath, Buettner, & Langfeldt, 2008). Findings from the current research indicate that it is important to consider how effective SRL learning strategies can be embedded within ongoing instructions as scaffolding and provide opportunities for students to regulate their learning, shape emerging skills, and attain richer understanding throughout the social studies activities. Undoubtedly, some students may learn to
study effectively on their own, but most will not without guided opportunities for practice (Gettinger & Seibert, 2002).

Secondly, students’ levels of awareness in using learning strategies to help with their learning is important for self-regulation. In this study, the higher achievers demonstrated that they had gained clear understanding when using formulas such as PEEL. They further provided concrete examples of the ways how they engaged in strategic behaviors. In contrast, the low and mid achievers had uncertain understanding of the PEEL formula; they provided minimal examples in strategic engagement. Although there were differences between these students, most of them embraced the application of SRL prompts. The finding indicates that students from different achievement groups could benefit from SRL scaffolding prompts during their learning.

As self-regulated learning strategies may be seldom taught directly during classes, students have little opportunity to practice. Most students, if not all, depend on repetition and rote learning as learning approaches; over the years, they have gained extensive practice experience with these strategies (Gonzalez & Willems, 2016) and firmly believe in memorizing the content while lacking awareness of other potential learning approaches (Woolfolk, 2013). This may especially be the case in exam-oriented classroom settings where greater emphasis is placed on preparing for exams. McKeachie (1988) and Weiten (1998) explain that not all students know how to learn, or were taught how to learn. As a result, the participants in this study responded positively to integration of SRL prompts as a tool to better grasp material in social studies.

To help secondary school students to learn better, the How People Learn (HPL) framework suggests that teachers could increase their instructional repertoire and choose more purposively among instructional techniques to accomplish specific learning goals and objectives.
Teachers can align pedagogical methods such as direct instruction and use computer and technological enhancements in ways that positively support the learning needs of all students (Bransford, Brown, & Cocking, 2000).

In conclusion, this research shows that knowledge about learning strategies is crucial, particularly for those students who do not know how to learn, thus, educators can help these students by providing direct instructional strategies focused on SRL within a computer-assisted learning environment such as the CWR.

**Finding 3: Interest and Lack of interest.** The participants who reported interest in social studies provided longer and detailed online answers whereas the lack of interest group provided answers without sufficient details on essential facts, key points or important information. Essentially, the former invested greater effort and time to write out coherent answers, while the latter approached the questions with less effort and without indicating key information.

The following figure (*Figure 5-4*) shows the differences and similarity between the two groups of students.
Although interest varies from individual to individual, Hidi (1990) notes that individual interest has been shown to have a positive effect on cognitive functioning and performance. According to Hidi: “individuals interested in a task or activity have been shown to pay more attention, persist for longer periods of time, and acquire more and qualitatively different knowledge than individuals without such interest” (p. 554). Current findings parallel Hidi’s position and show that students who reported interest in social studies demonstrated positive effect on performance as well as qualitatively more elaborated online responses than individuals who indicated a lack of interest in social studies.

The focus group interview data and students’ individual online responses from the CWR were used to identify whether students who indicated interest in social studies perform differently than students who indicated the opposite. The triangulated analysis revealed that students who reported interest provided online answers by identifying key points, writing

- Invested greater effort and time to provide coherent online answers
- Reported a variety of learning strategies

Students with a lack of interest

- Provided shorter online answers and without details or essential facts
- Limited application of learning strategies
- Link future employments with other subjects but socia studies

Students with interest/lack of interest

- To excel in social studies, meorization or rote learning is key

11 Figure 5-4 The differences and similarity between two distinct groups of students
detailed and longer paragraphs with essential facts, and enumerating important information. For example, Jennifer Y started her answer by taking a stance and making a claim that “globalization has helped to improve Singapore's economy.” To support this claim, she provided sufficient evidence and made a reasonable connection between the claim and evidence by adding details about Singapore importing raw material such as crude oil and exporting it as high added value product after refinement. Rex, Thomas, & Engel (2010) note that in general, quality argument-based writing commences with the writer making a claim or taking a stance that is supported with credible, adequate, and accurate evidence, and then making a logical connection between the stance and evidence.

The online CWR responses from students interested in social studies reflected that they invested more effort in the thinking process for writing and completing the questions’ requirements. In contrast, the students who reported lack of interest provided shorter answers without sufficient details on essential facts; their responses showed that they invested lesser effort and time in acquiring and presenting content knowledge. Furthermore, unlike the interest-based students who completed all the questions in the CWR activity, some of the lack of interest students delivered incomplete answers and left out a few questions unanswered.

The following discusses the linkages between lack of interest and the category, career aspiration. Some of the lack of interest students invested less effort in social studies because they do not see linkages between learning social studies and future employment. The current findings further support Hansberry’s (2000) results concerning students’ view in relation to connection between learning of social studies and future career. Hansberry (2000) indicates that social studies is one of the least-liked subjects in year nine (Australian secondary education) students due to reasons such as: constantly working with articles and worksheets; and continually
doing questions and answers out of a textbook. Although these students further asserted that they expected to make use of what they learned in social studies, they see little value in it as a means to help them obtain future employment.

Take Leo for an example; he proclaimed that he dislikes the subject, however, he shows interest in the CWR due to internet access. Leo’s interest in utilizing the CWR aligns with his career aspiration: to be admitted into the Animation Program of a Polytechnic. To Leo, learning with technology is a preferred approach. The integration of the CWR into social studies classes generated a sense of relevance for Leo who claimed that Google is his best friend. In a technology-driven society, students can conveniently access information through hand phones and laptops. Leo is a frequent user of the internet, and since the CWR activity is connected to it, he experienced learning with technology in classroom contexts as similar to out-of-classroom contexts.

Leo’s example illustrates a potential pathway to interest development as it suggests that his lack of interest with social studies could be scaffolded using technology as a motivational tool to establish connection between social studies and personal interest in technology. Essentially, different contexts (in class or out-of-class) found in physical or virtual spaces provide opportunities for learning as each context consists of unique configurations of activities, material resources, relationships, and interactions (Barron, 2004). Therefore, individual interests can be seen as a relationship between the person and the environment (Krapp, 2003). Likewise, in her research, Barron (2006) has shown that the rapid increase in access to information and to technologically mediated learning environments such as online special interest groups, tutorials, or games have been affording adolescents with resources and activities to support their learning.
Bronfenbrenner (1979) refers to these changes in person-environment relations as “ecological transitions” and suggest that they are both consequences and motivators of development. Briefly, the learning ecology perspectives aim to articulate the interdependencies between a young learner and environmental variables in addition to the intertwining of person and context in producing change (Bronfenbrenner, 1979; Cole, 1996; Lerner, 1991; Lewin, 1951; Rogoff, 2003). For a change to occur - in the case of Leo and other students who shared similar interest in digital worlds - technology integration in classroom learning may help to spark learning interest and subsequently motivate these disinterested students to engage in social studies due to technological engagements across different environmental contexts.

To continue on the discussion between the lack of interest and career aspiration, take KSH and Fai as further examples, two self-reported disinterested learners. KSH exemplifies a lack of interest partly due to seeing little value in social studies as a means to obtain future employment. Fai reflected the same value as KSH, he sees limited value in social studies to help him with future employment. Fai pointed out clearly that if he wanted to have a profession in the field of social studies, he would work hard, if not, he would only work to meet the minimum requirement.

To understand interest-based participation in social practices, Azevedo (2013) posits that interest reflects a person’s understanding of his or her motives for engaging the practice in the long run. KSH’s shared that he set predetermined goal for Polytechnic admission in the Business program. He remarked that to be admitted, he needed to perform well in Mathematics and English. Thus, he worked diligently on these two subjects in order to meet his goal. Likewise, Fai suggested to engage more deeply in a subject related to future employment.
The majority of the students look forward to be admitted in Polytechnic and in a Business-related program. In general, they showed lower interest level in the field of Arts or Humanities but more interest in the areas of Finance, Accounting, or Technology related programs. The current findings add on to Hansberry’s (2000) research, as previously indicated, students see little value in social studies for future employment, as a result, they are unmotivated to devote effort or excel in the subject since their hard work may not help to secure a potential job in the future.

The participants’ perspectives on the subject of interest in relation to future career point to a critical issue: how can educators better engage students to learn social studies? It seems imperative that in order to fill the gap between social studies and future career, it is necessary to introduce students to a wider range of professions related to social studies other than business. Also, some of the participants select their choice of programs or professions due to influences from family members, relatives, and/or friends. They missed out the meaningful and equally exciting future careers in the field of social studies such as being an economist (Economics), a lecturer in a school or university (Political Science, Sociology, etc.), or working in urban development or landscape design (Geography).

