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Infusing Literacy Across the Curriculum through Experience for Low Literacy-Ability Adolescents

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Abstract

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MA, International Institute for Educational Planning, UNESCO: France, 2003

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Abstract

Adolescents are not acquiring the necessary literacy skills to engage with complex texts for high school, higher education, and eventual employment. However, it is unclear what strategies teachers use to infuse literacy instruction across the curriculum and how useful training they have received to use these strategies has been. Guided by Dewey's theory of experience, this basic qualitative study sought to understand the strategies teachers use to infuse literacy through experience, training teachers received, and their views regarding how strategy training can be improved. Participants were 12 purposefully selected teachers from three junior secondary schools in an urban school district in the English-speaking Caribbean. Data were collected through face-to-face interviews. Data were analyzed using open and axial coding to identify themes and patterns. Results indicated teachers used four instructional categories: interaction, continuity, curriculum flexibility, and fusion of subjects to teach literacy in their content areas. In addition, teachers used teacher-student interaction, infusion, student-student interaction, student-resource interaction, integrated content, flexible learning, and previous knowledge to teach literacy in their content areas. Teachers were trained to infuse literacy in their content areas mainly through a reading course. They suggested that training can be improved by offering all subject teachers specialized literacy training given to English teachers. This research contributes to positive social change by providing teachers with strategies to increase adolescents' literacy skill development and administrators with suggested methods to improve teacher literacy training.

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Dedication

I dedicate this research to Almighty God and my family, especially my husband who was my constant support, my daughters who encouraged me to keep fighting, and my son-in-law who willingly provided technical support when I needed help.

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Chapter 1: Introduction to the Study

In this study, I examined strategies teachers used to teach literacy through experience to low literacy ability adolescents in the English-speaking Caribbean. Adolescents with low literacy abilities continue to be a concern of educators and researchers. As adolescent students advance to the secondary level where complex texts are used, literacy skills obtained during the primary level are not enough for specialized content areas (Chauvin & Theodore, 2015; Dunkerley-Bean & Bean, 2016). Students need reading skills to understand complex informational texts in discrete content areas such as science and mathematics that have unique texts with complexity that require explicit literacy skills for those particular areas (Graham et al., 2017). This increasing demand for literacy skills at the secondary level challenges students with strong literacy abilities and creates problems for students with poor literacy skills (Nomi, 2015). Global migration patterns from non-English-speaking areas of the world to countries such as Canada and the United States create many English Language Learners (ELLs) who struggle to achieve English proficiency (Haager & Osipova, 2017).

The cross-curricular approach is a strategy that teachers can use to help students to acquire a set of literacy skills to learn new knowledge in different content areas (Chauvin & Theodore, 2015). Additionally, teaching through experience, which involves creating a student-centered classroom environment where new learning is connected to students' previous knowledge, also encourages knowledge acquisition (Dewey, 1938). It is also important for teachers to be prepared to teach literacy in their content areas (Graham et al., 2017; Kavanagh & Rainey, 2017). Literature lacked studies about

strategies that teachers use to teach literacy to adolescents in the English-speaking Caribbean where adolescent literacy is also a problem, and there is little knowledge of how teachers are trained to use these strategies. This study contributes to discussions in the literature about the English-speaking Caribbean and adolescent literacy that is essential for the advancement of adolescents in the Caribbean.

This chapter is divided into three major sections. The first section provides the reader with an overview of the study by delineating the background, problem statement, purpose, and research questions. In the second section, I discuss the theory of experience (Dewey, 1938), the nature of the study, and definitions of key terms. The last section of the chapter contains assumptions, delimitations and limitations, significance of the study and its impact on social change, and a summary.

Background

Adolescent literacy continues to be a concern for educators and researchers. Given the importance of literacy in the 21st century, it is imperative that adolescents acquire relevant literacy skills and teachers develop the capabilities to teach literacy in their content areas to assist their students to be self-motivated learners (Polius, 2015). In this study, strategies suggested by the theory of experience (interaction, continuity, curriculum flexibility, fusion of subjects) were examined to teach literacy across the curriculum to adolescents with low literacy abilities in the English-speaking Caribbean.

The cross-curricular approach is defined as a combination of knowledge and skills that are utilized across the curriculum in different content areas (Savage, 2010). There are different names for the cross-curricular approach: interdisciplinary, intersubject,

cross-disciplinary, integrated inquiry teaching, and curriculum integration (McPhail, 2018). The cross-curricular approach is a strategy that teachers can use to make learning creative and relevant. In this research, the terms cross-curricular approach, teaching/learning across the curriculum, integrated teaching/learning, and infusion have the same meaning.

Infusing literacy across the curriculum is referred to as content area literacy, a common group of literacy skills students can use to learn content across subject areas (Chauvin & Theodore, 2015). Language is the medium of expressing content areas, thus, reinforcing literacy skills as various subject areas are taught, helps students develop the literacy skills required to enhance learning in content areas (Kirsten, 2019). Further, students need reading skills to understand complex informational texts in discrete content areas. Disciplines such as science and mathematics have unique texts with complexity that require explicit literacy skills for those particular areas.

Teaching across content areas presents difficulties for teachers and students. Teachers need to acquire knowledge in various subjects to deliver integrated approaches, and many teachers lack content knowledge in particular subject areas (Fu & Sibert, 2017). Teachers experience challenges such as limited time for planning, frustration, lack of understanding about what integration entails, and completing work stipulated by the curriculum in each subject area (Heafner, 2018; McPhail, 2018). Sometimes the subjects that are integrated do not blend well together, thus making it difficult for the students to learn (McPhail, 2018). For ELLs, the level of difficulty increases when the new knowledge is integrated with the learning of English as is practiced in content and

language integrated learning (CLIL) and content-based instruction (CBI) (Okumura & Obara, 2017). These challenges further highlight the importance of teachers being trained to infuse literacy across the curriculum, especially using strategies suggested in Dewey's theory of experience.

John Dewey's theory of experience was used as the conceptual framework for this study. Dewey (1938) said every new experience incorporates past knowledge into the present experience and alters those experiences that occur after. Further, learning obtained from the past contribute to present and future knowledge acquisition. Dewey defined experience as a transaction that occurs between the individual and his or her environment that may involve persons, books, toys, or other materials. Four important elements of the theory of experience are interaction, continuity, curriculum flexibility, and fusion of subjects. Dewey (1938) said the classroom learning experience must include strong interactions between students and teachers, students and their peers, and students and physical learning resources present in the learning environment. Teachers must also ensure that new knowledge is connected to children's previous knowledge to make new learning relevant and achievable. Curriculum should be child-focused with the content centered on the needs of children and communities, and the subject matter should be relevant and taught in connection with other subjects.

The literature revealed studies that focused on strategies to teach adolescent literacy in the developed world, but very little is found about the English-speaking Caribbean, also known as the Commonwealth Caribbean, where adolescent literacy is an issue also. Further, there is little evidence that Dewey's theory of experience is used by

teachers in the Commonwealth Caribbean to teach literacy across the curriculum to adolescents with low literacy abilities. The multi-language legacy of colonization and the development of non-English local dialects are main reasons for literacy challenges that students face in the English-speaking Caribbean (Jennings, 2017).

The English-speaking Commonwealth Caribbean consists of countries that were once colonies of Great Britain. These include Antigua and Barbuda, the Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Saint Kitts/Nevis, Saint Lucia, Montserrat, Saint Vincent and the Grenadines, Trinidad and Tobago, and Turks and Caicos Islands. Four countries (British Virgin Islands, Cayman Islands, Montserrat, and Turks and Caicos Islands) are not independent and are called overseas dependencies of the United Kingdom. Although Guyana is listed as part of the Commonwealth Caribbean, it is located on the mainland of South America and is the only English-speaking country in South America. Belize is the only English-speaking country located in Central America. The other members of the Commonwealth Caribbean are islands in the Caribbean Sea.

This study adds understanding to the gap in the literature regarding teachers' use of strategies to infuse literacy across the curriculum to low literacy-ability adolescents in the English-speaking Caribbean. The study also begins the process of understanding how teachers were trained to use these strategies and teachers' views regarding how to improve strategies used to teach literacy through experience to low literacy-ability adolescents in the English-speaking Caribbean. This study can provide knowledge about strategies used to teach literacy to adolescents in the context of developing countries and

increase focus on education in the English-speaking Caribbean. This study can stimulate further interest by deliberately addressing adolescent literacy in the English-speaking Caribbean.

Problem Statement

Many studies have explored different strategies to teach literacy to adolescents in various developed countries (Bogard et al., 2017; Hagaman & Casey, 2017; Howard, 2016). However, little is known about teachers' use of Dewey's (1938) theory of experience to teach literacy across the curriculum to low literacy-ability adolescents in the English-speaking Caribbean, as well as how they are trained to use these strategies. Adolescent literacy is a major priority in 21st century classrooms. Many high school students lack literacy skills needed for higher grades, college level education, 21st century work environments, and to be productive members of their country (Dunkerley-Bean & Bean, 2016; Gorard et al., 2017; Kavanagh & Rainey, 2017). Further, literacy has been a challenge for students in the English-speaking Caribbean for historical and linguistical reasons and they should be taught to strengthen learning in content areas (Jennings, 2017). Teachers need to be trained to teach literacy in content areas (Polius, 2015).

Interaction, continuity, curriculum flexibility, and fusion of subjects can be used to teach literacy across the curriculum to adolescents students. However, there is a paucity of research regarding their use to teach literacy across the curriculum to low literacy-ability adolescents in the English-speaking Caribbean. This study focused on this gap in the literature. I also sought to understand how teachers were trained to use these

strategies, and obtained their views regarding how to improve strategies to teach literacy through experience.

Purpose of the Study

The purpose of this generic qualitative study was to understand teachers' use of interaction, continuity, curriculum flexibility, and fusion of subjects to infuse literacy across the curriculum to low literacy-ability adolescents, understand how teachers were trained to use these strategies, and understand their views on how to improve training received to teach literacy through experience to low literacy-ability adolescents in the English-speaking Caribbean. The study is important because the literature has a large body of knowledge about strategies used to teach adolescents in mostly developed countries but much is not known about strategies used in the English-speaking Caribbean.

A generic qualitative inquiry, also known as basic qualitative study (Kahlke, 2014; Patton, 2015) provides the scope for a simple study to be conducted that sought understanding of the phenomenon but does not fit under the established qualitative methodologies such as case study, grounded theory, phenomenology, ethnography, or narrative. The case study is used when the researcher wants to investigate a bounded phenomenon that is detailed over a long period of time, and to understand the how and the why of the phenomenon (Merriam & Tisdell, 2016). The generic qualitative inquiry involves obtaining participants' perceptions about a phenomenon. It does not involve the inner feelings of participants but rather their opinions of actual experiences using qualitative research tools such as in-depth personal interviews, observations, and document reviews for data collection. In this study, I used the generic qualitative inquiry

design to understand the strategies teachers in the English-speaking Caribbean used to teach literacy across the curriculum using in-depth face-to-face interviews with participants over 12 weeks.

Research Questions

The questions that guided this study were:

RQ1: What strategies do teachers in the English-speaking Caribbean use to teach literacy across the curriculum through experience to low-literacy ability adolescents?

RQ2: What training have teachers undergone to adopt various strategies to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?

RQ3: What suggestions do teachers have to improve strategies used to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?

Conceptual Framework

John Dewey's theory of experience was used as the conceptual framework for this study. The focus of the theory of experience is the use of past experiences in present learning that also shape future learning experiences. Four important elements of the theory of experience are interaction, continuity, curriculum flexibility, and fusion of subjects. Dewey (1938) said the classroom learning experience must involve strong interactions between students and teachers, students and their peers, and students with physical learning resources present in the learning environment. Teachers must also ensure that new knowledge is connected to students' previous knowledge to make new

learning relevant and achievable. Curriculum should be child-focused, with content centered on the needs of the child and the community, and the subject matter should be relevant and taught in connection with other subjects.

Each of the four areas of the theory of experience (interaction, continuity, curriculum flexibility, and fusion of subjects) is further subdivided. Interaction consists of classroom interaction between teachers and students, students and their peers, and students with the teaching and learning resources. Continuity embodies previous knowledge and reflection. Students use reflection to select past experiences that are applicable for present classroom activities. Curriculum flexibility incorporates infusion and flexible learning. Using infusion, teachers can teach another content area while teaching their content areas, such as, the teaching of literacy in social studies or science. In adjusting the content and strategies of the curriculum to meet students' need, a classroom teacher practices flexible learning. Fusion of subjects refers to teachers using content from other subject areas in the teaching of their content areas. This can be done through integration, associative learning, and improvisation or incidental learning. These areas are discussed in the context of recent research in Chapter 2.

Dewey's theory of experience was compared with Jerome Bruner's theory of instruction. Bruner (1978) said that the theory of instruction contains four major features of instruction: correctly selected previous experiences that can be used in present learning, structured curriculum to make learning easier for students, effective sequencing of knowledge, and rewards and punishments to encourage learning. Dewey's and Bruner's theories are discussed in Chapter 2 in greater detail. The study was used to

obtain an understanding of teachers regarding strategies used to teach literacy to low literacy-ability adolescents in the English-speaking Caribbean. Research questions were also used to obtain an understanding of teachers regarding the training they received to adopt strategies as well as suggestions to improve training to use strategies to teach literacy across the curriculum to adolescents with low literacy abilities.

Nature of the Study

The study's methodology was a generic qualitative study. I sought to understand the strategies teachers used to teach literacy in their content areas, how teachers perceived they were trained to use these strategies, as well as their views regarding how to improve training to use strategies to teach literacy through experience to low literacy-ability adolescents in the English-speaking Caribbean. This approach was suited to this study because the research was simple that involved information using practical qualitative methods to fill a gap in the literature. The generic qualitative inquiry involves obtaining participants' perceptions about a phenomenon. I did not study the inner feelings of participants but rather their opinions of actual experiences using in-depth face-to-face interviews. The study was conducted in an urban area in the English-speaking Caribbean for a period of 12 weeks, the equivalent time for one school term. The 12 participants were teachers from three junior secondary schools, four from each school who taught English, mathematics, science, and social studies. Face-to-face interviews were used to collect data and the interviews were audio-recorded. I also made notes during the interviews.

Definitions

Adolescent literacy: Students' capacity to appropriately use learned knowledge and skills to solve problems in various life experiences using analysis, reasoning, and communication (OECD, 2009).

Content area literacy: A set of literacy skills that are used in every subject to learn the content (Chauvin & Theodore, 2015).

Continuity of experience: The knowledge that is gained in a previous experience that is used as foundation to learning new knowledge (Dewey, 1938).

Curriculum flexibility: When teachers adjust the planned curriculum to meet students' learning needs, curriculum flexibility is practiced. This can be changes in content, methodology, teaching/learning styles, time, place, and space (Dewey, 1938).

Fusion of subjects: The teaching together of related content from different subjects to support learning in any subject area (Dewey, 1938).

Improvisation or Incidental learning: Improvisation or incidental learning involves the introduction of another subject matter into a current lesson that was not planned but which came up during the process of delivering the lesson (Dewey, 1938).

Junior secondary schools: Secondary schools in the English-speaking Caribbean that cater to students from seventh to eleventh grade, similar to British Ordinary Level education. Senior secondary schools have two additional grades (Grades 12 and 13) that cater to advanced secondary education, similar to British Advanced Level education. These two additional grades are optional and only completed if students desire to write at the advanced level.

Assumption

In this qualitative study, I sought the views of teachers in the school system. It was assumed that teachers be open and honest in answering interview questions to ensure the research questions were properly answered.

