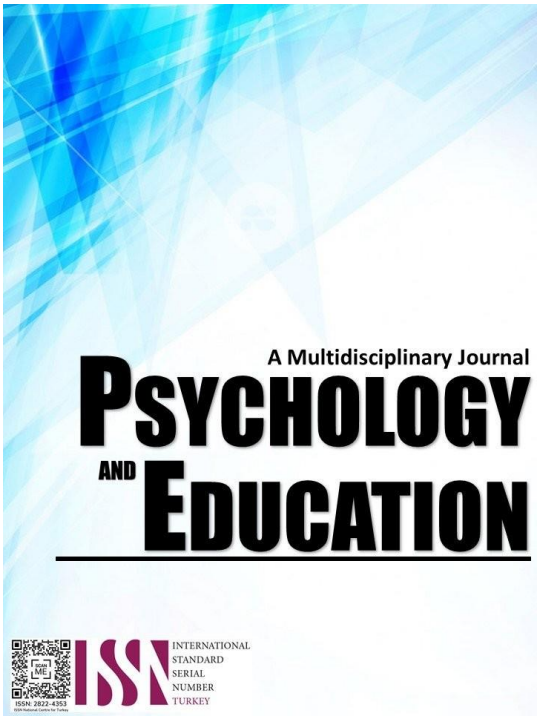
READING STRATEGIES, LEARNING STYLES, AND READING COMPREHENSION IN ENGLISH OF SENIOR HIGH SCHOOL STUDENTS IN THE DIVISION OF SULTAN KUDARAT



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Research Article

Reading Strategies, Learning Styles, and Reading Comprehension in English of Senior High School Students in the Division of Sultan Kudarat

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Abstract

The study aimed to determine the extent of use of reading strategies, the learning styles manifested and the reading comprehension level in English of the senior high school students in the Division of Sultan Kudarat. Specifically, it ascertained the degree to which students apply reading strategies and learning styles (global, problem-solving, supportive, and global), the extent of learning style manifestation (active, reflective, sensing, intuitive, visual, verbal, sequential, and global), and the significant relationship between reading comprehension level and these manifestations. Using Slovin's Formula with a 5% margin of error, the study involved 378 respondents from all independent schools in the Sultan Kudarat Division. Additionally, a non-experimental quantitative design utilizing the descriptive correlation technique was applied in this study. The students were given three instruments: a Survey of Reading Strategies (SORS), an Index of Learning Styles (ILS), and a Reading Comprehension Test (RCT). Based on the result of the study, the students usually used problem-solving reading strategies followed by global and support reading strategies. Also, they usually manifest verbal learning styles followed by intuitive, active, reflective, global, sequential, visual, and sensing learning styles. They were instructional in their reading comprehension level. It was also revealed that the reading strategies used by the students and their manifested learning styles did not have a significant relationship to the reading comprehension level of the students. This study suggests further investigation of the other factors that contribute to the student's reading comprehension.

Keywords: *reading strategies, learning styles, reading comprehension, senior high school*

Introduction

Reading is essential since it is a process that helps in the formation of the meaning of the text. Learners process incoming information in different ways; hence, teachers need to vary their methods of teaching to ensure that all students learn. Knowledge of the reading strategies used by English Second Language learners can help teachers plan appropriate lessons and apply relevant methods of teaching reading to enhance learners' reading comprehension (Cekiso & Madikiza, 2014).

Due to the vital importance of reading, many studies were conducted to discover the nature of reading as well as the factors that contribute to the successful comprehension of the person. One of those factors, reading metacognitive awareness of reading strategy use, has been investigated in reading in the L1 and L2. Studies have shown that reading is an interactive, psycholinguistic meaning-building process in which readers employ a multitude of strategies to achieve comprehension (Nguyen, 2014).

The Philippines became a member of the Organization for Economic Co-operation and Development (OECD) Programme for International Student Assessment (PISA) in giving the Quality Basic Education reform plan as a step in the quality of our government's basic education globally. In 2018, the results revealed that the Philippines came in last among 79 countries in terms of reading comprehension (San Juan, 2019).

Education Secretary Leonor Briones stated that reading comprehension, not literacy, is the issue in the region of the Philippines, attempting to rectify and elucidate an Inquirer report that claimed over 70,000 pupils in the area were illiterate in both Filipino and English (Salaverria & Adonis, 2020).