The participants who lack interest may need support and structure to acquire the knowledge and skills required to excel in social studies and related careers. Becoming aware of the different career possibilities may help to motivate or increase their interest to study in the field of social studies. By recognizing the relationship between social studies and potential career opportunities can be instrumental to motivate, increase, and mature the students’ interest levels into deeper knowledge development. As Azevedo (2013) previously points out, interest reflects a person understanding of his or her purpose for long term engagement. The fact that
more participants indicate that they wish to engage in professions other than social studies implies that there is a pressing need to prepare more professionals in this particular field.

Notably, middle school (grades 6-8; ages 11-13) has been identified as the period when the majority of youth begin to make decisions about curricular choices for later studies in high school and beyond (Adams, Gupta, & Cutomaccio, 2014; Tai, Liu, Maltese, & Fan, 2006). Therefore, constant encouragement, guidance, and scaffolding support such as the integration of innovative technology can be crucial to foster students’ interest in the learning of social studies.

**Learners’ strategies and preferences in learning.** The terms learning preference, learning style, and study style are used interchangeably (Cassidy, 2004); and refer to the idea that students learn differently (Van Rensbury, 2009). A learning preference is not fixed; students adopt different learning styles for different tasks or various domains (Larkin & Budny, 2005).

Research conducted by Hamman, Shell, Droesch, Husman, and Handwerk (1996) found that students who reported a variety of strategy applications scored higher on reading comprehension performance. Their research suggests that greater strategy use is associated with better comprehension accomplishment. The present study aligns with Hamman et al.’s (1996) research in that Jennifer, Kovan, TH, and Niko who reported various types of learning strategies have better performance outcomes in social studies. Conversely, Myra who reported a preferred type of learning preference is associated with less favorable learning outcomes. As a low performer in the class, according to her social studies teacher, Myra could benefit from the CWR by incorporating the use of more learning strategies in order to succeed when learning social studies.
The following discussion focuses on Myra’s view in learning strategies. Myra compared class sharing and self-reflection by outlining that the latter was counterproductive based on her deduction from in-class observations. She commented that writing self-reflection required more structural ways of thinking and that the process inevitably distracted the fluency of one’s thinking progression. She preferred group sharing because it provided opportunities to consider or explore various viewpoints contributed by peers.

Writing can be a challenging task for students, particularly with difficulties such as understanding of the topics, identifying the key concepts of a source, and being uncertain about the appropriate formulas (PEEL or 3A). Before writing an answer, the students need to ensure that a question is well comprehended because it provides focus and direction in terms of gathering information and writing up an answer with supported evidence and clarity. To present a coherent answer, the writing process typically involves multiple steps such as careful analysis, evaluation, and application of a range of social studies skills. Although writing is a challenging task, it is an inevitable practice in a student’s journey as well as a skill much required in one’s career.

In contrast to self-reflection, several participants reported that class sharing enables students to gather opinions, answers, and questions from classmates which can be instrumental to capture and maintain attention. Moreover, group sharing generates a range of multiple perspectives which can be an enriching learning experience. However, written expression in the form of providing an answer is often a method by which learners are asked to demonstrate their knowledge. For Myra to improve her performance in social studies, learning how to write with a plan and clarity are indispensable in her learning journey.
Researchers note that essential writing skills are some of the most critical and motivating factors when composing or writing; and they can help students to better understand content and structure (Wineburg, Martin, & Monte-Sano, 2012). To assist students such as Myra, explicit writing prompts are necessary to facilitate their learning with more types of strategies.

Learners’ perspectives of learning Social Studies. When Matt shared his viewpoint about social studies being a tough subject requiring memorization, the rest of the students agreed by nodding their heads. Some of the participants further pointed out that memorization of keywords, and definitions were instrumental to gain good scores. Wineburg (1996) notes that the instruction of social studies has been historically delivered to emphasize memorization of facts rather than the fostering of critical thinking.

Although the participants agreed that drill and practice or rote learning is imperative to excel in the subject, the constant engagement of drill and practice for the purpose of memorization is not helping students with limited interest to become active or effective learners who would look forward to advance their understanding in social studies.

For the lack of interest students, the memorization process is slow and dull, many of these students prepare upcoming social studies examinations by memorizing the content confirmed by their teachers, and soon after the examinations, they forget the content. These students might have limited opportunities to understand or make sense of issues in social studies. Although memorizing facts can be an important factor, research on experts’ knowledge demonstrate that their usable knowledge is distinctively different from memorizing a list of disconnected facts (Bransford, Brown & Cocking, 1999). Expert knowledge is connected and organized around important concepts; it supports understanding and transfer to other contexts rather than only the ability to memorize.
Take the subject of Geography for an example, a student can fill in a map by memorizing states, cities, and countries, but if the boundaries are removed, the problem becomes difficult for the student because no concepts are there to support his answers. In contrast, an expert who understands that borders developed as a result of natural phenomena such as mountains; and that large cities expanded and flourished in trade due to locations near rivers or ports provide more in-depth conceptual understanding and create a more meaningful map (Bransford et al, 1999). In other words, these researchers are suggesting that learning with conceptual understanding supports thinking about organizing information in an interrelated approach rather than memorization of facts only. To scaffold students’ conceptual understanding, the use of CWR with multiple audio, video, and text links helps to support learning by presenting different concepts through visual and auditory forms for learners to establish connections across various important concepts.

5.2 Discussion: Research question two (RQ2)

**RQ2: What are the SRL learning strategies used by secondary Social Studies students?**

The second research question is addressed by findings four, five, six, and seven. Finding 4 elaborates on students’ key learning approaches.

**Finding 4: Help seeking.** The majority of the participants indicated nonadaptive or dependent help seeking behaviors. Students who ask for help when it is not necessary are referred to as nonadaptive or dependent help seekers. These learners may ask for unnecessary assistance before attempting it by themselves; and they may be more interested in getting the answer than in understanding the assignment (Newman, 2008). They are motivated by work avoidance goals (Newman, 2008). In alignment with Newman’s findings, results from the four
schools indicate that help seeking is not restricted only to the occasion when assistance is truly needed.

Although Newman (2008) points out that students often fail to take the initiative to obtain needed help or sit passively waiting for the teacher to come to them, the present findings indicate that most students do not hesitate to seek help from their teachers. They seek help to find out possible test questions, weightage of marks on different topics, or effective ways to prepare for examinations.

Unfortunately, dependent help seeking behaviour is associated with surface level processing and effort-minimizing learning strategies that can be a more negative than positive learning experience (Graham & Golan, 1991). Learning in this case is not associated with the desire to improve skills or to learn more. Rather, learning is associated with lower levels of engagement, and absence of eagerness to learn more or improve learning, which subsequently increase students’ indifference in considering alternative actions that can be more productive to facilitate rewarding performance.

Notably, for most of the participants, they seek assistance for “just the answer” (Butler, 1998) on how to prepare for examinations and without giving much consideration to actual learning of the subject. Other participants approached their teachers for assistance because they lack self-confidence and have poor perception of their own competence. However, they trust that they can count on their teachers for assistance.

In contrast to dependent help seekers, a few participants reported different help seeking behaviours. For instance, Niko, LKM, and YT requested assistance from their teachers with questions that they did not understand or when they needed clarifications, rather than finding out
how to prepare for examinations. Clearly, they seek help not due to low self-perception of their abilities, rather for the purpose of gathering better understanding on unclear areas. They engage in intentional actions that mediate the relationship between academic difficulty and successful task completion. Newman (1994) describes this help seeking approach as individuals going back and forth between depending on others, pushing toward self-sufficiency, and asking for further assistance. An important aspect of this help seeking is that they are motivated to persist in their effort during their learning which in the short-term help them to solve problems, maintain task engagement, and learn. But in the longer-term, their help seeking behaviours provide them with skills and understanding for handling difficulties in the future.

**Independent learning.** Independent learning, or similar terms such as autonomous learning and self-directed learning, has been advocated and promoted as a major contemporary educational goal (Bolhuis & Voeten 2001; Leathwood 2006). In contrast to help seeking students, independent learners take initiative for their own learning. Unlike their peers who tend to seek help, these learners engage in learning by applying learning strategies which are not commonly reported by other participants. For instance, Kovan engages in self-questioning, and Jai participates in practice testing whereas most of the other students reported using highlighting, underlining, and re-reading.

Independent learners are responsible and take initiative of their own learning; they are actively involved in the learning process by setting goals, monitoring progress, and evaluating learning outcomes (Benson, 2001; Benson & Voller, 1997; Holec, 1981; Little, 2003). One of the remarkable differences between Kovan and other participants is that he focused immensely on source evaluation. While analyzing a source, Kovan actively asked questions, evaluated issues, and examined possibilities before providing a well thought out answer based on rounds of
self-questioning. Cardelle-Elawar (1995) and Pate (2011) found that the use of self-questioning helped junior high and secondary students to be more successful on achievement tests and learning difficult material.