Scope and Delimitations

In this generic qualitative study, I used a small population of 12 teachers from three urban junior secondary schools to understand strategies teachers used in the English-speaking Caribbean to infuse literacy across the curriculum to low literacy-ability adolescents. I sought to understand how teachers perceived the training they received to use these strategies, as well as their views regarding how to improve strategies used to teach literacy through experience to low literacy-ability adolescents in the English-speaking Caribbean.

I used purposeful random sampling to select three junior secondary schools. I selected one teacher from each of the four core subjects of science, social studies, mathematics, and English using the random sampling technique with the group of selected subject teachers in the three schools. These core subjects were chosen because the literature review included many studies focused on these content areas, especially in language classes. The selection process continued until four teachers were selected. Potential transferability was present in the context of the four different subject areas that were studied and data collection was the same for each subject area. This study could be replicated in senior secondary schools where students are thought to have strong literacy skills.

Limitations

Limitations to trustworthiness in this study are related to the research design. The qualitative study design allows for a small sample of 12 participants. However, there is limitation in the transferability of the findings to larger populations in the English-speaking Caribbean.

Significance

This study will contribute to filling a gap in literature regarding strategies teachers use in the English-speaking Caribbean to infuse literacy across the curriculum to low literacy-ability adolescents. Information was obtained regarding how teachers are trained to use these strategies, as well as their views of how to improve training to use these strategies to teach literacy through experience. The literature contains information mostly from the developed world, with little from the English-speaking Caribbean. This study will provide comparative knowledge about adolescent literacy in the context of developing countries and focus on education in the Caribbean.

This study can stimulate further interest by deliberately addressing adolescent literacy in English-speaking Caribbean countries. This study can also contribute to positive social change in the English-speaking Caribbean by improving basic skills of adolescents, which they can use for personal development, increased participation in community life, positive economic development of their countries, and ultimately the Caribbean region.

Summary

Teaching or learning across the curriculum is a strategy that can be used to teach literacy to adolescents with low literacy abilities. Teaching literacy in other content areas helps students learn specific subject areas while consolidating their literacy skills. Use of interaction, continuity of experience, curriculum flexibility, and fusion of subjects are strategies to teach adolescents with low literacy abilities. Adolescents require advanced literacy skills for complex informational texts during higher grades in secondary school, tertiary education, and working environments. Teachers have to acquire pedagogical skills to teach literacy in their content areas.

Adolescents experience challenges with literacy, and many studies were done about strategies to teach literacy to adolescents. Adolescents in the English-speaking Caribbean also experience challenges with literacy. Adolescents' need for advanced literacy skills makes it imperative for teachers in the English-speaking Caribbean to use strategies that encourage learning in adolescents, especially those with low literacy abilities, and be trained to apply these strategies in the classroom. However, there was a gap in the literature regarding strategies teachers use in the English-speaking Caribbean to infuse literacy across the curriculum to low literacy-ability adolescents. This study provides an opportunity for the English-speaking Caribbean to be included in the literature, similar to most developed countries.

In Chapter 2, I discuss in greater detail Dewey's theory of experience using the variables of interaction, continuity, curriculum flexibility, and fusion of subjects. I examine studies that illustrate teachers' use of these strategies to teach literacy. I explain

the gap that this study can fill in the literature and add to knowledge regarding the teaching of literacy across the curriculum to adolescents in the English-speaking Caribbean.

Chapter 2: Literature Review

There is a gap in the literature regarding strategies that teachers can adopt to teach literacy across the curriculum through experience to low-literacy ability adolescents in the English-speaking Caribbean, as well as training the teachers received to use these strategies. Adolescent literacy is a major priority in 21st century classrooms. Many high school students lack literacy skills needed for higher grade levels, college level education, 21st century work environments, and in order to be productive members of their society (Gorard et al., 2017; Kavanagh & Rainey, 2017). Literacy has been a challenge for students in the English-speaking Caribbean for historical and linguistic reasons (Jennings, 2017), and therefore teachers should be deliberately taught to strengthen learning in content areas. Polius (2015) also recognized the need for teachers to be trained to teach literacy in content areas in the Caribbean.

The purpose of this study was to understand strategies teachers use in the English-speaking Caribbean to infuse literacy across the curriculum to low literacy-ability adolescents using interaction, continuity of experience, curriculum flexibility, and fusion of subjects. I also sought to understand how teachers perceived they were trained to use these strategies, and obtained their views regarding how to improve training to teach literacy through experience to low literacy-ability adolescents in the English-speaking Caribbean.

Although there were many studies that were conducted in developed countries, few were found on the English-speaking Caribbean. There was a paucity of research that focused on strategies to teach literacy across the curriculum through experience to low-

literacy ability adolescents in the English-speaking Caribbean. Given the challenges Caribbean teachers faced to teach content to students with low literacy skills, it became necessary for a better understanding of strategies being used, and training to use these strategies.

The theoretical framework for this study was the theory of experience (Dewey, 1938). The theory of experience suggests strategies that encourage learning in students with weak literacy skills. This theory indicates the importance of student-centered learning where students participate actively in learning in a creative classroom environment. Relevant experiences acquired outside of the classroom are also needed for current learning experiences.

The literature review contains four major sections. The first section outlines search strategies used to obtain the most current research available to support my study. In the second section, I discuss the theory of experience under four concepts: interaction, continuity, curriculum flexibility, and fusion of subjects (Dewey, 1938). The second section also contains examples of application of the concepts to classroom instruction in subject areas such as language, science, mathematics, and social studies. Then, I describe, review, and synthesize current research that demonstrates the concepts of interaction, continuity, curriculum flexibility, and fusion of subjects. Each of the four concepts is further divided into sub-areas. Interaction refers to interaction between teacher and students, students with other students, and students with the teaching-learning resources in the classroom. Continuity refers to previous experiences or prior knowledge and the use of reflection. Curriculum flexibility is divided into infusion and flexible learning.

Fusion of subjects is divided into integrated content, associative learning, improvisation or incidental learning. I examine literature involving training that teachers obtained to teach literacy across the curriculum, especially for low literacy-ability adolescents. This is followed by conclusions and a summary.

Literature Search Strategy

I located literature through databases accessed through Walden's University Library which were Education Source, Academic Search Complete, Educational Resources Information Center (ERIC), and Thoreau Multi-Database Search. I used Google Scholar to obtain information regarding strategies that involved interaction, continuity, curriculum flexibility, and fusion of subjects. In addition, Google was used to find current literature about literacy in the English-speaking Caribbean, but there was a lack of information. Other information came from the US Department of Education, National Center for Education Statistics (NCES), and web pages of international bodies such as United Nations Educational, Scientific, and Cultural Organization (UNESCO) and United Nations International Children's Emergency Fund (UNICEF). I used Boolean operators to obtain recent and relevant peer-reviewed articles published between 2015 and 2020.

Terms used were: *literacy, traditional literacy, basic reading skills, literacy skills, adolescent literacy, low literacy skills, literacy skills in developing countries, infusing literacy across the curriculum, content area literacy, literacy AND mathematics, repetition education theory, what is infusion, content area teaching, integrated curriculum, infusion as an education strategy, content area literacy strategy, infusion*

strategies, infusion of literacy in content areas, teaching literacy using Dewey theory of experience, literacy theories, how to measure the effectiveness of a strategy, Dewey's theory of experience, disciplinary literacy, adolescent literacy in the Caribbean, teaching content area literacy in the Caribbean, classroom interaction, classroom interaction AND learning resources, continuity, student interaction AND learning resources, collaborative learning AND classroom strategies, curriculum flexibility, curriculum flexibility in a blended curriculum, curriculum development, flexible curriculum, flexible learning, fusion of subjects, integrated curriculum, interaction strategies, integrating literacy, integrated curriculum and literacy, technology-enhanced interaction, reflection-Dewey, previous knowledge, prior learning, activating prior knowledge in learning, incidental learning conditions, reading difficulties in high school, reading interventions for adolescents, cross-curricular, learning theory, learner-centered curricular, teaching literacy using technology, small group instructions, teaching through interactions, qualitative research data analysis, learning by association, peer interaction, effective group work, associative learning, generic qualitative research, trustworthiness in qualitative research, generic literacy strategies mobile technology in the classroom, mobile learning in education, and technology-enhanced inquiry-based learning. It was relatively easy to find peer-reviewed journals regarding strategies to teach literacy across the curriculum, because many studies were done on this topic, especially in developed countries. The challenge was finding current literature in the English-speaking Caribbean.

Conceptual Framework

The conceptual framework for this study was based on the theory of experience (Dewey, 1938). Teaching through experience incorporates four concepts: interaction, continuity, curriculum flexibility, and fusion of subjects that encapsulate these ideas. Interaction occurs as learners engage with their teachers, fellow students, and learning resources in a creative way to construct new knowledge for themselves. Learning is contextual, relevant, and caters to individual abilities of students to encourage participation and active learning. The learning environment encourages students' creative exploration that allows them to construct new knowledge in the given subject area. Continuity is expressed when learners' previous knowledge acquired from real life situations are brought into the new learning experience. Learning instructions are built on previous content and then expanded to take in new knowledge. Curriculum flexibility is practiced when the content area is not prescribed and fixed in the past but flexible in accordance with the needs of students. Fusion of subjects allows learning to be linked with knowledge previously acquired in different content areas that are relevant to new content areas.

Dewey's theory of experience has similarities with Jerome Bruner's theory of instruction. According to Bruner (1978), instruction shapes the growth and development of individuals. This growth is facilitated by interactions between teachers and learners, use of language, students' ability to use previous information learnt from the environment, and students' increasing ability to engage in critical thinking and problem-solving.

The theory of experience was chosen for this study because it was more compatible with helping struggling students to improve their performance in the classroom. Dewey's concerns were centered on learning as a tool for personal and community development for the present and the future. The theory of experience is closely aligned with the objective of teaching literacy across the curriculum to low-literacy adolescent students because it speaks to the continuous use of strategies to reinforce learning in every subject matter in accordance with the students' individual needs. Infusing literacy across the curriculum requires that teachers combine literacy instructions and content when teaching specific disciplines, thus practicing the strategies posited by Dewey (1938). Current researchers also supported Dewey's claims in the theory of experience (Ilica, 2016; Pohoata & Mocanu, 2015; Velepini, 2017). The four areas of the theory of experience – interaction, continuity, curriculum flexibility, and fusion of subjects – are discussed in the next section.

Four Areas of Dewey's Theory of Experience

Interaction

Interaction in the classroom is critically important for the achievement of learning (Ginting, 2017) and it covers different aspects of classroom activities. There is interaction between the teacher and the students, the students and their peers, and the students with the learning resources. Interaction is important because it helps the students to engage with the learning process, especially when the students' engagement is with their peers and the physical resources in the learning environment. Student engagement encourages self-exploration, increases motivation, and make learning more

effective (Costa et al., 2015). Adolescents with low literacy-abilities lack self-confidence, thus they need a supportive environment to participate in their learning to meet their needs and capacities. Dewey (1938) refers to the students' needs and capacities as internal conditions and the external learning environment as the objective conditions.

The teacher is a very important objective condition that includes the teacher's actions, spoken words, and tone of voice. Interaction contributes positively to learning when the teacher arranges the learning environment and other objective conditions to facilitate creativity, problem-solving, and experiential learning for the students (Dewey, 1938). The teacher must have knowledge of the present needs and capabilities of each student and take these into consideration when planning the learning activities. Interaction that results in learning is facilitated by oral, verbal, and non-verbal communication with strong engagement between the teacher and students. The teacher arouses the students' interest and curiosity and the students exercise their individual freedom and inculcate the attitude to pursue learning (Dewey, 1938).

In a teacher-centered classroom, the teacher dominates the interaction between teachers and students (Dewey, 1938) but the concept of interaction in the theory of experience requires the teacher-student interaction to change from teacher-dominated to a student-centered one where the social, psychological, emotional, and intellectual needs of the students are considered. Student-centered interaction provides the students with emotional support, classroom organization, and instructional support (Hafen et al., 2015). Emotional support is expressed through the climate the teacher creates in the classroom,

and the teacher's sensitivity and regard for the students' perspectives. Classroom organization refers to the management of students' behavior, the students' productivity, and the instructional formats employed. Instructional support incorporates understanding of the content, analysis and inquiry, quality of feedback, and instructional dialogue (Hafen et al., 2015). Adolescents with low literacy abilities require the kind of teacher-student relationship that is sensitive with a positive climate that enhances their self-confidence to explore and participate in their own learning.

Another aspect of classroom interaction is communication among the teacher, the individual student, and other students that is encouraged with the use of different strategies such as, scaffolding, direct pair, content feedback, extended wait time, referential questions, seeking clarification, extended learner turn, teacher echo, teacher interruption, extended teacher turn, turn completion, display questions, form focused feedback, and confirmation checks (Suryati, 2015). Some of these strategies, such as direct pair, extended wait time, extended learner turn, and content feedback, encourage students' communication in the teaching/learning process.

Interaction between the students and the physical or material resources in the learning environment encourages self-learning. In the 21st century classroom, these resources include technology-enhanced equipment such as computers with internet access and interactive white boards (Jianliang et al., 2017). The research in the use of technologically interactive learning indicated that students perform better in the interactive classroom than in the teacher-dominated classroom. The more students were

engaged in well planned and executed activities, their motivation for and interest in learning increased, and encouraged the desire for independent and ongoing learning.

Continuity

The process of using what was learned before as the foundation for learning new knowledge is referred to as continuity, with special reference to previous knowledge or prior experience. However, not every previous experience can be used in present and future learning. There are some negative experiences, such as stealing, that must not be used in future learning because they do not add to the positive development of the students or their society. These are non-educative experiences (Dewey, 1938). To ascertain the value of past experiences to current learning, students have to practice reflection to filter their previous experiences, and use those that would aid their new learning. Reflection is “to look back over what has been done so as to extract the net meanings which are the capital stock for intelligent dealing with further experiences” (Dewey, 1938, p. 87). This should occur in a stimulating environment where the teacher is the facilitator and the students use their curiosity to explore and engage in experiential problem-solving. The students participate in their own learning guided by their individual needs and capacities (Dewey, 1938).

Curriculum flexibility

The subject matter (history, geography, arithmetic, science, and so on) should not consist only of information that was organized in the past and handed down to the students in textbooks, with the teachers being the transmitter of this information (Dewey, 1938). The choice of the content must be influenced by the needs and capacities of the

students, the community in which the school is located, and should be based on the life experiences of the students. The curriculum must be relevant to the students' present life, and should provide opportunities for the students to practice and develop the skills that are necessary for continuous growth in the present and the future (Dewey, 1938).

Although Dewey (1938) advocated curriculum flexibility, he also saw the need for organization of the body of knowledge in the teaching-learning process. However, the students' life experiences must be the basis from which the body of knowledge should be taught. If every child's personal life experiences are considered, there would be many variances in the presentation of the curriculum but the teacher must organize the content of the curriculum to encourage orderly presentation.

Fusion of Subjects

Integrating subject matters is the fourth aspect of the theory of experience. For learning to be relevant and applicable to life, subject matters should not be taught in isolation of other subject areas (Dewey, 1938). Teaching new knowledge in isolation reduces the students' ability to recall and utilize the knowledge as it is disconnected from other knowledge or life experiences. When new learning is linked to, or associated with the child's life experiences, there is an increase in relevance for learning, retention, and application. Dewey (1938) declared that many things are learned together with the actual subject matter, including the development of positive or negative attitudes toward learning. There are other instances when unplanned subject content is introduced into the current lesson through a query, expressed thought, or mistake made. The skillful teacher will accommodate this new topic through the process known as improvisation or

incidental teaching. According to Dewey, dealing with topics that arise incidentally prevents the teaching-learning experience from being lackluster and provides the space for students to experience intellectual freedom. However, this does not eliminate the need for proper selection and organization of the subject matter even though improvisation should be utilized.