Thus, there exists a need to conduct further research to gain insight into the nature and extent of the relationship between the perceived use of reading strategies, reading comprehension, and learning styles in the second language. As the researchers stated, the results of the study are important as they contribute to furthering the knowledge of the characteristics and conditions of reading strategy usage in L2. Furthermore, by investigating individual differences in reading, the findings contribute to a better understanding of the strategic reader's characteristics, thus enhancing the effectiveness of the reading strategy that affects the reading comprehension of the students (Gurses & Bouvet, 2016).

This research study was conducted to contribute to the latest PISA result for 2018 in Philippine Education. The study focused on Sultan Kudarat Division since the researcher teaches there. This study investigated the extent of use of reading strategies, the learning styles manifested and their significant relationship to the reading comprehension level in English of the Senior High School students in the Division of Sultan Kudarat.

Research Objectives

The purpose of this study was to evaluate senior high school students in the Sultan Kudarat Division about their reading comprehension proficiency in English, their learning styles, and the degree to which they employed reading strategies. Specifically, this study did the

following:

1. Determined the usage to which the students apply reading strategies:
    1.1. Global;
    1.2. problem-solving; and
    1.3. support.
2. Determined the extent to which the following learning styles are manifested by the students:
    2.1. active;
    2.2. reflective;
    2.3. sensing;
    2.4. intuitive;
    2.5. visual;
    2.6. verbal;
    2.7. sequential; and
    2.8. global.
3. Determined the students' level of reading comprehension.
4. Determined the relationship between the student's level of reading comprehension and their use of the following reading strategies:
    4.1. global;
    4.2. problem-solving; and
    4.3. support?
5. Determined the correlation between the pupils' reading comprehension proficiency and the degree to which they exhibit the following learning styles:
    5.1. active;
    5.2. reflective;
    5.3. sensing;
    5.4. intuitive;
    5.5. visual;
    5.6. verbal;
    5.7. sequential; and
    5.8. global.

Methodology

Research Design

The study used a quantitative-correlational research design. It assessed the senior high school students' reading comprehension proficiency in English, their demonstrated learning methods, and the amount to which they used reading strategies. It also determined the relationship between the reading comprehension level and the extent of use of reading strategies as well as the learning styles manifested in English of the senior high school students in the Division of Sultan Kudarat.

Respondents

The respondents of the study were the senior high school students enrolled during the second semester of the school year 2019- 2020 in the Division of Sultan Kudarat, particularly in the 10 independent schools. These independent schools were financially independent from the Division Office. Considering that the researcher was a senior high school teacher, and the biggest number of enrollees were there, the researcher chose the independent schools as the respondent- schools of the study.

Sampling Techniques

The researcher considered the 10 independent schools that offered senior high schools in the Division of Sultan Kudarat. These respondent- schools had 6, 804 senior high school students. Using Slovin's formula with a 5% margin of error, 378 respondents were obtained. To determine the individual sample of each school, ratio and proportion were used. In the selection of the samples per school, the school head or the principal chose and recommended the class to be the sample in the study.

The following table presents the distribution of respondents per school. The sample was obtained using ratio and proportion.

Table 1. *Distribution of Respondents per School*

Name of the School (SHS)	*Population*	*Sample*
School A	1, 824	101
School B	1, 730	96
School C	834	46
School D	665	37

School E	485	27
School F	406	23
School G	345	19
School H	212	12
School I	170	9
School J	133	8
Total	6, 804	378

Table 1 displays the distribution of respondents per school. To get the individual sample of each school, ratio and proportion were used. By using this procedure, the total samples were divided into the total student population after being multiplied by the registered population of each institution. So, 378 was multiplied to 1,824 and divided into 6, 804 which resulted in 101 samples in School A. Using the same method, School B had 96 samples out of 1, 730 students; School C had 46 samples out of 834 students; School D, 37 out of 665 students; School E, 27 out of 485 students; School F, 23 out of 406 students; School G 19 out of 345 students; School H, 12 out of 212 students; Nine out of 170 pupils were from School I, while eight out of 133 students were from School J.
As shown, there were 378 senior high school students from the ten (10) respondent- schools with a total population of 6, 804 senior high school students in the Division of Sultan Kudarat who participated in the study.