Self-questioning, a strategic approach for monitoring one’s own comprehension has shown promising outcomes for a range of diverse learners across grade and ability levels. Self-questioning helps students to focus on the critical information in the text (Crabtree, Alber-Morgan, & Konrad, 2010). There are several ways students can actively engage in self-questioning to learn more about a text. For instance, ART refers to ask, read with alertness, and tell. First, students read the title of the text and ask two questions. Then, they read through the text and place a checkmark next to each paragraph they understood. This is followed by answering the two questions they generated at the beginning (Joseph, Morgan, Cullen, & Rouse, 2016).

Kovan’s self-questioning approach is dissimilar to ART. Rather, his version is more related to TWA, meaning think before reading, think while reading, think after reading (Joseph et al, 2016). TWA is a more complex version of self-questioning strategy than ART because it requires more question formulation throughout the reading processes. During “the before reading” phase, students ask themselves questions about the author’s purpose, what they want to know, and what they want to learn. In the “think while reading” phase, students connect the topic to their background knowledge and monitor their reading pace to ensure that they are engaging in thinking about the text. During the “think after reading” phase, the students ask and answer questions, identify the main idea, summarize the passage, and identify what they learned.

In Kovan’s reported self-questioning strategy, his questions can be identified in varying phases of TWA. For instance, he questioned about the author’s purpose, and what he was
supposed to learn. These questions are identical to “the before reading”. Furthermore, Kovan attempted to understand a source by connecting to its background through self-questioning such as what was the question about, the title, and where the source adapted from. With these questions, Kovan continued to think about the text while reading, which related to the second phase of TWA. In the last phase, he indicated that after active engagements in self-questioning, he finally provided well thought out answers that were similar to the sequence of TWA.

For academic success, reading comprehension ability is one of the most imperative skills because as students advance through the yearly grade levels, they are expected to independently read and comprehend larger amounts of increasingly sophisticated text. Kovan exemplifies an independent learner who is able to monitor his own comprehension by asking himself a series of self-generated questions before, during, and after reading a source. Kovan’s participation helps to shed light and enrich the understanding of the ways an independent student engages in self-questioning as a monitoring strategy to comprehend and advance in learning social studies.

Jai is another independent learner who demonstrated another important learning strategy: practice testing; an effort not commonly reported by dependent help seekers. To many students, practice testing might be undesirable because the majority of students prefer to take as few tests as possible. However, according to Dunlosky, Rawson, Marsh, Nathan, and Willingham (2013), practice testing via flashcards, answering questions included in textbook chapters, or working on supplemental materials assists students to improve their learning, enhance retention, and recall target information. Practice testing enhances how well students mentally organize information and process idiosyncratic aspects of single or separate pieces of items, which as a whole can support better performance.
Jai unlike his peers who tend to seek help from their teachers; he takes initiative for his own learning by engaging in practice testing via searching for online resources. Although some participants agreed that Google generates a huge number of search results, it requires substantial effort to discern relevant information from irrelevant sources. Thus, to these participants, such processes would be deemed as inefficient or unnecessary. Rather, the dependent help seekers find it sufficient to follow their teacher’s instructions to learn without exploring beyond the predetermined boundary (the textbook). In contrast, as an independent learner, Jai indicates motivation to learn beyond the determined resources, he is keen to learn by engaging in different approaches which provide further understanding while achieving personal satisfaction as he continues to learn more about the subject.

**Memorization.** The participants regularly mentioned that they engage extensively on memorization when learning social studies. Particularly, the lack of interest participants commonly reported the use of rote learning as a way to quickly prepare for examinations by cramming the contents for recalling purposes. Rote learning refers to the memorization of information based on repetition. However, memorization can be overly repetitive, slow and dull, and the constant engagement of drill and practice may not help students to become more active and effective learners, or advance their understanding in social studies. For some participants, memorization of content is soon forgotten after the examination.

Although Bower (1973) suggests that memorization can help with learning basic facts, and leaving more time and opportunities for developing higher order learning; a common criticism of memorization is that it does not help with higher order skill such as comprehension (Putnam, 2015). Leming, Ellington, and Schug (2006) further point out that passive learning
such as rote memorization, note-taking, and worksheets are precisely the aspects that students dislike the most about social studies.

The findings indicate that participants use underlining, highlighting, and rereading to help with their memorization. To students, the underlining and highlighting approaches are simple to use and do not require training or extra time. These approaches accentuate sentences from text, isolate a list of words, and select information to draw the reader’s attention. However, according to Dunlosky et al (2013), these are popular but relatively ineffective techniques compared to more effective techniques such as self-questioning or practice testing. But the latter are underutilized by most participants. It is worth noting that many of the lack of interest students employed these ineffective learning approaches which could undermine their performance and further decrease their interest when learning social studies.

Peterson (1992) further points out that underlining draws the reader’s attention more to individual concepts rather than to connections across concepts. Underlining attracts the reader’s attention more to individual concepts which facilitate the support of memory for facts rather than connection across concepts. Highlighting may affect a student’s performance to engage in higher level tasks that require inference making (Dunlosky et al, 2013). Apart from using underlining and/or highlighting, a reader needs to engage in organizational processes such as deciding which material is more important; thinking about the meaning of the text; and determining how different pieces of text relate to another.

Dunlosky et al (2013) rates highlighting and underlining as having low utility; in other words, these strategies are less effective when compared to the practice testing, which is rated as high utility. Rereading is another frequently reported approach by participants. But, rereading repeatedly is time consuming and some information may be omitted during the process, also
increased comprehension of text is not necessarily assured. Compared to more effective approaches such as self-explanation and practice testing, again, rereading may be less effective for promoting learning. As a result, rereading has been rated as low utility as well. Notably, the rating of these different strategies is based on their effectiveness in assisting learners to gain comprehension of content and make connection across various concepts when completing inference questions. Therefore, the emphasis is placed on conceptual understanding and less on memorization.

Consistently, students endorse the use of underlining, highlighting, and rereading for the memorization of information raise the question that they may be unaware of more effective learning approaches that could help with learning social studies. To motivate participants, specifically, with a lack of interest, it is important to introduce them to a combination of learning strategies that would assist them to gain comprehension of content, and make connection across disparate concepts when completing inference questions. In so doing, students have the opportunity to apply strategies such as self-questioning rather than learning based on repetition, which is what they dislike about social studies.

Prior Knowledge Activation. A few participants, Hillary, QY, and Cindi, mentioned that they applied prior knowledge to help with knowledge acquisition during the CWR activities. Moss and Azevedo (2008) posit that high levels of prior knowledge indicate well-established, and interconnected knowledge of the topic. This level refers to “knowledge verification.” On the contrary, students with low prior knowledge engage on “knowledge acquisition.” Thus, learners with different levels of prior knowledge may verify or acquire the contents differently (Bringula, Basa, Cruz, & Rodrigo, 2016). Although the participants demonstrated low prior knowledge to support knowledge acquisition, they indicated that when faced with a learning task, they
attempted to connect new information to their existing schemas (Van Gog, Ericsson, Rikers, & Paas, 2005).

Importantly, these participants may be more motivated to learn social studies because they experience the benefits of applying what they had learned from out of classroom contexts into classrooms. Pressley, Woloshyn, Martin, King, and Menke (1992) further state that through connecting newly experienced information to prior knowledge, learners are able to construct deep understanding of topics rather than surface-level understanding.

Marton and Saljo (1976), in their seminal work, identified the concept of deep versus surface learning. In the deep learning approach, students look for meaning in the course content and relate it to personal experiences and ideas (Duff & McKinstry, 2007), also, they search for its underlying concerns, implications, and meaning. In contrast, in the surface approach, students uncritically accept ideas and facts and depend on formulas to solve problem; and they memorize information as isolated and unlinked facts. They view text as a collection of discrete units of information that should be memorized in order to answer questions.

In this research, most of the participants did not relate their learning in social studies to personal experiences, and they applied the surface learning approach specifically for memorization of facts to answer questions or prepare for examinations. For instance, Fai, RT, KSH, Steven, Oddie, Rimi, Nelly, and CK demonstrated characteristics of surface learning in that they learned just enough to pass examinations and fulfill the minimum passing requirements of social studies. Biggs and Tang (2007) refer to students who apply surface approach as “corners cutters.”
For some of the participants, they viewed social studies as a relatively unimportant subject, thus, their less than positive perceptions may affect their learning and subsequently result in the engagement of surface learning. Routinely, they regarded textbooks, teachers’ notes, and personal notes as information to be memorized for recall and reproduction purpose, rather than for understanding (Meyer, 2000).