Benefits from this Conceptual Framework

The purpose of this study was to understand the strategies teachers used to infuse literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean; to understand how teachers perceived they were trained to use these strategies; and to understand the teachers' views on how to improve the training to use these strategies to teach literacy through experience in the English-speaking Caribbean. The conceptual framework built on Dewey's theory of experience embodied strategies (interaction, continuity, curriculum flexibility, fusion of subjects) that were used to teach literacy across the curriculum, especially to low-literacy ability adolescents. The literature provided studies that indicated the various ways a teacher facilitated interaction in the classroom to enhance student learning (Hafen et al., 2015; Suryati, 2015). Interaction provided the social environment for teacher and students to communicate in various ways to facilitate learning and included the manipulation of all physical and material learning resources present in the classroom. The literature contained studies that illustrate the importance of continuity, curriculum flexibility, and fusion of subjects and discussed examples of literacy being taught across the curriculum. Some studies showed the importance of teacher training in preparation for the teaching of

content area literacy (Barton & McKay, 2016; Graham et al., 2017). These studies provided me with examples of the application of the concepts highlighted in Dewey's theory of experience. In the next section, I review the literature under the headings of interaction, continuity, curriculum flexibility, and fusion of subjects as strategies to teach literacy across the curriculum to low literacy-ability adolescents. I also examine the literature for training that teachers received to teach literacy across the curriculum to low literacy-ability adolescents.

Literature Related to Key Concepts and Variables

Interaction

Many adolescents with low literacy abilities are struggling readers and learners from all social groups, economically disadvantaged youths, some that attend low achieving schools or schools in low socioeconomic communities, English language learners (ELLS), second language (L2) learners, students with limited and interrupted formal education (SLIFE), or those with learning disabilities (LD). Others advance into the secondary grades with weak literacy skills from primary school (Barton & McKay, 2016; Berenato & Severino, 2017; Gorard et al., 2017). Many of these students lack self-confidence, disengage from learning, exhibit disruptive behavior, and become at risk of dropping out of school (Friend, 2017; Gorard et al., 2017). Classroom interaction, as embodied in the theory of experience, can result in improved student performance and this will be discussed under three headings: teacher-student, student-student, student-learning resources.

Teacher-Student

Through interaction, relationships are developed between teachers and students that can impact student learning. Using earlier research, Cook et al., (2018) explained that positive relationships between the teacher and the students engender a sense of safety, establish emotional connections that enhance the students' academic performance, and encourage greater academic engagement. Positive relationships can have a physical healing effect on the minds of students who were involved in negative life experiences (Siegel, 2020). Conversely, a negative relationship between the teacher and the students can affect the students' engagement and performance in school (Yeager et al., 2014). Negative relationships between the teacher and the students can result in mental health and behavioral problems in students (Gini et al., 2018). Therefore, positive teacher-student interaction is important for the development of positive relationships to foster greater academic performance in students.

The importance of teacher-student interaction is further illustrated in the Teaching through Interaction model that is divided into three major domains: emotional support, classroom organization, and instructional support (Hafen et al., 2015). Each domain has several dimensions that describe aspects of classroom interaction. Emotional support refers to the quality of the relationship that the teachers develop with their students and include negative and positive climate, teacher sensitivity, and teachers' regard for adolescent perspectives. In a positive climate, the teachers are sensitive to the individual students' developmental needs, and respond positively by creating opportunities for the students to express their ideas that are valued, and take the leadership in acquiring new knowledge. However, a negative climate does not lend

support to the students. On the contrary, it can exacerbate the learning challenges for students with low literacy-ability. Classroom organization deals with behavior management, productivity, and instructional learning formats. These dimensions encompass teachers' management of students' behavior, the effective and maximum use of instructional time, and the manipulation of activities and resource materials to maintain students' interest and participation in the learning process. Instructional support embodies content understanding, analysis and inquiry, quality feedback, and instructional dialogue. The teachers engage the students' critical thinking, in a participatory environment that facilitates students' dialogue and feedback that result in the students' thorough understanding of what is being taught.

Many strategies are used in second language (L2) learners and English language learners (ELLs) classrooms that encourage teacher-student interaction. These include scaffolding, content feedback, extended wait time, referential questions, seeking clarification, teacher echo, teacher interruption, extended teacher turn, display questions, form focused feedback, and confirmation checks (Suryati, 2015, p. 250). However, when teachers utilize more of the strategies that result in teacher-dominated interaction such as extended teacher turns and teacher echoes, the students have limited opportunities to initiate interaction with the teacher, thus reducing their engagement and chance to learn (Suryati, 2015, p. 261). Learning a second language requires the students to be immersed in the language, therefore, there should be many opportunities for student-driven interaction.

Student-Student

In the classroom environment, students learn from their peers. Students experience a higher level of learning when they interact with other students in the learning environment (Costa et al., 2015). Collaborative (Kato, 2016; Wilfred, 2017) and cooperative (Kato, 2016) learning strategies encourage students to learn from one another and are facilitated through interaction in group activities in an active social environment. In some small group activities, the teacher ascribes a task to each student in the group (cooperative learning) and in others the focus is the achievement of learning outcomes through interacting with one another (collaborative learning) (Kato, 2016). Teachers are expected to provide opportunities for students to interact, explore, communicate, and exchange ideas in the process of constructing new learning. When students interact with their peers, they can be stimulated to a higher level of performance (Tenenbaum et al., 2020). However, small group collaborative activities can create challenges for some students. Effective group work requires the teachers to monitor the functioning of the group to encourage independent student participation (Fung et al., 2018).

Student-Learning Resources

Interaction between the students and learning resources increases the opportunity for learning. Learning resources include texts, materials, equipment, or technology that teachers and learners use in the classroom. Some 21st century classrooms have technology-enhanced resources that encourage active learning in students. Some of these are interactive white boards, web-based interactive-ware (Jianliang et al., 2017), computer-supported collaborative learning (Adanir, 2019), mobile collaborative experimental learning, and dynamic learning space (Bhati & Song, 2019).

Technological advancement has resulted in the availability of wireless and mobile technologies that teachers and students can use in and out of the classroom to support classroom learning (Bhati & Song, 2019). Students can collaborate online, use the internet to produce group work, and obtain information from the worldwide web to complete classroom assignments. Thus, the resources available to the students in the 21st century are more advanced than the resources that Dewey (1938) envisioned in the classroom.

Mobile telephones are available around the world, making the worldwide web available to students to interact and learn. Mobile technology strategies has increased the opportunity for students to participate in and control their own learning. This is known as self-regulated learning (Mwandosya et al., 2019). When students interacted with technological learning resources, their interest and motivation are heightened, and this encouraged engagement that results in improved learning (Jianliang et al., 2017). In the next sub-section, I describe studies related to continuity, the second of the four variables in teaching by experience, under the headings of previous or prior knowledge and reflection.

Continuity

Previous or Prior Knowledge

Previous knowledge is the content that the student learned before, that is relevant to a current lesson (Wang & Adesope, 2016) that can improve learning (Nurpahmi, 2015). This knowledge could be obtained in previous classroom lessons, at home, or in the community from real-life experiences. Students have to transfer the prior knowledge

to support new learning (Sidney & Alibali, 2015) but may face knowledge transfer issues for which they need help from their teachers (Persky & Murphy, 2019). Transfer of knowledge is described as near transfer and far transfer. Near transfer occurs when there are strong similarities between the original learning experience and the current learning situation. Far transfer occurs when there are more dissimilar aspects of the current learning and the original learning (Persky & Murphy, 2019).

For English language learners, previous knowledge comes in the form of their cultural and linguistical experiences. Teachers' use of the students' previous life experiences makes it easier for students to learn the new subject matter (Dewey, 1938). However, not all previous knowledge contribute to new learning. When the previous knowledge is fragmented or stored as isolated pieces that are not easily retrieved, this can hamper learning, especially when the previous knowledge consists of misconceptions and knowledge without structure. It becomes challenging for the students to retrieve the pieces of knowledge and use them as foundation for new knowledge (Glogger-Frey et al., 2018).

Some educators are reluctant to use students' previous knowledge for fear of reminding the students of negative or traumatic experiences in their lives, as might be the case of some refugees and migrant students from war-torn areas (Dávila, 2015). Studies have shown that prior knowledge can hinder new learning if it is not properly activated. Recent studies from developmental psychology and cognitive neuroscience revealed the effects of prior knowledge on memory processes (Shing & Brod, 2016). These studies showed that prior knowledge facilitates learning by providing a structure on which the

new knowledge is joined. However, prior knowledge must be activated properly before it can trigger the memory and be used in new learning. It is necessary, therefore, for teachers to stimulate the students' minds to recall the prior knowledge before applying the knowledge in a new learning situation.

Reflection

Reflection involves critical thinking that encourages active learning. Padmanabha (2018) defined reflection as a process in which learners connect past and present experiences in learning. The students engage in reflective thinking to analyze their previous knowledge and take out what is needed to facilitate the new learning. Writing reflective journals encourage reflective thinking in students by providing them with opportunities to express their views, connect new learning to real life experiences and prior knowledge, and foster greater understanding of the subject matter (Guce, 2017). Through reflective thinking, students activate their imagination and develop softer skills such as empathy, which are needed in the 21st century global community (English, 2016). In the next sub-section, I examine the literature for the third variable, curriculum flexibility, in teaching through experience.

Curriculum Flexibility

When teachers adjust their planned curriculum to meet their students' individual needs, they are practicing curriculum flexibility (Dewey, 1938). Curriculum flexibility includes changes in the order in which the content is taught and the strategies that are used to teach the curriculum. Studies showed infusion and flexible learning strategies that helped students to develop their literacy skills.

Infusion

Infusing literacy in content areas refers to the teaching of literacy in other subjects without affecting the content of the individual subjects. This can be done by emphasizing literacy skills (reading, writing, listening, speaking, thinking) (Ingram et al., 2016) while teaching the subject content (Stormer et al., 2016). Generic literacy strategies such as summarizing, questioning, and making inferences are combined using tools like graphic organizers, the Q-matrix, and think-alouds (Armstrong et al., 2018).

Flexible Learning

Flexible learning approaches make learning easier for students (Andrade & Alden-Rivers, 2019; Boulton, 2017; McGarry et al., 2015) and utilize web 2.0 technologies that include applications such as social networks, blogs, instant messaging, visual and audio contents (Mese & Aydin, 2019). Studies showed that e-learning methods increase students' engagement in learning and their understanding of the content matter, in spite of the challenges some students experienced with the technology (McGarry et al., 2015). Curriculum flexibility was presented also as different approaches that provide education when, where, what, and how students demanded it. There are flexibility of time, place, pace, modality, and methodology. Flexible learning may be conducted at home, in the classroom, at work, through experience, by distance, and through technology-supported delivery that can be online or by applications accessible on smart phones and tablets (Gordon, 2014).

Two examples of flexible learning approaches are online and blended learning. Online refers to the use of internet technology to deliver all the requirements of a course

that include activities such as discussion forums and group projects. Interaction with peers and the instructors is necessary. Blended learning consists of a combination of face-to-face and online components of the course delivery (Andrade & Alden-Rivers, 2019, p. 2).

Flexible learning options (FLOs), referred to as alternative schools or re-engagement programs, catered for students who were not able to successfully access education from mainstream schools in Australia. These re-engagement programmes have similar outcomes to Dewey's theory of experience that promotes educational services tailored to the needs and capabilities of the individual students. Citing earlier research, te Riele et al. (2016) presented five sets of outcomes for flexible learning options that included the achievement of literacy and numeracy skills; students engagement in education and reduction of disruptive behavior; preparation for employment and further study; development of social skills, self-confidence and resilience; positive engagement with the community and the reduction of negative behavior (te Riele et al., 2016).

These examples of curriculum flexibility (infusion, flexible learning using various approaches, and flexible learning options/alternative education) illustrated Dewey's (1938) concern for flexibility in subject matter to meet the students' needs. In the next sub-section, I described studies on the fusion of subjects, the fourth variable in Dewey's theory of experience. I also examined studies that focused on the importance of training teachers to use strategies to teach students with low literacy ability.

Fusion of Subjects

Fusion of subjects or teaching of two or more subjects together is known by different names: curriculum integration (CI), interdisciplinarity, intersubject, cross-disciplinarity, cross-curricula, and integrated inquiry teaching (McPhail, 2018). Subjects can be brought together around a particular issue, theme and disciplinary content (Roehrig et al., 2021).

Integrated Content

Two examples of teaching integrated subject matter are the Content and Language Integrated Learning (CLIL) in Europe and Content-based Instruction (CBI) in Canada that are used to teach a new language along with other subject content areas. Examples of CLIL strategies illustrated the teaching of English using social studies content (Cenoz, 2015), mathematics with English (Akbarov et al., 2018; Ouazizi, 2016), physics with German and English (Piesche et al., 2016), primary science and English (Abadikhah & Ahangar, 2015), English with primary science and arts and craft (Pladevall-Ballester & Vallbona, 2016), and English with history (Dallinger et al., 2016).

Abadikhah and Ahangar, (2015) found in earlier studies that content-based instruction helped the students to learn the subject content and the new language and this was also supported by modern research (Akbarov et al., 2018; Ouazizi, 2016; Sáez & Sancho, 2017) . However, other studies showed challenges with the approach of teaching a new language with a subject content. For example, (Dallinger et al., 2016) explained that content and language integrated learning was offered to high achieving and highly motivated students and some researchers failed to control for this selection effect. Classroom factors such as skilled and motivated teachers, and additional teaching time in

CLIL-programs may have contributed also to the success of the integrated learning programs (Dallinger et al., 2016). In spite of these challenges, there were many studies that supported the thinking that teaching subjects together encourage the acquisition of new learning.

Teacher Training

Teachers need additional training to support adolescents to acquire the literacy skills necessary to complete high school, and to prepare them for higher education and the world of work (Barton & McKay, 2016; Freking et al., 2015; Friend, 2017; Haager & Osipova, 2017; Sharp et al., 2016). Examples of teacher training for content area literacy suggested that various formats can be utilized. Training can be part of Teacher Education Programs (Freking et al., 2015; Kavanagh & Rainey, 2017; Mitton Kukner & Murray Orr, 2015), literacy content courses (Rodriguez, 2015), and specific professional development programs (Hartman et al., 2018). Modeling teachers who are experts in the teaching practices is another training method (Moje, 2015).

Barton and McKay (2016) developed a model for the effective teaching of reading to adolescent learners that they called a collaborative, community approach. This model illustrates a whole school approach with the students being at the center with key stakeholders (school administrators, teachers, community members) working together to improve the students' literacy skills. The model has two areas of focus, the first being adolescent-specific considerations such as their self-worth and resilience, cultural and social aspects, relationships with peers, family, and community; self-regulation, affect, motivation and engagement. The second area of focus deals with the six strategies for

effective teaching of reading – phonics, phonological awareness, oral language, fluency, vocabulary and comprehension (Barton & McKay, 2016, p. 171). This model illustrates the importance of addressing socio-cultural, affective, and cognitive factors in teaching adolescents to improve their literacy skills. This model expands on Dewey's (1938) theory of experience in which he highlighted the importance of interaction and positive classroom environment to enhance learning.