Instrument

The researcher used three instruments to gather the data. First, the adopted 5-point Likert Scale Survey of Reading Strategies (SORS) from Mokhtari and Sheorey (2002). Second, the adopted 5-point Likert Scale Index of Learning Styles (ILS) from Felder and Soloman (2004). And the last, the researcher-made Reading Comprehension Test (RCT) was validated by five master teachers in the Division of Sultan Kudarat. This RCT underwent five validation processes such as planning, construction, face validity, content validity, and quantitative validation (pilot testing).

Procedure

The researcher secured a letter of permission from the Dean of the Graduate School and from her adviser to get the list of all senior high schools with an equivalent number of students who were enrolled for the academic year 2019–2020. Upon the approval of the Graduate School, she wrote a letter of permission to the Planning Office of the Division of Sultan Kudarat to get the list of all senior high schools with a corresponding number of enrollees during the school year 2019- 2020. After getting the list of respondents, she consulted with the statistician of the study for sampling techniques.

The researcher used three instruments in the study: Survey of Reading Strategies (SORS), Index of Learning Styles (ILS), and Reading Comprehension Test (RCT). SORS and ILS were adapted with the consent of the developers while the reading comprehension test was researcher-made; so, she conducted the validation process. Following the test's creation, she requested assistance from their school's master teachers to complete the reading comprehension test's face validity and content validity. After the face and content validity, she made a letter of permission to the Dean of the Graduate School and from her adviser to conduct the pilot testing of the reading comprehension test to the representative sample.

Upon the approval of the Graduate School, she secured a letter of approval from the principal for a representative sample for the pilot testing of the Reading Comprehension Test. Then, she oriented the students about the purpose of the test and after the orientation, she administered the Reading Comprehension Test to the representative samples. She collected and examined the learners' tests. She gave one point for each correct answer to the students. After checking, she did the Item Analysis to determine the Difficulty Index of the test with the approval of the experts.

After the validation of the Reading Comprehension Test, she made a Letter of Permission to conduct the study in the DepEd Division Office of Sultan Kudarat. The researcher then provided a letter of approval to each school head/principal of the respondent- schools. In the selection of the respondents per school, all principals decided and chose who should be the respondents of the study.

Upon the approval of each school, before the administration of the instruments, the researcher gave a brief orientation of the purpose of the study and how they were going to respond to each instrument for one hour and 30 minutes. Before the administration of the instruments, the researcher provided consent forms to the respondents for ethical considerations. The volunteered respondents were given the three instruments and responded to them for one hour and 30 minutes. She gave out the Index of Learning Styles (ILS), created by Felder & Soloman (2004), the Reading Comprehension Test, and the Survey of Reading Strategies (SORS), which she had taken from Mokhtari and Sheorey (2002).

After the completion of the three instruments, the researcher collected and analyzed the data with the guidance of the statistician and the adviser of the study.

Data Analysis

The extent of the use of reading strategies and the learning styles manifested by the students were determined using Mean (SOP #1 & SOP #2). To describe and interpret these, the following criteria were adopted from Mokhtari and Sheorey (2002):

Mean	*Description*
4.20 - 5.00	Always
3.40 - 4.19	Often/Usually
2.60 - 3.39	Sometimes
1.80 - 2.59	Occasionally
1.00 - 1.79	Never

To determine the reading comprehension level of the students, frequency count was used (SOP #3). To describe and interpret this, the following criteria were adapted from Phil-IRRI:

Scores	*Description*
24-30	Independent Level
17- 23	Instructional Level
below-16	Frustration Level

To determine the relationship between the reading comprehension level of the students and the extent of their use of reading strategies (SOP #4) and the relationship between the reading comprehension level and the extent of learning styles manifested by the students (SOP #5), Pearson Product- Moment Correlation Coefficient was applied. To interpret the correlation, the following criteria were adopted from the study of Calmorin & Calmorin (2014), as cited by Espejo & Macahilig (2016):

r	*Description*
±0.00 - ±0.20	Negligible Correlation
±0.21 - ±0.40	Low/Slight Correlation
±0.41 - ±0.70	Marked/ Moderate Correlation
±0.71 - ±0.90	High Correlation
±0.91 – ±1.99	Very High Correlation
± 1	Perfect Correlation

Ethical Considerations

Ethical considerations in research are a collection of guidelines that guide the research's designs and procedures. These guidelines include confidentiality, beneficence, informed consent, voluntary participation, gender sensitivity, culture sensitivity, the Data Privacy Act, and among others.