In contrast to surface learning, some participants demonstrated deep learning, they looked for meanings in the course content by relating them to personal experiences and/or ideas (Duff & McKinstry, 2007). For instance, Caleb attempted to establish linkages to other sources he had read in classes, and Kovan looked for similarities or differences among sources in relation to a topic. The participants who used the deep learning approach do not engage in cutting corners such as learning without relating ideas to others or simply memorizing facts and procedures without actively organizing or interacting with content. This deep approach engagement suggested that the participants have a positive view for the subject, thus they treat the course content as something worthy of taking their time to understand, and maintain feelings of interest, challenge, and importance (Howie & Bagnall, 2012).

This finding points to the need for students who are currently using the surface approach to advance to deep learning by developing greater motivation, interest for social studies, and becoming more aware of other learning approaches such as SRL in order to excel in their performance. At the same time, the teachers could assist these students to learn by introducing them to different learning approaches through group discussion, technology integration, or small group presentation.

**Finding 5: Planning increases students’ engagements in learning.** The participants engaged in different levels of planning, some were more effective in their approach than others.
Planning has been described as a set of mental and behavioral operations that bring together cognitive, emotional, and motivational resources in the service of reaching desired goals (Hacker, 1998). Planning refers to a mental simulation of linking concrete responses to future situations (Sniehotta, Schwarzer, & Schu, 2005). Zimmerman and Kitsantas (2003) note that planning is an activity that students do for themselves in a proactive way in which they transform their mental abilities into academic skills. Consequently, planning can be performed because the learners are guided by personally set goals and task-related strategies to enhance their learning.

Using the cyclical self-regulated learning theoretical model, Zimmerman (2013) explains that goal-setting and planning are indications of student-initiated setting of educational goals or subgoals and planning for sequencing, timing, and completing activities related to those goals. The self-regulated learning model consists of three phases: forethought, performance, and self-reflection. Goal setting and planning are two key aspects that reside within the forethought phase, supporting the task analysis component (Zimmerman & Schunk, 2011). Goal setting and planning are considered fundamental skills since they are crucial for an individual’s performance (Locke & Latham, 2006).

In an effort to capture students’ self-regulatory processes such as how to prepare for a test, Zimmerman and Martinez-Pons (1986) developed a structured interview to gather students’ verbal responses. Following is an example of a coded planning strategy: “First, I start studying 2 weeks before exams, and I pace myself (p. 138).” In the current study, one of the students, Jennifer Y, provided a similar response regarding her planning strategy when preparing for examinations; she acknowledged that she used a priority timetable. Usually, one or two months before the tests’ dates, Jennifer Y pushed herself to work harder by managing her time and focused on various subjects. She highlighted: “Two to one month(s) [before exams], I will make
a priority time table.” As a proactive student, Jennifer plans effectively and gains favorable learning outcomes. Stevenson (2016) states that goal setting is closely related to increased time-on-task behavior and reduced latency to task engagement, thus, enhancing academic engagement and student achievement.

In contrast, the students who indicated minimal planning precluded themselves from planning a detailed or specific strategy. For instance, NJ indicated that she set a general goal, whereas Jennifer Y mentioned a specific goal. It is worth noting that a specific goal is more effective than general or vague goals because it is easier to gauge progress towards specific goals. Whereas, general goals, such as those that indicate “do your best,” do not enhance academic attainment reliably (Schunk, 1989).

The comparison between Jennifer Y and NJ suggests that the former had already identified what needed to be done and how to attain or accomplish the goals. Subsequently, Jennifer effectively followed through her planning for performance attainments within the specific time frame of two months period. Zimmerman (2008) explains that effective use of strategies reflects metacognitive awareness in that the student has by then identified key elements to be followed in order to enhance performance.

In addition to the above examples on setting specific goals, an action plan is the origin of an intention to carry out the action, and it serves as a mental model for the ways it is to be executed. Action plans direct attention and effort to the appropriate actions and thereby facilitate their successful execution (Gollwitzer, 1999). The specificity of Kovan’s action plan reflected his awareness of knowing what needed to be identified and how it could be determined in order to enhance performance. Participants in the planning group indicated that the proactive learners select or construct planning strategies to enhance their performance when focusing on task
engagements, which in turn assist their cognition and direct their behavioural commitment (Schunk & Zimmerman, 2008). Notably, they selected specific goals and action plans.

In contrast to the planning group, students in the minimal planning group communicated their planning strategies with unclear indications. For instance, NJ, QQ and AL provided general or vague goals without details on how they would approach them. As a result, their responses indicated that they learn with unfocused plans that are vague and unstructured (Schunk & Zimmerman, 2008). Following is a figure comparing the participants in two different planning groups.

![Figure 5-5: A comparison between students in the two different planning categories](image)

The comparison between the two groups of students, planning versus minimal planning, shows that the latter provided less specific, unfocused and unstructured details when describing their plans of work. Also, some of them failed to follow through their plan suggesting that there
is a lack of commitment to the plan itself (Sheeran, Webb, & Gollwitzer, 2005). This pattern can be identified by Ramon, Fai, Myra, and Norman who provided general plans about their learning.

Additionally, the participants in the minimal planning group had difficulties explaining how their plans could help them to work. But, students in the planning group were more able to provide and elaborate in detail the ways they engaged in their planning processes. However, it is important to point out that students’ differences in planning can be due to a range of reasons such as planning abilities, motivation, or prior knowledge. Subsequently, the actual planning process and the prioritisation of goals also differ in various ways as a result of participants’ perceptions concerning their learning.

**Finding 6: Monitoring increases students’ participation in active learning.** Monitoring refers to the ways learners track their learning activities and outcomes. The monitoring group demonstrated engagement in self-questioning, self-testing, and independent help seeking. In contrast, the minimal monitoring group indicated the absence of self-testing, but active participation in executive help seeking.

Zimmerman & Martinez (1988) posit that improving students’ ability to monitor their task performance might also make them more aware of their learning. The students could apply monitoring as a way to recognize whether information has been comprehended; to gauge whether the comprehended information has been learned; and to identify discrepancy in comprehension for the purpose of triggering corrective procedures for filling gaps in understanding or fixing the errors (Winne, 1995).

To teach students to monitor their comprehension of the text and to become strategic readers, Rouse, Alber-Morgan, Cullen, and Sawyer (2014) suggest the application of self-
questioning. To monitor their reading comprehension, the students engage in self-questioning by asking a series of self-generated questions or teacher-provided questions. For example, Berkeley, Marshak, Mastropieri, and Scruggs (2011) trained seventh grade students from three inclusive middle schools to use headings and subheadings to develop their self-questions for social studies’ reading materials. Other self-questioning studies engaged middle and high school students to identify main ideas and details in a text (Jitendra, Cole, Hoppes, & Wilson, 1998; Jitendra, Hoppes, & Xin, 2000).

In social studies classes, textbook content may include multisyllabic technical words, various text structures, and a dense amount of unfamiliar concepts and facts (Bryant, Ugel, Thompson, & Hamff, 1999; Mastropieri, Scruggs, & Graetz, 2003). The students are required to read and demonstrate knowledge gained from their reading based on different topics. To monitor their own reading comprehension, students must learn to engage in self-questioning by asking themselves questions such as “Is this strategy working, or would another one be more productive?” and “Is this a reasonable answer, given the problem?” These simple heuristics provide opportunities for self-correction which assist students to quickly and effectively assess their work; and at the same time help them to monitor their performance (Ambrose, Bridges, Lovett, DiPietro & Norman, 2010).

This research found that monitoring and minimal monitoring participants differ; the former shows engagement in self-questioning. The monitoring group monitored their learning to keep track of their academic performance, to help with understanding of novel concepts presented in various types of sources, and correct or evaluate their performance if necessary to improve their learning.
The monitoring group provided clear examples of the ways they monitored their learning while going through the activities (the monitoring process), and after the activities (the post-hoc monitoring process) as suggested by Florian et al (2013). For instance, AL demonstrated that when learning complex issues, it is important to monitor and self-correct one’s learning in order to obtain better outcomes.

This is another distinction between the monitoring and minimal monitoring students, the former showed that they were more aware of the usefulness of using different strategies when encountering learning challenges. In contrast, the latter showed less awareness and had fewer options partly because they relied on few strategies. For instance, NY, JT, and YSL indicated that they did not know the effective questions that needed to be asked. This finding indicates that students who monitored their learning knew the effective questions to ask themselves, whereas students in the minimal monitoring group either asked trivial questions or do not ask questions (Pratt & Urbanoski, 2015).

In addition, the two groups indicated further differences in self-testing. Self-testing involves answering practice questions about previously learned material (Fiorella & Mayer, 2015). The minimal monitoring group indicated the absence of self-testing when studying or preparing for their courses or examinations. They reported restudying of their notes, teacher’s notes, textbooks, or past assignments.