Teacher education programs include strategies that support the use of integration, continuity, curriculum flexibility, and fusion of subjects. Emphasis on creating a classroom environment that encourage student-centered learning through interaction is reinforced by the use of cooperative learning groups, experiential learning activities, questioning strategies, and creating visualizations such as word walls (Freking et al., 2015, pp. 63-64). Pre-teaching the vocabulary for the content area before the lesson and activating prior knowledge during the lesson support the use of continuity of experience in teaching. Strategies to help English language learners build their vocabulary, and strategies in writing, reading, oral speech, and listening help the trainee teachers to meet their students' individual needs. Integrating literacy with mathematics, technology, and other subjects help the trainee teachers to practice curriculum flexibility and fusion of subjects to teach content area literacy. The teacher education program described by Freking et al. (2015) illustrated the training some teachers received to teach literacy through experience to adolescents with low literacy skills.

How Researchers Dealt with the Problem

In this study, I sought to understand the strategies teachers used through experience to teach literacy to adolescent with low literacy ability in the English-speaking Caribbean, and the training that teachers perceived they received to use these strategies. Researchers acknowledged that adolescent literacy was still very important for life in the 21st century (Barton & McKay, 2016; Carr, 2015; Gorard et al., 2017; McHardy et al., 2018). The literature review provided many studies based in North America, Europe, Asia, Australia, New Zealand, and parts of Africa on how to teach language and literacy skills through infusion, integration, content area literacy, flexible learning, and content and language integrated learning (Armstrong et al., 2018; Mitton Kukner & Murray Orr, 2015; Ouazizi, 2016; Sáez & Sancho, 2017; Suryati, 2015). These studies indicated that researchers addressed the needs within their own context. The developed countries recognized the importance of adolescent literacy to prepare the next generation for higher education, to maintain the economic advantage in a competitive world market, and to equip the youth to deal with a diverse global community (Gorard et al., 2017; Kavanagh & Rainey, 2017). Thus, many studies focused on strategies to teach literacy skills to students at elementary, high school, and university levels. Researchers also emphasized the importance for teachers in training to receive the requisite skills to teach literacy to students with low literacy abilities (Graham et al., 2017; Haager & Osipova, 2017; Mitton Kukner & Murray Orr, 2015; Moje, 2015; Sharp et al., 2016).

Migration from non-English speaking countries to English-speaking countries, resulted in English language learners (ELLs) who struggle to use English while learning

it (Haager & Osipova, 2017). English as Foreign Language Learners (EFLs) students learn English to obtain better jobs and have a level of language proficiency for the global market (Buitrago, 2017; Dávila, 2015; Graham et al., 2017; Stewart et al., 2018). Within this context, educators and researchers explored many strategies to help English language learners to develop strong literacy skills using student-centered approaches supported by the use of technology (Lo, 2015; Molinillo et al., 2018; Suryati, 2015). The focus on student-centered instead of teacher-centered learning resonated with Dewey's (1938) theory of experience in which he advocated the importance of interaction, flexibility in learning, the merging of subjects, and using the students' previous experience in learning.

In the English-speaking Caribbean, a few studies were found that recognized the need for urgent and determined focus on the strengthening of literacy skills for children, youth, and young adults for personal and regional development (Polius, 2015) but there is a gap in the literature about studies that show how teachers can adopt strategies to teach literacy across the curriculum, through experience to low literacy-ability adolescents and how the teachers perceived the training they received to use these strategies. This gap in the literature can be addressed if more researchers in the English-speaking Caribbean conduct studies within their context as did the researchers in the developed countries. However, researchers from the developed countries can also conduct cross-cultural studies between the developed and developing countries for future research.

Rationale for Selection of Variables and Concepts from the Literature

Studies found in the literature provided information on the importance of teachers establishing a positive, supportive classroom environment that would motivate students

to engage in self-directed learning and encourage greater academic engagement (Siegel, 2020). The teaching/learning process is a social construct that requires communication among persons and the resources used in the teaching/learning environment. Many studies in the literature found that teacher-student, student-student, and student-learning resources interaction support the acquisition of knowledge (Armstrong et al., 2018; Costa et al., 2015; Hafen et al., 2015; Jianliang et al., 2017; Suryati, 2015). The literature also revealed that students' previous experience help in the acquisition of new learning (Bringula et al., 2016; Dávila, 2015; Sidney & Alibali, 2015). The use of previous knowledge encourages the students to engage in reflective thinking to sift through the previous experiences and apply the knowledge relevant for the new learning (Guce, 2017).

Studies indicated that adjusting the curriculum to meet the needs and capabilities of the students, results in greater learning achievement and teaching subject matters together gives support to the learning of new ideas, especially when done in association with other bodies of knowledge (Akbarov et al., 2018; Sáez & Sancho, 2017). Other studies provided information on the use of interaction, continuity, curriculum flexibility, and fusion of subjects to help students with low literacy skills to learn content across the curriculum. The information obtained in the literature justified the use of the four concepts as I sought strategies that teachers used to teach adolescents with low literacy-ability in the English-speaking Caribbean. In the next section, I review and synthesize studies related to the key concepts of interaction, continuity, curriculum flexibility, and fusion of subjects.

Studies Related to Key Concepts

The literature provided many reasons for the on-going problem of adolescent literacy which include low socioeconomic status, immigration of non-English-speaking and English as a foreign language learners, inadequate literacy teaching in elementary or primary schools, and the complexity of text in high school that demand stronger literacy skills than what is taught at the primary level (Barton & McKay, 2016; Berenato & Severino, 2017; Gorard et al., 2017). To improve the literacy skills of adolescents require teachers to teach literacy explicitly. Dewey's theory of experience suggested that child-centered strategies that utilize interaction, continuity of experience, curriculum flexibility, and fusion of subjects can improve students' acquisition of new learning.

Interaction

There are three main aspects of interaction that are important to enhance learning in the classroom. These aspects of interaction are teacher-student, student-student, and student-teaching/learning resources (Cook et al., 2018; Hafen et al., 2015; Suryati, 2015). Each of these aspects of interaction is important for the students to learn but it is the teachers' interaction with the students, and the creation of the social and physical environments in the classroom that are critical for students to learn. Positive teacher-student relationships formed from interaction between the teacher and the students can greatly enhance academic engagement and ultimately, student performance (Siegel, 2020). A negative relationship can hamper student performance (Yeager et al., 2014). Strategies that encourage teacher-student interaction include scaffolding, direct pair, content feedback, extended wait time, referential questions, seeking clarification,

extended learner turn, teacher echo, teacher interruption, extended teacher turn, turn completion, display questions, form focused feedback, and confirmation checks (Suryati, 2015, p. 250).

Student-student interaction motivates students to learn from one another (Costa et al., 2015). Small group activities that involve cooperative and collaborative learning strategies can enhance learning as students engage with one another (Kato, 2016; Wilfred, 2017) they can be stimulated to a higher level of performance (Tenenbaum et al., 2020). Effective small group work requires teachers to monitor the groups' activities and ensure independent student participation (Fung et al., 2018).

Learning resources in 21st century classrooms include technologically enhanced materials such as interactive white boards, web-based interactive-ware (Jianliang, et al., 2017), computer-supported collaborative learning (Adanir, 2019), mobile collaborative experimental learning, and dynamic learning space (Bhati & Song, 2019). Mobile technology strategies increased the involvement of students in self-regulated learning (Mwandosya et al., 2019). Information sharing, student engagement, and creativity increased with the use of wireless technologies facilitating access to one another and to information.

Continuity

In Dewey's (1938) theory of experience, the teacher utilizes students' previous experiences (prior knowledge) as the foundation to teach new learning. The literature supported the view that prior knowledge can enhance learning when it is properly transferred to the current learning situation ((Bringula et al., 2016; Nurpahmi, 2015;

Sidney & Alibali, 2015; Wang & Adesope, 2016). However, the previous learning has to be properly activated to trigger the memory and make the previous knowledge available for the new knowledge to be attached (Shing & Brod, 2016). Further, reflective thinking helps in the process of retrieving previous knowledge. As the student thinks critically and filters through his or her previous experiences, the previous knowledge is chosen that best facilitates the absorption of new learning (English, 2016; Guce, 2017).

Curriculum flexibility

Many studies were not found that illustrated strategies to deliver a flexible curriculum that showed teachers how to adjust their lessons when students' needs and capabilities dictate it. However, infusing literacy across the curriculum, content area literacy, and disciplinary literacy were well-researched (Armstrong et al., 2018; Aslan, 2016; Carr, 2015; Howard, 2016; Ingram et al., 2016; Kavanagh & Rainey, 2017; Mitton Kukner & Murray Orr, 2015; Moje, 2015; Nesmith et al., 2017; Sharp et al., 2016; Stewart et al., 2018; Stormer et al., 2016; Velempini, 2017). Some strategies identified to infuse literacy across the curriculum were reading, writing, listening, speaking, thinking (Ingram et al., 2016) summarizing, questioning, and making inferences using tools like graphic organizers, the Q-matrix, and think-alouds (Armstrong et al., 2018). There is the controversy between researchers about the effectiveness of content area literacy and disciplinary literacy in helping students to learn content in the particular subject area or discipline (Ingram et al., 2016; Kavanagh & Rainey, 2017; Moje, 2015). This is an area for further research, especially in the developing countries where there is limited research on strategies to teach literacy to students with low literacy skills.

The literature contained many studies in which curriculum flexibility was presented as different approaches, apart from the face-to-face instructor-designed approach, that provided education when, where, what, and how students demand it. There is the flexibility of time, place, pace, modality, and methodology. Flexible learning may be conducted at home, in the classroom, at work, through experience, by distance, and through technology-supported delivery that can be online or by app accessible on smart phones and tablets (Gordon, 2014; te Riele et al., 2016). These methods make learning easier for students (Andrade & Alden-Rivers, 2019; Boulton, 2017; McGarry et al., 2015) and required that the subject matter be presented in a manner that allows for changes based on the students' needs and capabilities.

Fusion of Subjects

Teaching different subject matter together to enhance the learning of new knowledge was expressed in different ways. Hong-Nam and Szabo (2017) and Howard (2016) described the integration of literacy in content areas, while Akbarov et al., (2018) and Cenoz (2015) presented the strategies of content and language integrated learning (CLIL) where the content in a subject area, is taught along with a new language. Although some of the studies were conducted in higher education, the studies indicated that education practitioners were utilizing the merging of subject matter for greater learning as was expressed in Dewey's theory of experience.

However, some studies have identified challenges in the use of the content and language integrated learning (CLIL) strategy because the studies that indicated CLIL enhanced learning, exhibited selection bias (Dallinger et al., 2016). This is an area for

further research. In the next section, I review and synthesize studies related to my research questions.

Studies Related to Research Questions

I used the generic qualitative research methodology to conduct my study. The three research questions focused on the strategies suggested in Dewey's theory of experience that were being used in the English-speaking Caribbean to teach literacy across the curriculum, the teachers' perceptions of the training they had undergone to utilize these strategies, and suggestions the teachers had to improve the training for the teaching of literacy across the curriculum through experience to low literacy-ability adolescents. In the literature reviewed, there was a mixture of qualitative, quantitative, and mixed method studies that illustrated the four concepts of interaction, continuity, curriculum flexibility, and fusion of subjects. However, 48% of the studies seen in the literature, utilized qualitative methodologies fully or partially as they tried to obtain the views of the participants about the use of the strategies (Guce, 2017; Howard, 2016; Mitton Kukner & Murray Orr, 2015; Nesmith et al., 2017; Suryati, 2015). The literature showed that qualitative methodologies are appropriate in finding out the perceptions and views of participants through the use of personal interviews, focus group discussions, and observations. I chose to use qualitative method because it was most appropriate to obtain the views of the teachers in the English-speaking Caribbean on the topic, as was illustrated in the studies cited above.

Summary and Conclusions

The concepts espoused by Dewey (1938) theory of experience are still being practiced in the teaching/learning environment in the 21st century. Interaction, continuity of experience, curriculum flexibility, and fusion of subjects are used to enhance learning in subjects such as language arts, science, social studies, and mathematics. Interaction is essential for the creation of a conducive learning environment in which weak, at-risk, and disadvantaged students can learn, discover their potential, and develop into creative thinkers capable of living in the 21st century. The role of the teacher is critical in establishing the learning-teaching environment where learner-centered strategies are used and subject matter is presented to meet the needs of the students in a flexible and relevant manner. Further, the 21st century global context demands that adolescents and young adults acquire advance literacy skills to meet the challenges of a technology-driven information society. Therefore, the literature presented many strategies in content area literacy, infusing literacy across the curriculum, and integrated subject matter to enhance the teaching of literacy skills. However, there was a gap in the literature of studies done in the English-speaking Caribbean on strategies used to teach new knowledge using interaction, continuity of experience, curriculum flexibility, and fusion of subjects. My study focused on the English-speaking Caribbean and investigated strategies that were used to infuse literacy across the curriculum using Dewey's theory of experience. Using the qualitative methodology, I investigated the topic within classrooms in the English-speaking Caribbean and attempted to stimulate further discussion on strategies that can be used to improve the literacy skills of adolescents in this area of the world.

Chapter 3: Research Method

The purpose of this generic qualitative study was to understand the strategies teachers used in the English-speaking Caribbean to infuse literacy across the curriculum to low literacy-ability adolescents using Dewey's theory of continuity of experience. I sought to understand how teachers perceived they were trained to use these strategies, as well as their views regarding how to improve strategies used to teach literacy through experience. Chapter 3 includes the qualitative research design and rationale, my role as the researcher, methodology, issues of trustworthiness, and a summary.

Research Design and Rationale

Through qualitative research, a researcher may seek to understand individuals' perspectives of a given situation, especially when there is limited knowledge in that area (Creswell, 2009). I used a generic qualitative inquiry because of my interest in understanding teachers' views of their experiences in teaching literacy across the curriculum using interaction, continuity, curriculum flexibility, and fusion of subjects. The generic qualitative study is aligned to the purpose of my study and is used to fill a gap in the literature regarding strategies used in the English-speaking Caribbean.

Research Questions

The questions that guided this study were:

RQ1: What strategies do teachers in the English-speaking Caribbean use to teach literacy across the curriculum through experience to low-literacy ability adolescents?

RQ2: What training have teachers undergone to adopt various strategies to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?

RQ3: What suggestions do teachers have to improve strategies used to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?

A generic qualitative design was selected to obtain the perspectives of teachers regarding strategies they use to teach literacy across the curriculum as well as how they were trained to use these strategies. Researchers use the generic qualitative approach to understand how people construct, interpret, and give meaning to their lived experiences (Merriam & Tisdell, 2016). In teaching literacy in their content areas, teachers engaged with their students in classroom activities, and as trainee teachers, they were taught how to teach literacy at the teacher training college. The generic qualitative approach allowed teachers to share, using personal interviews, their perspectives as trainee and classroom teachers in teaching literacy in their content areas.

Ethnography, grounded theory, case studies, phenomenology, and narrative design are five other qualitative approaches that were considered for this study. Ethnography is used to study a cultural group for a long period, grounded theory is used for theory construction, case studies are used for in-depth explorations, phenomenological research involves participants' lived experiences over long periods, and narrative approach involves individuals telling stories of their lived experiences (Creswell, 2009). The case study design is used when the researcher wants to investigate a bounded phenomenon

that is detailed over a long period of time, and understand the how and why of a phenomenon (Merriam & Tisdell, 2016).

None of these methods was appropriate for understanding strategies that teachers use to teach literacy across the curriculum to adolescents with low literacy ability. Unlike the ethnography approach that is used to study a cultural group for a long time (Creswell, 2009), in this research, a small sample of 12 participants were studied over a short 12 week period. Phenomenological research is used to study the essence of participants' lived experiences over a long period of time (Merriam & Tisdell, 2016) but this study examined a small group within a short period. The purpose of this research was not to construct a theory but to obtain an understanding of the teachers' views regarding the teaching of literacy, thus grounded theory was an inappropriate approach because its purpose is theory construction (Creswell, 2009). The narrative approach is used when the researcher asks the study participants to share their experiences in the form of stories. However, this study used semi-structured interviews to collect data from the participants. When the researcher conducts a detailed investigation of a phenomenon that is a bounded system over time using various data-gathering methods, the case study is being used. According to Merriam and Tisdell (2016), the unit of analysis is studied in a case study but the other types of qualitative research are defined by the focus of the study.

The generic qualitative approach is interested in understanding how people construct and make sense of their lived experiences (Merriam & Tisdell, 2016). This is aligned with the purpose of this study which was to understand teachers' experiences in the classroom regarding strategies used to teach literacy across the curriculum to low-literacy

ability adolescents. This study did not study the culture as in ethnography, was not bounded as in a case study, and did not construct a theory as with grounded theory. In-depth explorations of the participants' experiences were not conducted for a long period, neither were stories used during the data-gathering process. Through this study, I gained an understanding of teachers' experiences in the classroom regarding strategies to teach literacy across the curriculum to low-literacy ability adolescents. Therefore, a generic qualitative research was the most appropriate method for this straightforward study.

Role of the Researcher

With the qualitative approach, the researcher is the main instrument (Patton, 2015). I engaged with officials from Central Ministry of Education, the Department of Education where the schools are located, as well as school principals to obtain access to teachers. I conducted a purposeful random sample of schools at the Department of Education's Office and a purposeful sampling of teachers at the school principals' offices. I conducted face-to-face interviews with selected teachers.

From 1997 to 2007, I worked as an Education Supervisor in several districts, including the urban area where the study was conducted. Although I am still known to a few teachers, I have not worked within the school system since 2009, and do not have any reporting relationships with participants. However, when the sample was drawn, a teacher who knew me was excluded from the sample. Currently, I am the Executive Director of an autonomous agency that involves quality assurance of education at the tertiary level. Although I am the leader of this agency, I am not an education official and have no direct relationship with preprimary, primary, and secondary schools. These are

the responsibility of the Central Ministry of Education and Departments of Education. Management of the education system is strictly organized so that persons outside of the management structure cannot access or impact the system without permission of officials from the central, departmental, and school levels of the education system.. As far as the system is organized, I am an outsider without influence over the school system, including teachers.

As a trained secondary school teacher and former Education Supervisor, I may be biased about the way schools and classrooms should be managed. To ensure my personal bias did not affect the study, I audio-recorded interviews and manually transcribed them verbatim to ensure accuracy of participants' responses. I also asked many questions during interviews to ensure that what I recorded was what participants actually meant to share. I created a reflective journal and acknowledged limitations of the study. These efforts improved the confirmability of the study. I offered the equivalent of US \$20 as incentives to teachers for participating in the study. This incentive was offered only after teachers consented to participate, and payment was made at the end of the study.

Methodology

Participant Selection Logic

The population for this study was teachers from 26 junior secondary schools who taught mathematics, English, science, and social studies from grades 7 to 11. The schools were located in an urban Education District. The subject areas were chosen because many studies in the literature examined strategies used to teach across the curriculum in these

four areas (Bogard et al., 2017; Hagaman & Casey, 2017; Howard, 2016). The criteria for selection were: the teachers who graduated from the teacher training programs in the areas of mathematics, English, science, or social studies, and must be currently teaching mathematics, English, science, or social studies at any grade level between grades seven to eleven. I used purposeful random sampling to select three junior secondary schools from the group of 26 schools. Purposeful random sampling technique helped to reduce selection bias and increased the credibility and manageability of the study (Patton, 2015, p. 286). Purposeful random sampling was used again to select one mathematic, English, science, and social studies teacher from the group of subject teachers from each of the three schools selected, for a total of 12 teachers. Qualitative approach utilizes smaller samples but has no rule for sample size (Patton, 2015, p. 311). In conducting a qualitative study to find out types and frequency of literacy and pedagogical practices used in science instructions, Wexler et al. (2016) used observations and interviews with 10 biology teachers in six schools. I chose 12 teachers because that number allowed me to study four teachers, one from each of the four core areas observed in the literature – English, mathematics, science, and social studies. Four teachers from three schools provided the in-depth data for saturation to occur.

Instrumentation

Data was collected from 11 teachers through face-to-face interviews. One English teacher did not attend the scheduled interviews even though she consented willingly to participate in the study. She postponed the date for the interview until the 12 weeks had expired. I developed an interview protocol to guide the interviews. I used the

literature to draft the interview guide (see Appendix A) for standardized open-ended interviews using guidelines suggested by Patton (2015) that asked the same questions to each participant in the same sequence. Although a standardized open-ended interview reduced the flexibility of the questioning, it increased the comparability of the respondents' answers (Patton, 2015, p.438). Comparability was important for this study because data was collected from three research sites – three junior secondary schools. The interview protocol was divided into three parts because there were three research questions. Each research question had its own set of questions that were asked during the interviews. I followed up with a telephone call when I needed additional information from the participants.

Each research question had a main question with several probes from which to obtain the required data. The interview question for RQ1 with its four probes, was used to obtain the teachers' understanding of the concepts of interaction, continuity, curriculum flexibility, and fusion of subjects and how they used them in the teaching of literacy in their subject areas. The interview questions under RQ2 focused on how the teachers perceived their training at the Teacher training college to use integration, continuity, curriculum flexibility, and fusion of subjects. The questions for RQ3 were used to obtain the teachers' suggestions for improvement of the training they received to teach literacy across the curriculum using interaction, continuity, curriculum flexibility, and fusion of subjects.

Procedures for Recruitment, Participation, and Data Collection

As soon as I obtained Institutional Review Board (IRB #11-13-19-0445170) approval to conduct the study, I wrote a letter to the Chief Education Officer for permission to conduct the study. I then visited the Education Supervisor's Office, presented the Chief Education Officer's letter, explained the study, and drew the sample for the three schools from the 26 junior secondary schools. I obtained the letter of introduction and approval from the Education Supervisor for the Principals of the three schools. I visited the schools, delivered the letters to the Principals, explained the study, and drew the purposeful random sample for the four teachers – one each from the groups of mathematics, English, science, and social studies teachers that met the criteria of being trained teachers in the four subject areas and who were teaching the subjects during the school year. I met the teachers selected, explained the study, and obtained their consent to participate in the study. Each teacher consented to participate in the study. However, random sampling was done to replace a mathematics teacher who I knew well and an English teacher who did not meet the criteria of being a trained teacher. This was not known until when the interview was being conducted.

After obtaining their consent, I met with eight teachers and arranged a suitable day and time for the face-to-face interviews. Where possible, I arranged with the Principals to secure a private area to conduct the interviews so that the teachers' comments would not be overheard and repeated by anyone in the school system. However, some schools did not have additional space so some of the interviews were conducted in a vehicle to provide the private space required. The teachers signed the

consent forms before the interviews were conducted. The participants' names and contact information were not recorded to be used in the data but only to help me to set up the interviews and to make contact with them during the interviews. Their names and contact information were not necessary for the research. Each face-to-face interview was audio-recorded with the permission of the participants to ensure accuracy of the participants' responses. Notes were taken when I listened to the audio-recording of the interviews after each interview was completed.

The study was conducted for a 12-week period, November 15, 2019 to February 7, 2020. Although I allocated three weeks for each school for the interviews to be completed, eight interviews were conducted in the first four weeks of the study. During the three-week Christmas holidays of December 2019, I accelerated the transcription, coding, and analysis of the eight interviews and completed three remaining interviews in January 2020. One interview was not conducted as was reported earlier. I made one round of follow up calls to ensure that there were clarifications and that saturation was achieved. I ended the data collection by asking the teachers to review the analysis of the data collected and gave their opinion of the analysis, after which I expressed my thanks to them, and provided them with the equivalent of US\$20 for their participation. I also expressed my thanks to the Principals of the schools and the Officials at the Department of Education.

Data Analysis Plan

I was guided by Patton in developing my data analysis plan and used the question-by-question interview analysis with a constant comparative approach. I began to transcribe the 11 interviews using an online automatic transcription service.

However, I resorted to manual verbatim transcription of the data from 11 interviews after experiencing challenges with the quality of the online automatic transcription service. I listened to each interview and edited the transcription to ensure that there was a correct translation of each interview. I listened to these transcribed interviews and filled in the gaps in my notes. The data for each question was sorted along the four subject areas – mathematics, English, science, and social studies. I coded the interviews using the four strategies suggested by Dewey – integration, continuity, curriculum flexibility, and fusion of subjects; and the sub-areas of each of the four strategies. These pre-determined or a priori codes and subcodes were identified as the interview questions were answered to supply answers for the research questions.

I looked for common patterns in the answers by individual subject teachers across the three schools. As these common patterns were identified, I also sought for emerging themes. During the interviews, I asked many questions to understand participants' comments that were not quite clear or did not answer the questions. There were comments that did not support the research, and I questioned the participants to better understand the reasons for this data. These I recorded and can be used for further research. It was my intention to use Nvivo software after conducting a manual analysis. Instead, I used DocTools with MicroSoft Word that aligned with manual analysis by

extracting the comments for the a priori and emerging themes. I shared my data analysis results with the participants to ensure that the information that I received from the data was a correct reflection of their comments.

Issues of Trustworthiness

Trustworthiness in qualitative research is described through the use of credibility, transferability, dependability, and confirmability (Creswell, 2013). Credibility in qualitative research is parallel to internal validity in quantitative research (Patton, 2015) and refers to the use of methods to ensure that the data collected are as in-depth and accurate as possible to encourage confidence in the interpretation and conclusions of the researcher (Creswell, 2013). These methods include spending a lot of time in the field with the participants gathering richly described data, and checking for misinformation or distortions. Other methods are triangulation, peer review or debriefing, reporting negative data, clarifying researcher bias, and member checking (Creswell, 2013; Patton, 2015). To enhance credibility in my research, I audio-recorded every interview and made notes from the recorded interviews. I made note of data about two themes – previous knowledge and student-student interaction for RQ1 in which one participant provided data that was different from what other participants said. I sought an explanation from the participant about the different data. I conducted constant comparison between the subject teachers (English, mathematics, science, social studies) in each of the three schools. I triangulated the data collected among the teachers of the three schools in their answers to the three research questions. The participants were given a chance to verify the accuracy and interpretation of the data collected as well as to review the conclusions. I also

ensured that I clearly articulated my personal bias of the situation and practice reflexivity as critically as possible. These methods ensured the accuracy of data as described by the participants.

Transferability, parallel to external validity, (Patton, 2015, p. 685), deals with the researcher providing the readers with detailed information about the study, to help the readers to establish similarities with cases to which the results of the study may be transferred (Patton, 2015). Using audio recordings and field notes, I collected rich, descriptions that will provide the readers with the information needed to make decisions about whether the findings can be transferred to other similar situations.

Dependability of the research process is encouraged when measures are put in place to ensure that the interpretations and conclusions are reliable. If someone else does the research, that person should be able to make similar interpretations and conclusions (Creswell, 2013; Patton, 2015). After manually coding the data, I used DocTools in Microsoft Word to extract the comments on the a priori codes, subcodes and emerging themes. I journalized each step of the study, the challenges I faced, and how I dealt with them to ensure that the research process was documented in a logical manner so that someone else can follow the process.

Confirmability, similar to objectivity, grounds the research in factual data and established the value of the data (Creswell, 2013; Patton, 2015). Using constant comparison, I triangulated the data among teachers and schools according to the research questions, to verify the accuracy of the data. The use of the interview guide with

questions for each research question, guided the research and helped in gathering factual data.

Ethical Procedures

The ethical procedures were guided by the requirements of the Institutional Review Board (IRB) and those indicated by Patton (2015). The ethical procedure began by meeting IRB's ethical requirements to conduct a study. This included gaining permission from the appropriate authority to access the site for the study, share the purpose of the study, and obtaining the sample of participants. I obtained the participants' consent through the discussion and completion of consent forms and I ensured that the rights and privacy of the participants were protected during the study. Interviews were conducted in spaces that prevented the teachers' conversations from being overheard and records of interviews were stored in a safe cupboard in my home and on a password-protected computer. The electronic data were stored on my computer protected by pin and password and the audio-recordings and transcripts were secured in a cupboard along with all written notes. These will be securely stored for the five years period that is required by Walden University.

The Ethical Issues Checklist provided some guiding principles that encouraged honesty and transparency with the participants about the purpose of the study, to value the interviewees' time in a meaningful way, to keep the promises made, and to do no harm to the participants. These guidelines were addressed in the consent form and the procedures put in place to safe guard the participants' privacy and confidentiality. I withdrew two persons from the study in the first week of the study. One knew me

personally and the other did not meet the criterion of being a trained teacher in the subject area. Another participant who kept postponing the interview until the last week of the study was not replaced because most of the data were gathered by that point of time. The participants' identity was not audio-recorded and was not disclosed in the dissemination of the study results. I shared the study's results with the participants of the study.

Summary

In Chapter 3, I discussed the main issues related to the conduct of a generic qualitative research. This included the research design and rationale, the role of the researcher, methodology, and issues of trustworthiness. I discussed the process for conducting the research and presented a draft of the interview protocol. In Chapter 4, I discuss the process used to collect the data.

Chapter 4: Results

The purpose of this generic qualitative study was to understand teachers' use of strategies to infuse literacy across the curriculum to low literacy-ability adolescents and understand how teachers were trained to use these strategies, as well as their views on how to improve strategies used to teach literacy through experience to low literacy-ability adolescents in the English-speaking Caribbean. I used a generic qualitative design. This information can help teachers use strategies that can best assist adolescents to improve their literacy skills for the 21st century global workplace. Teachers' responses were examined using Dewey's theory of experience. The research questions that guided this study were:

RQ1: What strategies do teachers in the English-speaking Caribbean use to teach literacy across the curriculum through experience to low-literacy ability adolescents?

RQ2: What training have teachers undergone to adopt various strategies to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?

RQ3: What suggestions do teachers have to improve strategies used to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?

I collected data using semi-structured interviews. In this chapter, I present the results of the study as well as information about the setting, demographics, data collection, data analysis, and a summary.

Setting

Participants in this generic qualitative study were recruited from three junior secondary schools in an urban school district in the English-speaking Caribbean. This school district has 26 public secondary schools that receive funding from the government and is managed through the Ministry of Education. The 26 secondary schools can be placed into three categories based on the ability of students in these schools. There are the senior secondary schools with high-performing students, junior secondary schools with average-performing students, and junior secondary schools with low-performing students. Students who attend the low-performing schools have poor literacy skills.

Each of the three selected schools is located in the outskirts of this urban education district. School 1 had 315 students with classes from seventh to eleventh grade. School 2 student population was 438 students and 505 students attended school 3 with classes from seventh to eleventh grade. The average class size in these schools was 40 students. Most students who attended these schools came from homes of low socioeconomic status.

Demographics

Participants in this study were 11 teachers from three public junior secondary schools. Table 1 includes information regarding broad subject areas and years of teaching experience for each participant.