Self-testing can be effective for retaining basic factual information and complex conceptual knowledge that require inference making (Fiorella & Mayer, 2015). A large-scale study that surveyed 177 undergraduates on self-testing found that although the use of self-testing and flashcards were reported, the most frequently reported strategy was rereading notes or textbooks (Hartwig & Dunlosky, 2012). The results were consistent with studies from Kornell
and Bjork (2007), as well as McCabe (2011) who also found that students often fail to recognize that testing, compared to restudying, is more likely to enhance learning. Likewise, this finding reported that rereading was one of the commonly reported strategies particularly in minimal monitoring group.

The participants who do not use self-testing for content subjects may have limited repertoire in their learning strategies and/or be unaware of the benefits of self-testing. In their research, Dunlosky, Rawson, Marsh, Nathan, and Willingham (2013) found that most students do not use self-testing and that they are metacognitively unaware of the benefits of repeated testing. Kirby and Downs (2007) further state that students can be overwhelmingly unaware when it comes to self-assessing their understanding levels.

In the monitoring group, Jai and LKM reported the use of self-testing to help their learning. Jai and LKM exemplified that self-testing is a highly versatile learning strategy that can be applied across domains, and it does not require training. Furthermore, other participants also reported the use of several strategies for monitoring purposes. For instance, Niko integrated several strategies such as note-taking, flashcard, checking with peers and teacher in order to effectively achieve optimal learning outcomes. Fiorella and Mayer (2015) refer to the use of several strategies as strategy clusters; they explain that the use of several strategies enables students to build connections among concepts, elaborate on content material, and test one’s understanding and knowledge.

Although Siegler (2000) remarks that it is the norm that individuals use a variety of strategies, the finding in this research indicates that the norm points to the fact that most students do not use a variety of strategies. Rather they preferred to seek help from their teachers. In finding 4, one of the categories highlighted dependent help seeking behavior.
Commonly, participants from the minimal monitoring group reported checking with their teachers as a form of monitoring their learning. For instance, some of the students requested assistance from their teachers to find out how to prepare for examinations. Other students sought the teachers’ help to gather better understanding of unclear areas. Much as help seeking is consistent with the role of students who would be expected to seek out teachers for help, it is important to note that role expectations for students also involve demands for ever-increasing displays of individual competence in academic performance (Nelson-Le Gall, 1985).

Although a teacher or a more experienced peer is capable to provide a learner with scaffolding to support evolving understanding of knowledge domains or development of complex skills, it is expected that students will gradually not need the scaffolding. Through interaction with the capable ones, the learner gradually internalizes the knowledge and skills into one’s mental structure and begins to perform the higher order function for himself or herself (Vygotsky, 1978). However, most students in the minimal monitoring group indicated that they seek their teachers’ assistance merely for task completion without focusing on mastery or deep comprehension as an objective.

Nelson-Le Gall (1985) suggests that there are distinctions between students’ purposes of help seeking. The author refers to executive help seeking as a student’s intention to have someone else solve a problem or attain a goal on his or her behalf. A student seeking executive help appears to be more interested in the product or successful outcome than in the processes or means of achieving the outcome. Therefore, to these students, direct help and ready-made or instant solutions would be of interest to them.

There are some problems that undoubtedly call for help seeking, but continued reliance on others to provide executive help seeking can be detrimental for the development of
independent mastery and might induce dependency (Nelson-Le Gall, 1985). Notably, the findings from the minimal monitoring group suggest that most students displayed characteristics of executive help seeking behavior which could lead to dependence on the teachers for correct performance of task completion. See figure (Figure 5-6) for comparison between minimal monitoring and monitoring groups.

![Diagram: Monitoring vs. Minimal Monitoring]

**Monitoring**
- Apply self-questioning and self-testing for monitoring purpose
- Demonstrate instrumental help seeking behavior
- Use a variety of strategies to help with monitoring process

**Minimal Monitoring**
- Do not use self-questioning or self-testing, frequently use rereading
- Exhibit executive help seeking behavior
- Indicate a lack of awareness in monitoring, and apply limited monitoring strategies

13 Figure 5-6 Monitoring differences between the two groups of students.

In contrast to executive help seeking, students in the monitoring group appeared to focus on processes of problem solving in order to attain optimum outcome. Nelson-Le Gall (1985) describes this approach as instrumental help seeking because the requested help appears to be focusing on processes of problem solution. Instrumental help seekers are able to refuse help when they can perform a task independently, yet, they can obtain help when it is needed.

Instrumental help seeking may serve as a transition from other-regulation to self-regulation in problem solving which is more in alignment with Vygotsky’s theory in which the learners internalize the knowledge and skills learned from social interaction into their mental structures and subsequently they are more capable to perform higher order functions. The
interaction process of other-regulation (interpsychological; between people) to internalization process of self-regulation (intrapsychological; within the learner) is crucial in facilitating the learner’s cognitive development, and evolving understanding of knowledge advancement. In essence, instrumental help seeking is meaningful to the demonstration of individual competence in students (Nelson-Le Gall, 985).

The differences between the monitoring and minimal monitoring groups draw attention to the fact that the nature of help seeking varies and that it could either promote or hinder students’ learning (Kareabenick & Newman, 2006; Ryan & Shim, 2012). Specifically, the findings indicate that students engaged in executive help seeking requested quick answers and solutions.

Ryan and Shim (2012) note that over time executive or expedient help seeking will be associated with lower grades because students are not really learning. They explain that as the year unfolds, new topics rely on previous knowledge, the lack of which leads to tendencies to engage in executive help seeking. The inclination to request quick answers and solutions affects students’ learning in devoting time and effort to gain deeper understanding of the subject matter. Subsequently, executive help seeking may undermine students’ learning and their achievement (Butler, 1998; Nelson-Le Gall, 1981; Newman, 2000).

These findings further indicate that there are meaningful relationships between students’ levels of monitoring behaviors and their strategies used. The more they apply monitoring, the more likely that they realize the need for better strategies to be implemented (Dunlosky & Thiede, 2013; Ben-Eliyahu & Bernacki, 2015). Overtime, they are more willing to apply effort to monitor their learning progress and outcomes due to increasing efficiency as Zepeda et al (2015) state that students who are able to monitor may make better decisions about how to manage available resources and effort.
Although the minimal monitoring students may acquire novel and more effective strategies over time, currently they are not aware of the benefits of monitoring their learning through active engagement. To advance through different grade levels, learners constantly face progressively challenging and diverse types of learning in which they must understand and apply, it is therefore important that they are being introduced to monitoring strategies which could help to identify key information and make connection through simple strategy such as phrasing ideas in the forms of self-questions.

**Finding 7: Self-reflection decreases students’ participation in learning.** Reflection refers to a process in which a student looks back on the learning experience in order to obtain new perspectives and inform future behavior (Boud, Keogh, & Walker 1985). The ability to reflect and to learn from one’s learning experience is a fundamental skill for learning.

Dewey and Schon are the two formative scholars who provided seminal roots of the current notions of reflection (Mezirow, 1990). Dewey (1938) depicts reflection as looking back to what has been done in order to extract meanings to help with further experiences. Schon identifies reflection as: (1) reflection-in-action; and (2) reflection-on-action. The former is linked to a learner’s immediate behavior. The latter refers to reflection after the event; it provides insights that can improve future practice (Koole, Dornan, Aper, Scherpbier, Valcke, Schotanus, & Derese, 2011). Schon (1983) further distinguishes an expert and novice by their ability to reflect when dealing with complex cases.

The practices of reflection have been widely researched in many areas: higher education (K. P. King, 2004; Kitchenham, 2006; Kreber, 2004; Kreber & Castleden, 2009); medical and health professional education (Keevers & Treleaven, 2011; Mann, Gordon, & MacLeod, 2009; Wald, Borkan, Taylor, Anthony, & Reis, 2012); and leadership development (Li, Gray, John
Subsequently, the concept of reflection is commonly found in disparate contexts based on divergent frames of reference. As a result of its wide usage, it is noted that there is an element of confusion within the literature (Kember, McKay, Sinclair, & Wong, 2008). For instance, Rose (2016) states that reflection has been overused indiscriminately and that it has become a formulaic function to inhibit deep thought. In essence, she claims that reflection has become a mind-numbing substitute for engaging in the real thing (Rose, 2013).

The current findings indicate that some participants’ responses, particularly in the first school, concur with Rose’s statement in regard to the ways reflection has been overused. In the first school, almost all of the participants considered self-reflection to be an unmeaningful task because since secondary one to four, they were asked to perform the same type of reflection task either on their own learning or on their teachers’ teaching. In addition to their opposition, they disapproved of the fact that the reflection questions remained largely the same throughout. They demonstrated what Rose (2013) pointed out earlier that reflection has become a mind-numbing exercise rather than encouragement to participate in reflecting how they could benefit from past learning experiences and inform future behavior.

Likewise, some participants from the third school stated that based on their observations and conversations with classmates, they firmly believed that the practice of reflection is ineffective for learning. Rather than engaging in reflection, these students recommended different approaches which they deemed to be more productive. They proposed group sharing or the teacher’s assistance because the reflection process is lengthy, time consuming, and requires structured writing. According to them, some students preferred to copy from their peers instead of thinking and writing down what they learned from a class.
These students point out an important factor which is the current practice is inhibiting them to engage in reflection. The teachers need to change how reflection is being conducted in classrooms. According to the participants, normally the reflection activities were done through written responses. They were asked to respond to questions such as what they had learned after a class by writing down their responses. The participants expressed their distaste for such reflection questions. But without reflective engagement in an activity, students’ participation and output may be meaningless. To support reflection, the teachers could provide guidance on students’ ability to think reflectively, for instance, by introducing them to the various levels of reflection displayed in an activity.

As Kember et al (2008) point out when writing reflection, there are different levels of comprehension to be observed: (1) Habitual action; (2) Understanding; (3) Reflection; and (4) Critical reflection.

First, habitual action occurs when students search for material on a topic and place it into an essay without thinking sufficiently, trying to understand the information, or forming a view about it. Second, understanding indicates that concepts are being understood yet without being related to personal experience, thus, there are no personal meanings and limited assimilation as well as retention. Third, reflection suggests linkages to personal experiences. Concepts will be interpreted in relationship to personal experiences, and personal insights beyond the textbook are provided. Lastly, critical reflection is the higher level of reflection. It is unlikely to be a common outcome because it requires evidence of a change in perspective over a fundamental belief.

In this research, the findings suggest that there are writing differences between self-reflection and minimal self-reflection students. For instance, in chapter four (p. 216), the table: a comparison of CWR online responses from participants of self-reflection and minimal self-
reflection; shows that the former provided longer responses with indications of understanding.

The students in the self-reflection group demonstrated levels two and three, which is understanding and reflection, whereas, students’ responses in the minimal self-reflection group are in alignment with level one, which is habitual action. Refer to *Figure 5-7*, for more detailed comparison.

*Figure 5-7 Differences between the two groups of students*

Take the secondary four minimal self-reflection student, YSL’s response (level one, habitual action) for an example; she responded to the self-reflection question in the globalization activity by providing an answer without indications of understanding the concept that underpins the topic.

In the case of a self-reflection student, Jennifer Y (level two, understanding), her response can be distinguished from YSL’s answer by showing an understanding of the author’s underlying concept and meaning. Jennifer Y’s writing demonstrated that she formed a deeper view of the construct globalization. Jennifer’s understanding of the concept is a correct rendition
drawn from the source; however, she could have provided examples on how the concept relates to her personal experiences.

Another self-reflection student, CT’s response (level three, reflection) established linkages by relating the concept to her personal experience in Singapore. She provided insights regarding the impacts globalization could have on Singapore business. CT reflected the concept of globalization in relationship to her personal experience by linking the concept and experience in demonstrating her understanding of the topic.

The secondary three students’ written responses between the reflection and minimal reflection groups indicate similar findings as secondary four students. In the minimal self-reflection group, both TH and Maco’s written responses are in alignment with level one, habitual action. Their answers suggest the needs for substantial thinking and effort in their writings in order to form a conclusive view with supportive evidence or personal experience on the concept.

In the self-reflection group, Niko’s written response suggests alignment with level two and three, understanding and reflection. His response forms a view on the importance of developing skills throughout one’s life to get out of the poverty trap. He stressed the point that disregarding where the starting point may be for some, there are available resources for individuals to develop necessary knowledge and skills. Niko’s answer linked up the concepts of SkillsFuture in relation to development of knowledge and experience in assisting individuals to break out of poverty. In short, he related the concept of poverty to a practical situation which is the consideration and application of future skills development.

At this point, it is important to note that the majority of secondary three students shared similar views as secondary four students in which they considered the practice of self-reflection
as ineffective for their learning. As a result, many participants did not complete the reflection question embedded in the CWR. With the few who completed the reflection question, their answers indicated the pattern of habitual action, meaning there is a need for them to be more reflective in thinking, understanding, or forming a more comprehensive view about the topic they learned.

The above findings support the research conducted by Lew and Schmidt (2007; 2011) in which they reveal that some polytechnic students view journal reflections as “mechanical and meaningless” in addition to regarding the reflection task as “non-beneficial” in their learning.

Moreover, some students in the minimal self-reflection group indicated misconceptions about self-reflection. For instance, Jai characterized self-reflection as knowing the cause of one’s mistakes; and Caleb claimed that it is pointless to reflect on one’s mistake after the examination since nothing can be done or follow up with.

Drawing from the participants’ responses on linking self-reflection to identifying one’s mistakes, the findings suggest that there may be a gap within students’ conceptions of self-reflection. Consequently, students do not agree with or see the benefits of reflecting on their mistakes in order to further improve on learning. Reflections on self-made errors during the learning process are considered necessary to advance effective learning and knowledge acquisition (Borasi, 1994; Siegler, 2002), because reflections help students to improve on the understanding of their cognitive functioning; and in turn support their learning (De Corte, Verschaffel, & Eynde, 2000; Ramdass & Zimmerman, 2008).

More specifically, reflections on one’s mistakes assist learners to experience conceptual change by becoming more aware of effective or ineffective strategies (Heemsoth & Heinze,
2014). Reflections on mistakes or incorrect answers further encourage a learner to rethink about possible solutions and eventually be able to avoid making the same error (Anderson, 2010).

During the learning process, it is inevitable that students make mistakes, but analysis of errors can provide them with ample opportunities to think about what went wrong; become more aware of their common mistakes; and find the right approach that differs from the current one to improve their learning. Self-reflection on one’s mistakes serves to identify and determine one’s weaknesses by developing strategies to improve on future tests (Benson & Zhu, 2015). Similarly, for teachers, the identification of gap in students’ self-reflection is essential to find ways to assist their learners to think differently or understand that reflection can be used as a guide to review and self-assess their own performance in preparation of future examinations but more importantly ongoing learning for personal and professional benefits.

5.3 Conclusion

The study extended on the work of earlier research in the areas of students’ perceptions on technology implementation, conceptions of learning related issues, and application of self-regulated learning strategies such as planning, monitoring, and self-reflection.

The findings indicated that most students found the utilization of the CWR motivating, particularly those who showed less interest in social studies. With the CWR, the disinterested students found an alternative approach to understand multiple perspectives of real-life issues through the multifaceted capabilities of technology. The findings suggested that to sustain and develop students’ interest in learning social studies, the CWR can be an important scaffolding tool in drawing their attention to learn more about the content. These lack of interest participants were mainly from low and mid performing groups, to assist them to improve on their learning,
the schools should consider implementing technology-based programs to narrow the gaps between high and low performances.

Across the four schools, the students indicated similar learning challenges particularly during source analysis. As a result, the majority of the participants supported the SRL prompts embedded in the CWR due to explicit guiding questions that directed their attention to focus on the source content. At the same time, the SRL prompts guided them to extract and evaluate more important information from less important when reading a source. The findings highlight the need to create and provide opportunities for students to regulate their learning by considering how effective SRL learning strategies can be embedded within ongoing instruction for students to attain clearer understanding of source analysis.

One of the reasons for some participants to have a lack of interest is because they do not see linkages between learning social studies and future employment. As a result, they invest less time and effort. Commonly, the students look forward to engage in professions in the areas of business, finance, and technology-related fields. For these reasons, the CWR plays a role in mediating connection between personal interest in technology and learning of social studies because technology is widely used in various contexts. The CWR can be a scaffolding tool to foster interest development and at the same time to address the important issue of how to engage students to better learn social studies.

To learn social studies, most of the students adhere to dependent help seeking which is associated with surface level learning (Graham & Gola, 1991). Only a few of them indicated independent learning. Surface level learning is correlated with lower levels of engagement, and absence of eagerness to further improve learning. To learn the content, the participants engaged
extensively in memorization. However, it is important to note that rote learning being a passive learning approach, is one of the reasons why students dislike social studies.

Consistently, students endorsed the strategies of rereading, highlighting, and memorizing of information to help with learning of social studies. Thus, it raises the questions of students’ awareness with application of more effective learning approaches. Although only a few students mentioned the use of prior knowledge to support knowledge acquisition; these were the more motivated students who had experienced the benefits of applying informal learning into a formal classroom context.

To motivate the disinterested students, it is necessary to introduce them to a combination of learning strategies and provide opportunities to build prior knowledge. In this case, the CWR with its SRL scaffolding tool can be effective in facilitating these learning opportunities. Likewise, the teachers could introduce their students to SRL through group discussion, technology integration, or small group presentation.