Table 1

Demographic Information

Teacher Code	Gender	Subjects Taught	Years of Experience			
			5-9	10-15	15-19	20+
Teacher A	M	Mathematics				x
Teacher B	M	Science				x
Teacher C	M	Mathematics	x			
Teacher D	F	English	x			
Teacher E	F	Mathematics	x			
Teacher F	M	Science		x		
Teacher G	M	Social Studies		x		
Teacher H	F	Science				x
Teacher I	M	Social Studies			x	
Teacher J	M	Social Studies			x	
Teacher K	F	English	x			

Note. x = year group for participants' years of experience

Teacher A worked for more than 20 years at both the primary and secondary levels. He has the unique experience of teaching from first to 11th grades. He taught two ninth grade and two 10th grade in School 1. Teacher B worked only at the secondary level and taught science in 10 classes at School 2: four ninth grade, two 10th grade, and four 11th grade classes. Teacher C, another participant from School 2, taught two ninth and 10th grade classes.

Teacher D taught one class each in seventh and 10th grades. Teacher E taught mathematics to two 10th and 11th grade classes. Teacher F taught science to one 10th grade and two 11th grade classes. Teacher G was attending university, and was not able to teach many classes. Teacher K was also attending university, hence she was only able to teach one 10th grade class. Teacher H taught science in six classes: three seventh grade, two 10th grade, and one 11th grade in School 2. Teacher I taught social studies in seven

classes: two in seventh grade, three in ninth, and one each for 10th and 11th grades.

Teacher J taught social studies also to six classes: one seventh grade, three eighth grade, and two ninth grade classes. All teachers graduated from the teacher training college with a trained teacher certificate, but five used the opportunity offered by the Ministry of Education to complete a Bachelor's degree at the university while still teaching. They were given official release to attend classes.

Data Collection

I received approval to conduct this study from Walden University IRB (#11-13-19-0445170) on November 13, 2019 and immediately wrote the Chief Education Officer (CEO) of the Ministry of Education to obtain permission to conduct the study. I received permission on November 14, 2019 and visited the Office of Education District with the CEO's approval letter on November 15, 2019. From 26 junior secondary schools, I conducted a random sample to select three schools. I received letters of introduction from the principal education officer of the education district for the three schools that were selected.

I visited School 1 on November 15, 2019, explained the study to the principal, and obtained the names of teachers in English, Mathematics, Science, and Social Studies departments who met the criteria of being trained teachers who were currently teaching those subjects. I conducted random samples to select one teacher from each department. With the principal's permission, I met with three teachers individually, explained the study, and sought their consent to participate. I continued this process in the three schools until November 25, 2019 and scheduled nine interviews with teachers when they agreed

to participate in the study. Three teachers (one from each school) attended university and were absent from school when I visited. However, I contacted two of the three teachers via telephone and obtained their consent to participate in the study. Teacher 12 agreed to participate in interviews the same day I explained the study and sought his consent to participate.

I conducted the first interview on November 26, 2019 with the mathematics teacher in School 1. The interview was conducted in a vehicle to provide the privacy the teacher needed. The school did not have additional spaces. The participant signed the consent form at the beginning of the interview. I used an interview guide with a list of pre-constructed questions for each of the three research questions (see Appendix A). I conducted the interview using this list of pre-constructed questions to facilitate the constant comparative method of analysis of participants' answers. I audio-recorded the interview using a mobile telephone and the recording was transferred and stored on my computer that was password-protected.

I conducted each interview in the same manner as I did the first interview. Nine interviews were conducted between November 26, 2019 and December 10, 2019 and three in January 2020. However, one teacher was not interviewed because the participant was absent on each of the scheduled appointments. Information on the interview number, school number, date, time, and length of each of the 11 interviews were recorded (see Appendix B). I conducted the last interview on January 30, 2020.

I conducted six interviews in vacant classrooms and five interviews in a vehicle to meet the privacy requirement for the study. The schools did not have a private room to

conduct the interviews. Also, I was unable to conduct the interview with the English teacher in School 1 because she kept re-scheduling the appointments until the 12-week period ended, although she consented to participate in the interview. Thus, 11 of the 12 scheduled interviews were conducted.

Three unusual situations occurred during data collection. First, I conducted the fourth interview with an English teacher in School 2 but this interview was discarded because the teacher did not meet the criterion of being a trained teacher. I discovered this during the interview when I asked for data for RQ2. I did another random sample with the remaining English teachers who met the criteria of being trained teachers and who were currently teaching the subject, and replaced this participant after explaining the mistake to the participant and the Principal. Secondly, I received permission to conduct the study on November 15, 2019, three weeks before the end of the Christmas term in December 2019, when the teachers had end-of-term marking and records to complete. The teachers had to give up time to participate in the interviews. Finally, three teachers were fulltime students at the university who were given leave from the Ministry of Education to attend classes during school hours. One of them I interviewed without a prior schedule because I was not able to make contact before. He was interviewed the same day he learned about the study.

Data Analysis

I transcribed and edited the 11 audio-recorded interviews. I used an online automatic transcription service to transcribe the first five interviews but the participants' accent resulted in a poor quality of automatic translation. I then transcribed all the

interviews manually thus allowing for a more accurate transcription. I listened to the interviews again and edited the interviews for verbatim translation.

I used a four-stage analysis process that I began on January 29, 2020. First I used the pre-determined codes and subcodes from John Dewey's theory of experience, seen in Table 2, to code each interview in answer to the three research questions. The theory of experience included four broad strategies that were used as the codes: interaction, continuity, curriculum flexibility, and fusion of subjects. Each broad strategy had sub-areas: interaction (teacher-student, student-student, and student-resources), continuity (previous knowledge, reflection), curriculum flexibility (infusion, flexible learning), and fusion of subjects (integrated content, associative learning, improvisation). These four broad strategies and their sub-areas were used as a priori or pre-determined codes and subcodes to obtain answers for the three research questions as are shown in Table 2. I examined each participant's comments in answer to the semi-structured questions and coded the transcribed interviews according to the three research questions by making comments in a Microsoft Word document. I checked each interview for clear messages and internal contradictions of the participant's comments and made journal entries. As I checked for the four a priori codes and 10 subcodes, other codes emerged from the data and these were recorded in my journal notes.

Table 2

A priori Codes and Subcodes Used to Analyze Semi-Structured Interviews

Main Codes	SubCodes	SubCodes according to Research Question		
		Question 1	Question 2	Question 3
Interaction	Teacher-Student Student-Student Student-Resources	Tr-St St-St St-Rs	Teacher Training: Tr-St Teacher Training: St-St Teacher Training: St-Rs	Suggestion: Tr-St Suggestion: St-St Suggestion: St-Rs
Continuity	Previous Knowledge Reflection	PK Ref.	Teacher Training: PK Teacher Training: Ref.	Suggestion: PK Suggestion: Ref.
Curriculum Flexibility	Infusion Flexible Learning	Inf. FL	Teacher Training: Inf. Teacher Training: FL	Suggestion: Inf. Suggestion: FL
Fusion of Subjects	Integrated Content Associative Learning Improvisation	IC AL Imp.	Teacher Training: IC Teacher Training: AL Teacher Training: Imp.	Suggestion: IC Suggestion: AL Suggestion: Imp.

During the second stage, I extracted the comments that contained the codes and subcodes from each interview into a Microsoft Word document using DocTools. The 11 documents with extracted comments showed the pages in the interview from which the comments were extracted, the comments, the codes and subcodes, the name of the author of the comments, and the date the comments were made. During the third stage of analysis, I used the extracted comments and recorded the number of times that participants stated they used each of the four codes and 10 subcodes as strategies to teach literacy in their subject areas. I checked to see those codes and subcodes that were discussed and compared them among the participants, in answer to the three research questions. As mentioned in Chapter 3, I planned to use Nvivo software in the analysis of

the data. Instead, I used DocTools to extract the comments about the use of the pre-determined codes and subcodes and used open coding to manually identify the emerging codes from the data. Finally, I compared the data collected with information from the literature review and dealt with researcher bias by ensuring the accuracy of the participants' comments in the data. At the completion of the process, the tentative results and conclusions were shared with the participants.

The data did not reveal discrepant data. However, two themes under RQ1 provided some contradictory data under student-student interaction and previous knowledge. One participant stated that the students in his mathematics class could not engage in group work or student-student interaction. The participant declared that the students' literacy skills were so poor that they could not engage one another to discuss, articulate, or write down the subject matter in completing group activities. Further, this participant, along with a participant that taught social studies, claimed that they could not use previous knowledge in the teaching of their subjects because the students did not retain content from previous lessons. These comments were not in agreement with those of other participants who stated that they utilized student-student interaction and previous knowledge to teach literacy in their subject areas. These are areas for further research to understand how low literacy skills can prevent engagement in student to student classroom interaction and use of previous knowledge. The comments of these participants are discussed further under the themes interaction-student-student and continuity-previous knowledge.

Evidence of Trustworthiness

Trustworthiness in a qualitative study helps the readers to share similar thoughts about the data collected as the researcher (Stahl & King, 2020). In the following paragraphs, I explain the four areas of trustworthiness which are credibility, transferability, dependability, and confirmability and discuss the strategies that I used to ensure the study met the requirements of trustworthiness.

Credibility

Credibility addresses the internal validity of the study by showing the truth of results of the study or how well the data reflect reality (Stahl & King, 2020). Credibility can be measured by using techniques such as member-checking, reflective journaling, and iterative questioning of the data (Connelly, 2016). For this study, I assured credibility in four main ways. I audio-recorded each interview and manually transcribed verbatim and by using online transcription service to ensure the accuracy of the participants' comments. During the coding process, the transcribed interviews were checked many times to ensure that the codes and subcodes were applied correctly in answer to the research questions. Throughout the iterative questioning of the data, I compared carefully the data among individual participants across schools for consistency. I kept a reflective journal where I recorded every aspect of the study that included my actions, decisions, and any changes I made to the process, to ensure credibility.

Transferability

Transferability refers to the external validity of the findings and whether the results can be applied in another situation or the extent to which the findings are useful to

others in different settings. However, the readers determine the applicability of the findings to their situation (Stahl & King, 2020). The researcher has to provide rich, detailed description of the participants and the research process to help the reader to assess the transferability of the findings to their setting (Korstjens & Moser, 2018). In this study, I provided details of the selection process, the interview guide, inclusion criteria, participants' demographics, and the data provided by the participants. In using three junior secondary schools, I provided multiple sites from which the participants were drawn which increased the variability of the participants.

Dependability

Dependability is expressed in a study when another researcher can arrive at the same conclusions after using the data in a study. Dependability can be measured through the transparent description of each step in the study. This can be done through an audit trail (Korstjens & Moser, 2018). In this study, I kept an audit trail by recording my decisions and actions in a reflective journal from the day I received IRB approval to the end of the study. Although I used only face-to-face interviews to collect data, the interviews were from teachers in four subject areas and three different sites that encourage comparison of data in multiple ways.

Confirmability

Confirmability refers to the methods a researcher uses to illuminate researcher bias from a study. These methods may include an audit trail, details notes of decisions and analysis, peer-reviewing, peer-debriefing, and member checking with participants (Stahl & King, 2020). To encourage confirmability during the interviews, I asked probing

questions to obtain clarifications from the participants about their answers. I kept a personal journal in which I described each stage of the study and the decisions and actions taken. I carefully scrutinized the data during the coding process and ensured that the participants' comments were coded accurately. At the end of the study, I shared my findings with the participants to ensure the data reflected their perspectives.

Results

In this section, I present the analysis of my data. I analyzed data according to the four a priori themes and 10 a priori sub-themes that arose from the literature review and conceptual framework. During coding, I also used open coding to identify emerging themes for each research question and these were analysed. Finally, I presented thematic results for each of the three research questions individually.

RQ1

The first research question was, what strategies teachers in the English-speaking Caribbean use to teach literacy across the curriculum through experience to low literacy-ability adolescents? I asked the teachers for their understanding of the four a priori codes and ten a priori subcodes aligned to Dewey's theory of experience and asked them to reflect on how they used these strategies to teach literacy in their subject areas of English, mathematics, science, or social studies. The key findings were: of the four a priori categories (interaction, continuity, curriculum flexibility, fusion of subjects) and 10 a priori themes, participants utilized the four a priori categories and seven a priori themes as strategies to teach literacy in their subject areas. The four most discussed themes were interaction-teacher-student, curriculum flexibility-infusion, interaction-student-student,

and interaction-student-resources as are reflected below in Table 3. The three lesser discussed themes were fusion of subject-integrated content, curriculum flexibility-flexible learning, and continuity-previous knowledge. I discuss the four most discussed themes and three lesser discussed themes below.

Table 3

A Priori Codes for Each Teacher for RQ1

Teacher Code	Interaction			Continuity		Curriculum Flexibility		Fusion of Subject		
	Tr-St	St-St	St-Rs	PK	Ref.	Inf.	FL	IC	AL	Imp
Teacher A	6	1	3	1	0	0	0	0	0	0
Teacher B	6	0	4	0	0	4	0	0	0	0
Teacher C	5	0	1	1	1	4	0	0	0	0
Teacher D	0	1	1	1	0	3	1	1	0	0
Teacher E	2	2	1	0	0	2	0	0	0	0
Teacher F	4	1	0	1	0	2	3	1	0	0
Teacher G	4	4	1	1	1	2	1	0	0	0
Teacher H	5	5	7	0	0	6	0	1	0	0
Teacher I	0	2	4	1	0	2	0	1	0	0
Teacher J	1	0	1	0	0	1	0	1	0	0
Teacher K	6	3	0	1	1	4	3	4	1	1
Total	39	23	19	7	3	30	8	9	1	1

Note. Tr-St =Teacher-Student; St-St = Student-Student; St-Rs = Student-Resources; PK = Previous Knowledge; Ref = Reflection; Inf = Infusion; FL = Flexible Learning; IC = Integrated Content; AL = Associative Learning; Imp = Improvisation.

Interaction: Teacher-Student (Tr-St)

Nine of 11 study participants discussed this a priori theme frequently for a total of 39 times. This aligns with the teachers' comments about the need to provide direct instructional support to the students to help them to learn. Participants described how students' reading and writing skills were so poor that teachers mostly used strategies that utilized methods such as oral presentations and jingles. For example, Teacher H said,

“We do a lot of oral presentations. I normally would give them a topic and tell them to make a jingle from it”. To assist the students to remember the core of the lesson taught, the teachers gave small amount of notes to the students to record the main points of the lesson’s content in their books. Teacher G explained the reason for this strategy thus, “What I normally do is try to make the least notes possible to give them and my reason for doing that is simply. I believe that if I give them that small amount of work they would be able to read and remember”. More teacher-directed interaction with students in oral classroom activities and limited written work increased engagement of students with low literacy skills and help them to learn.

Curriculum Flexibility-Infusion (Inf).

As the second most discussed theme, 10 of 11 participants explained about teaching literacy by engaging their students in activities such as reading, writing, listening, speaking, and thinking while teaching their subject content. Teaching literacy by infusion was popular with the teachers because literacy was needed to understand and express their subject areas but there was no time to teach literacy as a separate subject. For example, a social studies and a mathematics teacher claimed that literacy was being taught when the students “think, comprehend, express themselves, and understand to answer questions that are specific to social studies” (Teacher I) and “reading and writing and speaking in math class” (Teacher K). Other participants observed that the amount of work they had to complete and the time available did not encourage the teaching of literacy as a separate subject. A participant who taught English declared that even as an English teacher she did not teach literacy separately. Teacher D said:

I encourage them to read and I would try my best to give them spelling, allow them to recognize words and to be honest, that is all. I'm not making an excuse but the time and what is expected of me, do not provide the opportunity for me to do or teach literacy the way I want to.