In regards to the students’ SRL learning strategies, the majority engaged in minimal planning, monitoring, and self-reflection. Their application of SRL differed from Zimmerman’s SRL model (2003) in which SRL is presented as a cyclical or recursive progression of three phases. The participants did not progress through these phases; rather, most of them regarded the self-reflection phase as meaningless or non-beneficial for learning because since lower secondary years, they were frequently asked to reflect. To support students’ self-reflection on learning performance, the teachers could introduce the various self-reflection levels including their differences. In conclusion, the current findings suggested that students can benefit from learning SRL because most of them continually using ineffective strategies to help with learning of social studies.
5.4 Implications

First, for educators who seek to assist and improve students’ learning, this research suggests that explicit SRL prompts can enhance the learning experience by introducing key procedural steps, and providing guided practice of SRL. Following the initial introduction to SRL, continued instruction and practice with support from teacher-guided scaffolding are necessary. After the CWR lessons, teachers could assist students to tap their prior knowledge related to classroom learning. In this way, a teacher encourages learners to immediately focus on the goals of the lesson and build background knowledge. By presenting learning material before engaging students in an assignment helps to build and enhance prior knowledge.

Second, the results of this study are important to inform students, teachers, and policymakers that a different set of competencies such as SRL or learning to learn are increasingly needed for 21st century skills. As pointed out by the Education Minister Ong Ye Kung (2018), to assist students’ learning in an uncertain, fluid future whereby technological advancements rapidly put an expiry date on the skills and knowledge acquired in schools, it is crucial for educators to ensure that students become resilient, adaptable, and willing to learn for life. As a result, the broader objective of education is for students to leave the school system with a sense of curiosity, and eagerness to learn for the rest of their lives.

Presently, when learning social studies, many students use inefficient learning strategies and rely on their teachers for direct help and instant solutions rather than developing independent regulatory strategies for task completion. Over time, the tendency to seek quick answers or solutions may undermine learning and achievement. To prepare for lifelong learning, students need to take ownership of their learning, set specific learning goals, and reflect on their cognition.
processes in order to advance effective learning and knowledge acquisition. However, as stated in this research, almost all students think that reflection is not necessary for their learning.

To encourage students to reflect, teachers could engage them in reflection by verbalizing, sharing, and analyzing in a step-by-step approach. In this way, students can become more aware of their cognitive procedures by comparing them to the ones being employed by other students. By verbally sharing reflections, students could identify flaws in their own thinking and gradually construct more effective procedures (Beyer, 2008).

Third, this research further indicates that the majority of students reported their consistent need of teachers’ assistance to prepare for examinations. This raises another important point concerning the purpose of learning social studies: Do students learn it mainly for the purpose of passing examinations? Likewise, do teachers teach social studies for students to pass examinations solely; are they preparing them to become critical thinkers? More importantly, are teachers assisting students to meet the syllabus which can be characterized by values such as risk taking, adaptability, and lifelong learning? These are important questions for policy researchers or makers to consider during implementation of policies to raise academic and learning processes as well as outcomes. By taking into account the ways how students approach learning, teachers’ classroom practices, and school culture may help to fine-tune the current approach to social studies learning.

Finally, this research is useful to expand understanding of SRL, particularly, its difference with the model proposed by Zimmerman. Briefly, according to his model, to learn, students use a variety of strategies to regulate certain cognitive, motivational, and behavioural characteristics. SRL is perceived as more continuous, recursive, and related processes composed of planning, monitoring, and self-reflection.
The above SRL hypothesis might need to be explored further because the participants reported highly negative responses with the self-reflection process. They demonstrated engagements in planning and monitoring but a lack of participation during self-reflection. The findings indicate that they did not participate through the recursive processes as the aforementioned SRL model.

Furthermore, Zimmerman (2009) states that learning occurs as a result of a learner begins his/her work based on personal initiative, adaptive skills, and perseverance. The current research further adds that learning occurs as a result of relevancy. It happens when a learner sees the connection between learning the content through technology and career aspirations.

This research opens a new line of work to be explored in areas of: SRL and technologies; self-reflection as in whether students demonstrate uniform or recursive SRL behavior; and how teachers can maximize a classroom environment that is conducive toward learning goals. Essentially, educators need to facilitate classroom climate for SRL in order to assist students partake in the journey of lifelong learning.

5.5 Limitations

The four components of trustworthiness, as noted by Letts, Wilkins, Law, Stewart, Bosch, & Westmorland (2007) are: Credibility, Transferability, Dependability, and Confirmability. By making reference to these components, I address the limitations of the current research.

First, Credibility refers to the “true” picture of the research phenomenon. One of the ways to ensure credibility include collection of data over a prolonged period of time and from a range of participants. Although the current research employed a range of participants from different schools, cultural groups, and gender, it did not collect data from these different students
over a prolonged period. Each school implemented one digital activity with either single or multiple classes. The current study was conducted over a relatively short period of time in each school, thus, it is possible that a longitudinal study with more digital activities and over two to three years may produce richer perspectives in relation to the progressive impact of technology integration and students’ learning perspectives in social studies classes.

Furthermore, the use of a variety of methods to collect data is another approach to ensure credibility. This research employed two data collection methods: focus group interview and students’ online responses. During some of the focus group interviews, students who were more vocal and active might have affected other participants’ views and subsequently influenced their responses to comply with a specific attitude, concept, or idea. Likewise, participants who felt peer pressure might have provided similar answers to the researcher’s questions. Moreover, during the implementations, the teachers from different schools formally introduced the researcher to their students whom then helped the students with their questions in unclear areas or technical related issues. Thus, during the focus group interviews, some participants might conform to a topic of discussion in order to be polite or respectable with the researcher who happened to be the interviewer. Therefore, an additional form of data collection such as self-report questionnaire could better represent the larger students’ population.

The second component, Transferability refers to whether the findings can be transferred to other situations (Letts et al, 2007). Transferability is ensured through adequate descriptions of the participants and the setting. In chapter three: the research methodology, under the methods section, the researcher provided detailed descriptions of the participants. More elaborated delineation of the participants’ responses is presented in the chapters of findings and discussions concerning their responses. However, transferability of the current CWR learning environment to
other settings could be challenging because the current version of the CWR is inoperative due to upgrading and refinement issues. Without the customized computer platform, expertise in knowledge and experience in operating the system, it would be highly unattainable to transfer the utilization of the CWR to other contexts.

The third component, Dependability, refers to the clear explanation of the process of data collection, analyses and interpretation, which is indicated by evidence of an audit trail or peer review. The researcher clearly addressed this category by delineating the process of data collection in chapter three; providing extensive analysis of the collected data in chapter four; and by discussing in length the interpretation of the data in chapter five. All these chapters contributed to the formation of the audit trail, which was presented for the readers to gain extensive insight into the methodology used in this research.

The final component, Confirmability refers to the strategies used to limit bias in the research. It can be enhanced by the researcher by verifying with an expert colleague throughout the process, and by checking with a team of researchers. Since the qualitative nature of the current study required interpretation of the collected data, and because the researcher was involved in all phases of the data collection and analysis, it is possible that biases could impact the study. Nevertheless, to avoid potential biases during data collection, the researcher verified with her research supervisor the initial list of focus group interview questions. Based on the feedback, she revised and refined the questions before conducting data collection. Again, during data analysis, the researcher verified with the supervisor regarding the analytical processes, the categories, subcategories, and findings’ developments. However, during the analysis phase, the researcher coded the data without working with another researcher as a coder. Indeed, a coder
with different perspectives would help to negate possible potential biases and to reach a consensus on categories and themes.

Finally, in addition to the four components mentioned above, another limitation of the current research points to the lack of external feedback from the teachers concerning the embedded SRL lenses. Arguably, to have the teacher’s feedback on pedagogical relevance, learning effectiveness, and students’ acceptance levels would be helpful for future studies.

5.6 Directions for future research

Technology implementation is a complex process requiring extensive collaborative efforts from the participating schools, HODs, and teachers. To further the strand of research initiated by the current exploration would require the development of a comprehensive multi-year research plan for preparation, implementation, and further deployment of the CWR as a multi-representation learning environment into secondary social studies classes. More importantly, in an increasingly complex technology driven society, the CWR can be instrumental in assisting unmotivated students to become active learners with awareness of their learning through self-regulatory behavior such as monitoring one’s learning process and outcome.

To expand the boundary of learning primarily within a text-based classroom, it is recommended that participating teachers from different schools continue to implement the utilization of the CWR as activities to enhance students’ perspectives of the connectivity between the global world and Singapore. In the current investigation, teachers from different schools gathered and further refined the second activity while those new teachers who were first time users were introduced to the navigation of the program. Due to its user-friendly features, teachers quickly became familiar with the system. Nevertheless, prior to the implementation, it is
essential to provide professional development particularly for new teachers who look forward to partake in the journey of technology integration.