Literacy skills such as listening, speaking, thinking, and expressing are necessary for learning in each subject area. By infusing these common skills in their content area, each subject teacher reinforced the teaching of these skills and helped students with low literacy ability to engage in new learning.

Interaction: Student-Student (St-St)

Small group activities were the main student-student interaction that eight of 11 participants discussed. These small groups consisted of two, three, four, or six persons. Participants revealed that in small groups, students help one another to learn. Some participants used small group activities because the students were “more interested to learn from their peers” according to Teacher D, and the students explained the teachers’ comments to one another in a way that they can understand. Teacher E said:

I think it's important that the students interact with each other because we have noticed I might be describing one problem a certain way, but then the other students are like a second voice, a third voice and they paraphrase for me all the time. When they speak with somebody like their peers, they learn from each other.

Students working in small groups provide support for their peers, thus making it easier for them to participate in classroom activities and learn new knowledge. However, one

teacher stated that small group work was not a strategy he used in his content area.

Teacher A indicated that the students in his school could not work in groups because of their weak reading, writing, and comprehension skills. The students were unable to discuss the topics and formulate written answers to the group activities. He described how he spent much time with the students individually to get them to deliver their assignments and school-based assessments.

Interaction: Student-Resources (St-Rs)

This theme involved the interaction of students with classroom resources or teaching/learning materials that include technological resources. Nine of 11 participants discussed this theme a total of 19 times. The resources ranged from word cards to tablets in smart classrooms. When asked how they used student-resources interaction to teach literacy, participants explained that the resources served as stimulants to learning for the students with weak literacy skills, especially the use of technology. One participant described his students as those without “high flying ability so we have to use material to get them up to standard first” (Teacher A). Another teacher showed her students’ heightened level of motivation when technology – tablets and smart board – were utilized to play literacy games and conduct other activities. She said, “The students were enthused. The bell rang and they were still in here. They wouldn't leave. If you want to get the students' attention that is what you have to use, technology” (Teacher K). Teachers’ use of learning materials, especially technological resources, heightened students’ motivation and engagement in classroom activities.

Summary of frequently-used Strategies for RQ1.

Teachers used the four strategies frequently to encourage student engagement in activities that strengthened the literacy skills of adolescent learners. Because the students lack the skills to learn on their own, they needed additional attention from their teachers. Teachers showed that increased teachers' interaction in oral lessons engaged the students' ability to think, understand, and express themselves. As each teacher involved their students in oral interactions, literacy was infused in every subject area. These strategies, combined with small group activities in which students help one another, increased the chances of students to learn the small amounts of core content of subject matter that were given to the students. Teachers' use of learning materials such as word cards and literacy games played on tablets, gave the students additional opportunities to reinforce their literacy skills that are needed for content learning in all subject areas. Teachers showed that these strategies together strengthened the students' literacy skills and increased the students' chances to retain what they were taught.

Fusion of Subjects: Integrated Content (IC)

Teachers in this study used other strategies less frequently. Integrated content was the first of the three lesser discussed a priori themes for RQ1. It referred to teaching other content areas along with the content in one's subject area. Five of 11 participants discussed using the content in science, social studies, English, and mathematics textbooks to reinforce literacy skills such as reading, pronunciation, grammar, sentence construction, and answering of questions when completing activities in their subject areas. For example, Teacher I said, "to think, to comprehend, to express themselves, and

to understand; and with that they are also answering the questions that are specific to social studies”. This was supported by Teacher E who described teaching reading and comprehension in mathematics: “So before I even teach the procedure in solving the problems, I need to actually teach them how to understand the problem; to read and really know what it’s saying”. Literacy is integrated in all subjects when teachers require students to read, comprehend, and express themselves to learn the content in various subject areas.

Curriculum Flexibility: Flexible learning (FL)

The second of the lesser discussed a priori themes, flexible learning referred to adopting the methodology to meet the students’ individual needs. Of the four of the 11 participants who discussed flexible learning, two referred to the students’ different learning styles and adjusting their curriculum and lesson plan as measures to be taken to meet the students’ needs. Teacher K explained that “the curriculum should be structured in such a way that would allow you [the teacher] to manipulate the curriculum...and cater for your students’ learning styles.” There are parts of the English-speaking Caribbean that are rural and isolated. Teacher K thought that content in the environment in the rural areas must be used instead of those used in the urban areas, thus manipulating the curriculum as necessary. Another understanding of flexible learning was described by Teacher G, as changing methodology in the classroom while conducting a lesson. She said, “I had planned work as a group activity and I realized that the planned activity was not effective because they [students] preferred individual work. So I went off from my original plan to accommodate their work”.

Another form of flexible learning was expressed by Teacher F in which he used oral interactive discussions and testing in science for those students whose spelling, reading and writing skills were very weak. Instead of giving the students essays to write, he had interactive discussions with the students and let them explain themselves. During small assessments, he said, “I give them a question to answer and during my marking, I would bring them to my table and tell them to explain what they have written and based on that, I am better able to give them a proper score than to just mark them on what I see”. Teachers recognized that teaching students with low literacy ability sometimes require adjustment to the teaching methods, the curriculum, and testing methods to meet the students’ individual needs.

Continuity: Previous knowledge (PK)

The last a priori theme for RQ1, previous knowledge is identified as learning gained prior to the lesson that can be used as foundation for the new learning. Four of the 11 participants described using students’ past experiences, knowledge from primary school, and linking knowledge taught earlier in their subjects to that being taught presently, as expressions of this theme. However, Teachers A and G who taught mathematics and social studies respectively at School 1, discussed that they could not use previous knowledge to teach in their content areas because their students did not remember what was taught in the previous lessons. Teacher A stated that he had to teach the concept from the beginning each time because the students did not retain what was taught. Teacher G said, “you [teacher] just have to go back again with them and you know, then they get it back.” Teaching the subject matter again re-activated the previous

knowledge. While previous knowledge can be used as foundation for learning new knowledge, teachers recognized its use was more effective if the teachers reminded the students of the prior learning before using it in the current lesson.

Summary of lesser used strategies for RQ1

Although many participants did not discuss using these strategies, some teachers showed that integrating literacy in content of other subject areas contributed to students practicing their literacy skills. Exercising flexibility in the way the curriculum is interpreted, taught, and tested, together with the use of previous knowledge, helped teachers to address the individual literacy needs of the students.

Emerging Theme

One new theme emerged for RQ1: teacher-resources interaction. Teacher A presented this theme when he stated that it was challenging to teach mathematics without teaching materials. Teacher A described the teacher's use of materials such as flash cards, to help the students to learn the terms used in mathematics. He said, "We normally do flash cards...we place the words on the board...before we go to a new topic...we give them the definitions." Teacher A stated that these methods were used "because the students don't have the ability to keep that information. It's not stored long term". In this theme, the teachers are interacting with the learning resources to teach literacy, thus adding the fourth theme under the category of interaction.

Summary for RQ1

This study identified seven a priori and one emerging strategy that teachers used to teach literacy to adolescents with low literacy ability in the English-speaking

Caribbean. Teachers used frequently, a combination of strategies that enhanced the chances of learning by strengthening the literacy skills of adolescent students. Teachers said that as they increased their interaction with the students, literacy is infused as the students engage in oral presentations and other exercises through which they practiced their thinking, comprehending, and speaking skills. Teachers used peer teaching in small group activities as this helped the weaker students to be supported by the stronger students. Teachers use of learning and technological aids motivated the students to learn and the small amount of notes given, helped the students to record and learn the core content of the subjects taught.

Teachers discussed the four frequently used strategies that were combined with three lesser used strategies that also added to the students' chances of learning literacy in their content areas. A few teachers recognized that in order to teach students with very weak literacy skills, the teachers needed to adjust when necessary, the curriculum, lesson plans, and methods to meet the needs of the individual students. This flexibility was reflected, not only in teaching, but by using oral method of testing so that the students' knowledge can be properly assessed. The teachers' use of these eight strategies assisted the students to strengthen their literacy skills and help them to acquire new knowledge in individual subject area.

RQ2

In response to the second research question, what training have the teachers undergone to adopt various strategies to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean, the

results revealed that participants were trained using strategies that can be described as four a priori themes namely, Infusion (Inf), Teacher-Student (Tr-St), Student-Resources (St-Rs), and Student-Student (St-St). I discuss the four a priori themes below.

Teacher Training: Inf.

This a priori theme was discussed most frequently by the participants as the method used in the teacher training college to teach teachers how to teach literacy in their subject areas. Nine of the 11 participants commented on this theme and six of the nine participants indicated that they were taught literacy by doing a course called ‘Reading across the Curriculum’. According to Teacher I, the course content focused on “how to teach the children to write, read, spell; phonics and word search, grammar, and so forth”. Two participants who attended teacher training college before 2005, did not study this course because it was not a part of the college’s curriculum at the time. These teachers were unable to respond to RQ2. One participant described learning to teach literacy at the university as a part of the English as a Second Language (ESL) course. According to the participants, the course ‘Reading across the Curriculum’ was the main strategy the college used to infuse literacy in their subject areas.

Teacher Training: Tr-St

In the context of RQ2, training teachers received to teach literacy, this a priori theme was described by four participants and highlighted any teacher-initiated actions in the classroom that assist students to strengthen their literacy skills. Teacher E said her lecturer emphasized that “you need to line up the board, form your letters clearly because all the while they’re still learning new words.” Two other strategies taught to trainee

teachers were creating mixed ability groups and giving the students limited notes. Learning to create the right mix of student in mixed ability groups was important to provide support for the weaker students “so that they [strong students] could be of help to that [weaker] child.” (Teacher D). Small amount of notes would increase the chances of the students being able to write, read, and retain the most important content from the lesson. As such, trainee teachers were taught to model literacy in how they write on the chalk board, organize their students for peer teaching in small groups, and giving small amount of notes to help the weak students to read and learn little amount of knowledge at a time.

Teacher Training: St-Rs

This theme dealt with how teachers were trained to use interaction between students and the resources in the classroom to teach literacy. Four participants agreed that they learned to use strategies such as picture studies to help students who cannot read but who can see the picture and express themselves by verbally describing them. The participants were taught to use word charts, phonics, and other learning aids. These strategies gave students the opportunity to develop inductive and deductive reasoning, and practice to express themselves orally, thus building their literacy skills.

Teacher Training: St-St

With regards to being taught to use interaction between students to teach literacy, two participants indicated that they were taught to use small group activities and to group students to encourage student-student interaction. Teachers discussed that students can assist other students to develop their literacy skills through the use of poetry writing.

Teacher G felt that the weak students can dictate their poetry to their peers who would then write them down, thus helping in the expression of their peers' words. Teacher D explained that they were taught not to group weak or introverted students "by themselves because then you wouldn't have a lot of interaction or learning taking place". Thus, teachers learned that the use of small groups with mixed ability students was a strategy to encourage student-student interaction through activities such as poetry writing and discussions that can result in learning.

Emerging themes

Two themes that emerged from the teachers' discussion of RQ2 were teacher-resources interaction and teacher-teacher collaboration. These themes were similar to the emerging theme in RQ1 as a part of the a priori category of interaction. Participants discussed being trained to use teaching/learning resources such as literacy kits that contained materials to teach phonics. Teacher-teacher collaboration, another emerging theme, was a strategy that encouraged subject teachers to seek the assistance of English teachers to strengthen the literacy skills of their students. Teacher H said trainee teachers were told to "Go to the English teacher or the English Department and ask for help". This was a science teacher who stated that she was encouraged to collaborate with the Language Department to benefit from their expertise in the area of literacy. Seeking the assistance of English teachers with the expertise to teach literacy, and utilizing literacy materials were two other strategies that trainee teachers learned to teach literacy to adolescents with low literacy skills.

Summary for RQ2

The main strategy used by the teacher training college to train teachers to teach literacy was through a course called Reading across the Curriculum. However, other methods that focused on classroom activities included teachers writing well-formed words on the chalkboard to model good writing and help the students to learn new words, and condensing the content taught to the core content to strengthen reading, writing, and retention of knowledge. The use of teaching aids such as word charts and picture study exercises gave students practice in expressing oral language with their peers, especially in small mixed ability group activities where peer interaction can be maximized.

RQ3

The third research question was, what suggestions do teachers have to improve the strategies used to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean? In response to RQ3, participants' suggested utilizing a priori themes of Infusion (Inf), Integrated Content (IC), Student-Resources (St-Rs), and Flexible Learning (FL) to improve the training for infusing literacy across the curriculum. Participants' responses also revealed eight emerging themes as suggestions that can improve the training offered to trainee teachers. I present these below.

Suggestion: Inf

With regards to this a priori theme, all participants in the study suggested using strategies to improve training in literacy, such as, literacy workshops, specific training in literacy for their subject areas (disciplinary literacy), continuous professional

development, in-depth literacy plan, and refresher courses. Although several strategies were suggested for all teachers, some participants indicated that English teachers were better trained to teach literacy and this was not accepted by them. Teacher B suggested that all teachers be given training that was “on par with the English language teachers.” Two participants declared that the training offered by the college, be continued after graduation through visits and refresher courses and the teachers be taught how to address the particular literacy problems that the students may have. Teachers requested that after graduation they be offered continuous training opportunities in literacy with the content being on par with that received by English teachers so that the students can receive the help they need for their literacy problems.

Suggestion: IC

To improve the strategies used to teach literacy at the teacher training college, seven out of 11 study participants suggested that literacy be integrated in the contents of their subjects. As they are trained to teach mathematics, science, English, and social studies, participants suggested that they be taught how to identify students’ comprehension and other literacy needs and how to address them. Teacher C, a mathematics teacher, suggested that “they teach us how to improve the students’ comprehension; teach us how to identify students that have these issues and how to help us to improve them”. Teachers requested disciplinary literacy, which is teaching literacy that is required for each subject matter, to help the students to address their particular literacy needs.

Suggestion: FL

In response to this a priori theme for RQ3, participants suggested using a mixture of strategies to help trainee teachers to master the teaching of literacy. Three participants who discussed this theme, suggested that trainee teachers complete their practicum at junior secondary schools with students with weak literacy skills so that they can practice what they were taught before graduating from college. According to Teacher F, “Do not send these trainees at these senior secondary schools. Send them where there is a bigger need. Send them where they will be challenged to use different techniques and adjust to suit.” Another suggestion was to have more practicums scheduled throughout the training program and not only in the final year. Therefore, exposure to students with weak literacy ability during more scheduled practicums, would help trainee teachers to develop their skills to teach students with low literacy abilities.

Suggestion: S-Rs

During the discussion of this a priori theme, two participants suggested that the teacher training college can invite secondary school students with weak literacy skills as guests to be a part of the literacy training. Trainee teachers interact with the secondary schools students and help the students to create learning resource materials such as poetry texts to be included in reading materials. The idea was that seeing their work being used as reading materials can motivate the students and others with weak literacy skills to develop their creativity. Teacher G suggested, “I’m saying use these children, use their poems. Let these poems be used in schools so that that can motivate others, so that they could follow the same thing”. Including low literacy-ability adolescents as part of the

teacher trainee literacy course, can help both teachers and students to develop resources, such as reading materials, that can contribute to the teaching/learning process.

Emerging themes

Along with the a priori categories and a priori themes, there were several emerging themes for RQ3 as seen in Table 3. The participants suggested ways that the teacher training programs can be improved through the contributions of the Central Ministry of Education and another centralized body responsible for professional development of teachers.

Table 4

Emerging Codes for RQ3

Emerging Code	Meaning of Emerging Code	Frequency
Suggestion: MOE	Central Ministry programs	6
Suggestion: CPD	Continuous training in school	6
Suggestion: Tr-Tr Collaboration	Inter-subject teacher support	8
Suggestion: Tr Training Collaboration	Using other teachers as resource persons	1
Suggestion: Tr- Parent Collaboration	Parent &Teacher supporting literacy	1
Suggestion: Home-School Partnership	Parent &Teacher improving student	1
Suggestion: Tr-Resources Interaction	Teacher requesting adequate resources	2
Suggestion: Tr-Trainer Interaction	Technical support from college in class	2
Suggestion: MOE-Technological Resources	Ministry providing technological support for the teaching of literacy	1

Some participants also suggested collaboration among teachers, the school and the training programs, the schools, and the parents to assist adolescents with low literacy-ability to learn literacy. More teachers discussed supporting other teachers in their subject areas, such as English teachers giving professional help to other subject teachers who do not have some literacy skills. For example, Teacher B, a science teacher stated, “so what we can actually do to improve with the help of the language teachers; let’s have a

workshop or...a few sessions as the term go by.” Other participants requested continuous professional development sessions and various kinds of assistance from Central Ministry of Education. Collaboration between the home, school, teachers, training college, and the Ministry of Education is necessary for the improvement of teaching literacy across the curriculum to adolescents with low literacy ability.

Summary of RQ3

Many suggestions were given to improve the training for teachers at the teacher training college and for practicing teachers after graduating from training college. Teachers requested opportunities for continuous professional development and refresher courses with the same quality of training that is offered to English teachers so that all subject teachers can address the literacy needs of their students within the uniqueness of each discipline. Including adolescents with low literacy ability in practicums for trainee teachers and in the creation of teaching/learning materials, will give the trainee teachers the opportunity to practice teaching literacy before they graduate, and motivate the students when they see their creative work, such as their poems, as part of reading materials for schools. Finally, collaboration between the home, school, teachers, college, and students can help the students to improve their literacy skills as key stakeholders work together to help the students.

Summary

In Chapter 4, I presented the results of this study and answers to the three research questions using a priori codes and subcodes, along with emerging themes. I used relevant direct quotes to substantiate the key findings. For RQ1, the key finding was that teachers

discussed more using the strategies of Interaction (teacher-student, student-student, student-resources), Infusion, and to a lesser extent, integrated content, flexible learning, and previous knowledge in the teaching of literacy in their subject areas to low literacy ability adolescents. For RQ2, nine of 11 teachers discussed being taught a course that helped them to teach literacy in their content areas. However, others discussed being taught other strategies that were described as teacher-student interaction, student-resources interaction, and student-student interaction strategies.

For RQ3, teachers discussed suggestions for the improvement of the training they received in teaching literacy in their subject areas. Many of these suggestions were described as infusion, integrated content, flexible learning, and student-resources strategies. In addition, there were many emergent strategies that were also discussed as suggestions for improving the training offered at the teacher training college.

In Chapter 5, I use results presented in Chapter 4 as the basis for the discussion and interpretations of the findings. I present the limitations of the study and recommendations for future research. I present also the implications for social change.

Chapter 5: Discussions, Conclusions, Recommendations

The purpose of this study was to understand teachers' use of strategies to infuse literacy across the curriculum to low literacy-ability adolescents, how they are trained to use these strategies, as well as their views on how to improve strategies used to teach literacy through experience to low literacy-ability adolescents in the English-speaking Caribbean. I selected the generic qualitative study design to answer three research questions. I conducted this study to add to the body of knowledge, the perspectives of these teachers.

Eleven teachers used Dewey's four categories and seven strategies to teach literacy to low literacy-ability adolescents in the subject areas of mathematics, English, science, and social studies. Nine of 11 participants received training to infuse literacy in their subject area through a course offered at the teacher training college, but others also received training to use interaction and continuity as strategies to teach literacy to low literacy-ability adolescents. Teachers suggested using integrated content, flexible learning, and student resources to improve the training they received to teach literacy in these content areas.

In this chapter, I present findings of the study in relation to the three research questions, the literature review, and the conceptual framework. Limitations of the study and recommendations for future research are also discussed. Finally, I end with a discussion of the implications of study findings, applications for social change, and a conclusion.

Interpretation of the Findings

The literature review in Chapter 2 and Dewey's theory of experience shaped the findings of this study. Some of the finding from this study confirm, disconfirm, and extend finding from the literature review. Findings are presented by question.

In this study, the teachers' use of classroom interaction, continuity, curriculum flexibility, and fusion of subjects illustrated the use of student-centered strategies to improve the teaching/learning experience of their low literacy-ability adolescent students. According to Dewey (1938), teaching through experience requires the teacher to use student-centered strategies such as classroom interaction, continuity, curriculum flexibility, and fusion of subjects to enhance the learning experience of their students. The participants in this study, interacted more often with their students to teach literacy across the curriculum, and used less interaction between students and their peers, or students with teaching-learning resources.

In a study conducted in Malang, East Java, Suryati (2015) observed 18 teachers' use of interaction strategies in English Language Teaching (ELT) in lower secondary schools. Suryati's findings revealed that teachers spent 93% of their teaching time using teacher-student interactions strategies and 7% using student-student interactions. Participants in my study indicated that their students' poor literacy skills prevented them from working with their peers and created the need for more teacher-led activities in order for learning to occur.

Teachers' use of students' previous knowledge requires the teachers to use knowledge students gained from previous lessons, home, community, or real life

experiences. However, Shing and Brod (2016) said previous knowledge hinders knowledge acquisition if it is not properly activated. Glogger-Frey et al. (2018) said previous knowledge has to be properly stored to be retrieved and used for new learning. My study supported the findings of Shing and Brod (2016) and Glogger-Frey et al. (2018). Two teachers (mathematics and social studies) stated that their students could not recall information from previous lessons without having the content re-taught during each subsequent lesson.

Classroom teaching/learning resources are essential for teaching through experience. This study showed that the participants use tablets and smart boards greatly motivated their students to learn literacy using activities such as literacy games on tablets. Bhati and Song (2019) said using mobile devices to encourage experiential learning in education can increase student engagement in education at a lower cost, especially for students in developing areas of the world. Participants in this study recognized the high cost of technology and suggested that the Ministry of Education provide schools with smart boards and tablets to support students to develop their literacy skills.

Nine of 11 participants in this study completed a teacher-education program called Reading across the Curriculum through which the participants were taught to infuse literacy in their content areas. The use of formal courses to teach literacy integration is consistent with Mitton Kukner and Murray Orr (2015) study that showed positive results when teachers were taught a course called Literacy in Content Areas. Dewey (1938) said also that teaching through experience encourages the integration of subject matter to make it easier for students to learn new knowledge.

Participants were taught to use generic strategies such as word charts and phonics to infuse literacy. Dewey's teaching through experience requires that teachers use student-centered teaching which includes the use of teaching/learning resources. While participants showed that the use of word charts and phonics helped students with low literacy-ability learn relevant texts, Fang (2014) showed that these strategies may be inadequate to teach content in specific disciplines.

In this study, participants suggested the need for continuous technical support from the training college, regular continuous professional development programs, collaboration among key education stakeholders, and provision of technological resources by the Ministry of Education as strategies to improve the training they received to teach literacy in their content areas. Continuous professional development and collaboration with key education stakeholders are consistent with the whole school approach described by Barton and McKay (2016) which showed that providing continuous support is critical for teachers to effectively teach their students with weak literacy skills. Dewey (1938) also advocated the involvement of the home, school, and community to make learning relevant and to incorporate previous learning experiences in the acquisition of new learning.

Participants in this study identified several reasons for continuous technical support that include being unable to recall what they were taught and the fast pace of the course. They expressed the desire to have the same training as English teachers to infuse literacy in their subject areas and to acquire the skills to meet their students' needs. The argument presented by Fang (2014) and Ingram et al. (2016) about whether trainee

teachers should be taught to infuse literacy in content areas or to use literacy as experts in a discipline, adds to the discussion of finding appropriate strategies for pre-service teachers to learn how to teach literacy in their content areas.

Limitations of the Study

The limitations to trustworthiness in this study is related to the research design. The use of a generic qualitative study allowed for a small sample size of 11 participants. However, there is limitation to the transferability of the study findings due to the small number of participants that create challenges to applying the results of the study to other populations. The study site was a small part of the population of the English-speaking Caribbean that consists of several island states with their own context, although the Caribbean region has many similarities. More research needs to be done in other Caribbean countries to increase the degree of transferability of the findings of this study.

In Chapter 3, I discussed my potential bias and stated how I would mitigate against them. As the head of a national agency, I was known to some participants. This could have influenced the truthfulness of the participants' responses because they may have given me answers which they thought I wanted to hear.

The third limitation was with the study design in the answering of RQ2 that was based on the training the teachers received from the teacher training college to teach literacy in their subject areas. Some participants attended the teacher training college more than 15 years ago and did not remember what they were taught nor did they participate in the course Reading across the Curriculum. These participants were unable

to adequately answer some questions that were based on their teacher-training experiences and could have restricted the richness of the data.

Recommendations

Recommendations for further research are based on the findings of the study. This study was conducted with three junior secondary schools that were known to have students with low literacy-ability. I recommend that additional studies be done with the senior secondary schools to understand teachers' perspectives of their experience of teaching literacy across the curriculum using the strategies as expressed in Dewey's theory of experience. This recommendation is based on participants' discussion for trainee teachers at senior secondary schools to have experiences in teaching at junior secondary schools and vice versa.

My study focused only on the four core areas of English, mathematics, science, and social studies. There are many other subjects that are taught at the junior secondary schools. I recommend that this study be replicated in other subject areas to understand the teachers' perspectives in those subject areas also.

In the analysis of the data for RQ1, opposing data emerged when two teachers discussed that students did not remember the content taught in previous lessons and were unable to work in groups. The data showed that the students' lack of literacy skills contributed to these problems. These can be areas for further research that can seek to understand how poor literacy skills hinder learning in group work, and the use of previous knowledge in the English-speaking Caribbean.

In RQ2, participants discussed their dissatisfaction with the training they received at the teacher training college to teach literacy across the curriculum. The participants provided suggestions to improve the training they received in answer to RQ3. I recommend that further research be conducted on teacher training in the area of literacy because many adolescent students in the English-speaking Caribbean have weak literacy skills.

Implications

This study can contribute to positive social change in three ways. First, the individual teachers in the secondary school classrooms may reflect on the problem of adolescents with weak literacy skills and the importance of literacy to learning new knowledge. This can create a desire to do something to address the issue. Teaching through experience focuses on quality classroom interaction, utilization of flexible learning and students' previous experiences, while catering for the students' individual needs.

Another positive change to which this study can contribute is the training teachers obtain at the teacher training college in the area of literacy. The college can obtain feedback from graduates that can encourage them to re-visit the structure and delivery of the literacy program. Teachers are asking for training to recognize literacy deficiency in their students and to find the strategies to help their students improve their literacy skills. Some are requesting continuous technical support after they have graduated and are in the classroom. Results of this study can be shared with the teacher training college and can be used to influence change. Finally, this study can contribute to increased focus on

teaching through experience that focus on building positive classroom environments. Teachers can focus on creating positive interactions and ensuring that students' individual needs are met. As the adolescents' literacy improves, this can have a positive impact on their lives, their families, and their communities as they become better prepared to contribute to their development and success in the 21st century global community.

Conclusion

In this generic qualitative study, I sought to understand teachers' perspectives on the strategies they used to teach literacy across the curriculum through experience to adolescents with low literacy ability in three junior secondary schools in the English-speaking Caribbean. I also sought to understand how the teachers were trained to use these strategies, and as well as how the training can be improved. Teachers used classroom interaction in four forms: teacher-student, student-student, student-resources, and teacher-resources in their efforts to teach literacy in their subject areas. They also used infusion, integrated content, flexible learning, and previous knowledge. The teacher training college used infusion as the main strategy to teach literacy to trainee teachers and the teachers suggested many ways to improve the training. Recommendations were given to extend this study's results through further research. In contributing to social change, the key findings from this generic qualitative study can enhance the awareness of practicing teachers in the secondary classroom to the strategies to help their students with low literacy skills. Persons responsible for the training of teachers, both at the college

and for continuous professional development programs can re-visit their teacher education programs, based on the feedback of the participants in this study.

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Appendix A: Interview Protocol

Research Questions	Interview Questions with Probes
<p>Research Question No. 1:</p> <p>What strategies suggested in Dewey's Theory of experience do teachers in the English-speaking Caribbean use to teach literacy across the curriculum through experience to low-literacy ability adolescents?</p>	<p>What do you know about interaction, continuity, curriculum flexibility, and fusion of subjects as strategies to teach across the curriculum?</p> <p>(i) interaction – (student-student, teacher-student, student-learning resources)</p> <p>(ii) continuity – (previous knowledge, reflection)</p> <p>(iii) curriculum flexibility – (infusion, flexible learning)</p> <p>(iv) fusion of subjects – (integrated content, associative learning, improvisation/incidental learning)</p> <p>Probes:</p> <p>(a) What is your understanding of each term?</p> <p>(b) What does it mean to teach across the curriculum?</p> <p>(c) How do you use these strategies to teach literacy in your subject area?</p> <p>(d) What other strategies do you use to teach literacy in your subject area?</p>
<p>Research Question No. 2:</p> <p>What training have the teachers undergone to adopt various strategies to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?</p>	<p>How did the pre-service/in-service teacher training program in which you participated include the strategies of interaction, continuity, curriculum flexibility, and fusion of subjects?</p> <p>Probes:</p> <p>(i) Tell me about your teacher training program. Which one did you attend? What was the duration of the program?</p> <p>(ii) What were you taught to use these strategies in teaching in your subject?</p> <p>(iii) How were you taught to use these strategies to teach literacy in your subject area?</p> <p>(iv) Since graduating from the teacher training program, what training have you received to help you to maintain the practice of teaching literacy in your subject area using the four strategies?</p> <p>(v) What other training program(s) is/are available for teaching literacy across the curriculum?</p>

<p>Research Question No. 3: What suggestions do teachers have to improve the strategies used to teach literacy across the curriculum through experience to low literacy-ability adolescents in the English-speaking Caribbean?</p>	<p>Probes:</p> <ul style="list-style-type: none">(i) What do you suggest should be included in the pre-service/in-service teacher training program to prepare teachers to teach literacy to low literacy-ability adolescents in their subject areas?(ii) How can practicing teachers be better supported in the classroom to teach literacy in their subject area using interaction, continuity, curriculum flexibility, and fusion of subjects?(iii) What other suggestions do you have to improve the strategies used to teach literacy in your subject area?
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Appendix B: Schedule of Interviews

Interview Number	School Number	Date	Time	Duration (mins)
Interview # 1	#1	11/26/2019	10:00h	25
Interview # 2	#2	11/29/2019	10:15h	40
Interview # 3	#2	11/29/2019	13:30h	44
Interview # 4	#3	12/03/2019	13:45h	29
Interview # 5	#3	12/03/2019	14:30h	27
Interview # 6	#3	12/04/2019	10:45h	45
Interview # 7	#1	12/10/2019	11:00h	47
Interview # 8	#1	12/10/2019	12:05h	46
Interview # 9	#2	01/22/2019	14:30h	24
Interview # 10	#3	01/23/2020	14:00h	27
Interview # 11	#2	01/30/2020	09:20h	34