Further studies into the effect of technology and students’ learning point to the need for a mixed method study in which a quantitative study to measure students’ ability to learn across two to three years would be valuable. To find out students who demonstrate minimal regulatory behavior would eventually become more motivated or aware of their learning, a direct comparison of their learning outcomes from secondary two, three, and four can provide greater insights of the ways in which students benefited from technology integration. Furthermore, a mixed method approach to follow students learning over a few CWR activities would be a valuable and valid pursuit in gaining deeper understanding because the current study with only one activity per class is one of the threads in a much larger tapestry.

To better assist students in their understanding of social studies, an inclusive model of learning within the subject could include self-regulated learning strategies; multiple links for active inquiry; and resources for self-testing purpose. With this embedded model within the CWR, students may develop strategies for purposes of self-directedness. An integrated instructional model of this kind would necessitate a shift from a curriculum that is textbook driven to a more comprehensive approach that can meet a range of diverse learners growing in today’s technology age.

Additional future research on this inclusive learning model of social studies could be expanded to a different topic such as History. The implementation could be modified to address the content area of History. Similarly, it would be beneficial to follow students from lower secondary to upper secondary in order to gain valuable information on students’ progression as a result of technology enhancements. The addition of a different subject and content area provides
triangulation of multiple data sources in areas of students’ online responses, focus groups discussion, and teachers’ interview. It is important to note that to further enhance students’ learning progress, teachers’ perspectives in how students learn should be included to fine-tune the implementation.

Future research needs to explore teachers’ perspectives in the following areas:

(1) Based on the implementation, what types of learning outcomes would they like to see in students?

(2) What are the essential concepts students need to master in order to understand a main concept? For instance, to demonstrate understanding of the topic in globalization, students may need to show comprehension of the economic impacts it has on countries, companies, and individual.

(3) What are the criteria or guidelines for students to demonstrate that they have gained understanding of the concept such as globalization?

These questions reflected teachers’ perceptions of learning; it helped to shed light not only during content construction for the CWR but also for the evaluation of students’ learning outcomes in the case of online responses. Notably, teachers could facilely use students’ online responses to understand comprehension levels; infer potential reasons for the various levels achieved by students; and select relevant content to reinforce areas that students have difficulties with. Future research can focus on how best to assist teachers to work with online data gathered from students.

Moreover, future research could also investigate students’ views of learning after being immersed in a technology integrated curriculum. The same students’ online responses from one activity to another could be compared for indications of improvement. For instance, the current
findings indicate that students gave little importance to self-reflection; they questioned the purpose of it because they had been through reflective exercises since secondary one. Although addressing students’ misconception on reflective habits could be a challenge (Jaschnik, 2011), it is worthwhile for future research to reintroduce students to self-reflection which can change learning experiences; highlight the importance of being a reflective learner in a knowledge-based society; and raise their awareness of self-reflection as an inseparable component in any leaning initiative.
6. References


7. Appendix A: Student Assent Form

**Project Title:** Using a Web-Based Tool to Guide Self-Regulated Learning in Secondary Social Studies Classrooms

**Principal Investigator:** Dr Mark Baildon (Associate Professor, Humanities & Social Studies Education, National Institute of Education)

**Researcher:** Lim Seo Hong (PhD student from Humanities & Social Studies Education, National Institute of Education, Contact: shlims@gmail.com)

In this research study, we will look at the use of self-regulated learning strategy in helping you to better support your learning within a web-based learning environment such as the Critical Web Reader (CWR). The CWR is an educational tool that helps students reading information sources on the internet.

We would like to invite you to participate in this study because you may help us to find out the best way to assist students in their learning. During this study, a researcher would review your work with the CWR, and you would be invited for a focus group interview. If you say yes, you will have to attend an interview that will take about 45 minutes to an hour to complete.

You can choose to be in this study or not. You do not have to participate in this study, even if your parents say you can. Your grade in this class will not be affected by your choice. If you agree to be in this study but change your mind about it later, you can stop participating in the study.

Information about you and data collected from you will be kept confidential, with access restricted to the researcher in the study. Only summarised data will be used in the reporting of
findings. You will not be identified in the summarised data that might or might not be used in subsequent studies and publications.

ASSENT

This research study has been explained to me and I agree to be in this study.

_________________________________________  __________________________
Your Name                                      Date

Alternatively, check the box below if applicable.

☐ The participant is not able to read the assent form. The information was explained verbally and he/she agreed to participate in the study.

_________________________________________
Name of the Person Conducting the Assent Procedure (Print)

_________________________________________  __________________________
Signature                                      Date

*Please note that the current research has been reviewed and approved by NTU, Institutional Review Board (IRB). For more information, please contact: irb@ntu.edu.sg.
8. Appendix B: Parent Consent Form

**Project Title:** Using a Web-Based Tool to Guide Self-Regulated Learning in Secondary Social Studies Classrooms

**Principal Investigator:** Dr Mark Baildon (Associate Professor, Humanities & Social Studies Education, National Institute of Education)

**Researcher:** Lim Seo Hong (PhD student from Humanities & Social Studies Education, National Institute of Education, Contact: shlims@gmail.com)

Dear Parent/Guardian:

In this research, we aim to investigate the use of self-regulated learning strategy in assisting students to work with information sources found on internet. The project will utilise the web-based educational tool, the Critical Web Reader (CWR), to gather understanding concerning students’ self-regulated learning skills and learning strategies in general. Self-regulated learning refers to a process in which learners are becoming more aware of their learning.

Briefly, the CWR is part of a project at Indiana University (Bloomington, Indiana, U.S.A.) and the National Institute of Education (Singapore) that studies how learners evaluate web sources of information and how teachers can use the CWR to support students’ learning.

To find out how the use of CWR can help students improve their self-regulated learning skills, your child will be using the CWR to acquire skills and knowledge necessary through the activities designed by various school teachers and the researcher. Your child may be asked to participate in a focus group interview after classes (about an hour, and to be conducted in school).

Participation in this research project is voluntary. If you give consent now, you still reserve the right to discontinue your child’s participation in the study at any time and your child’s data will not be used. There are no foreseeable risks with participation in this study. Whether or not your child participates in this research project will have no effect on his or her standing or grades in school.

Information about you and data collected from you and your child will be kept confidential, with access restricted to the researcher in the study. Only summarised data will be used in the
reporting of findings. Your child will not be identified in the summarised data that might or might not be used in subsequent studies and publications.

The findings of this research can contribute to important understandings of the ways students can become better learners and to experience academic success. This research helps to inform teachers how to better assist students’ learning and thinking skills.

The results of this research will be treated as confidential, with access restricted to the researcher taking part in the study. In any reports of research findings, your child will be given a pseudonym. No real names will be used in publications from the research. If you have any questions at any time about the study or the procedures, please contact me:

Lim Seo Hong, Researcher, and PhD student @ 97156126

*Please note that the current research has been reviewed and approved by NTU, Institutional Review Board (IRB). For more information, please contact: irb@ntu.edu.sg.

**Consent**

I have read this form and have had all my questions answered to my satisfaction. I agree to allow my child to take part in this study.

If you agree for your child to participate, please sign as indicated below. Please retain a copy of this letter for your records.

Child’s name (please print): ________________________________

Parent’s name: _________________________________________

Parent’s signature____________________________ Date _________________

Consent form date: __________________
9. Appendix C: Interview Questions for Students

Research Questions (RQs):

RQ1: To what extent is the CWR useful for Secondary Social Studies students to become more aware of their learning?

RQ2: What are the SRL strategies used by Secondary Social Studies students?

Introduction:

Thank you for attending this interview. My name is Seo Hong, and I am a PhD student from NIE. The session may take about an hour to complete. The purpose is to find out your views and experiences with the CWR activity; what were the challenges you might face during the learning process; and if you apply learning strategies to help with your learning. Your responses will be recorded, transcribed, and be kept strictly confidential. In any written report, your name will appear as anonymous. Before we start, do you have any questions? If not, we will start with the first question.

1. What do you usually do before starting an activity? Do you start with a plan, or how do you work through an activity?

2. To complete an activity, what kind of learning strategies do you use?

3. The CWR activity ends with SRL questions such as: What are the main ideas in this activity? Write down what you have learned in this source? Are these questions helpful for your while going through the activity? If yes, why, if no, why not?

4. In general, how do you identify main ideas or key points in your reading?

5. How do you monitor or check your understanding of a topic? What are some of the strategies you would use?

6. What do you do with parts that you do not understand?
7. What do you think of the self-reflection question? How helpful it is for you to work with the activity?

8. Are the SRL guiding questions helpful for you to think more about your learning?

9. Would you apply these SRL guiding questions on other social studies activities? If yes, why? If no, why not?

10. In your opinion, what are the key characteristics of becoming a strategic learner?

11. What are the interesting/least interesting parts learning with the CWR activity?

Closing Comments: Thank you for your responses. Do you have any questions about what we had discussed? If not, thank you very much for your collaboration.