Privacy and Confidentiality. The researcher values the secrecy of the discoveries and protection of the informants or participants by utilizing a coding framework to conceal their actual personalities. The Data Privacy Act of 2012 applies to this research. As a result, the acquired information will be kept strictly confidential and utilized solely for this study.

Informed Consent. Because the researcher values the respondents' well-being and ability to choose whether to participate in the study, written informed permission will be obtained before data collection.

Voluntary Participation. The respondents know that their participation is entirely voluntary and that they have the right to withdraw at any moment, for any reason, and at no cost.

Beneficence. The researcher needs to limit the dangers related to this research, including mental and social dangers.

Results and Discussion

Global Strategies Reading Strategies

Global strategies are deliberate, well-thought-out techniques readers use to keep an eye on and control their reading. By using these techniques, students develop critical thinking skills. They examine the information provided in the text. Table 2 carries the global strategies in reading for senior high school students.

Table 2. *Students' Global Reading Strategies*

	Indicators	*Mean*	*Description*
1	When I read, I have a goal in mind.	4.06	Usually
2	I think about what I know to help me understand what I read.	4.01	Usually
3	I check my understanding when I come across new information.	3.96	Usually
4	I check to see if my guesses about the text are right or wrong.	3.90	Usually
5	I assess and critically examine the data that is provided in the text.	3.88	Usually
6	I try to guess what the content of the text is about when I read.	3.84	Usually
7	I take an overall view of the text to see what it is about before reading it.	3.76	Usually
8	I make use of context cues to enhance my comprehension of the material I'm reading.	3.69	Usually
9	I use typographical features like boldface and italics to identify key information.	3.68	Usually
10	I think about whether the content of the text fits my reading purpose.	3.66	Usually
11	To improve my comprehension, I make use of the text's tables, figures, and images.	3.65	Usually

12	I choose what to read carefully and what to disregard when I'm reading.	3.56	Usually
13	I review the text first by noting its characteristics like length and organization.	3.35	Sometimes
	Section- mean	3.77	Usually

n=378

As shown in Table 2, the respondents obtained a 3.77 section- mean which means that the senior high school students usually used global reading strategies. This implied that the students used global strategies when they had the intention and planned well the strategies to be used when they read. In the study of Barrot (2016) and Al-Rubaye (2012), these strategies were very observable to the ESL and EFL learners.

Specifically, the table shows that the students usually had a purpose in mind when they read (mean= 4.06); usually thought about what they knew to help them understand what they read (mean= 4.01); usually checked understanding when they came across new information (mean= 3.39); usually checked to see if they guessed the text right or wrong (mean= 3.90); usually critically analyzed and evaluated the information presented in the text (mean= 3.88); usually tried to guess what the content of the text was (mean= 3.84); usually took an overall view of the text to see what it was about before reading it (mean= 3.76); usually used context clues to help them better understand what they were reading (mean= 3.69); usually used typographical features like bold face and italics to identify key information (mean= 3.68); usually thought about whether the content of the text fits their reading purpose (mean= 66); usually used tables, figures, and pictures in text to increase their understanding (mean= 3.65); and usually decided what to read closely and what to ignore (mean= 3.56). They sometimes reviewed the text first by noting its characteristics like length and organization (mean = 3.35).

Problem-Solving Reading Strategies

Readers employ problem-solving techniques when they run across difficulties while they are reading. For instance, if the text is tough for them, they will read it again. To help them understand the content better, they also modify their reading speed by reading it more slowly. Table 3 mounts the problem-solving reading strategies of the senior high school students.

Table 3. *Students' Problem-Solving Reading Strategies*

Indicators		*Mean*	*Description*
1	I take my time reading and make sure I comprehend what I'm reading.	4.26	Always
2	When text becomes difficult, I re-read it to increase my understanding.	4.23	Always
3	When text becomes difficult, I pay closer attention to what I am reading.	4.11	Usually
4	When I lose focus, I make an effort to regain it.	4.11	Usually
5	I try to picture or visualize information to help me remember what I read.	4.05	Usually
6	I adjust my reading speed according to what I am reading.	4.00	Usually
7	When I read, I guess the meaning of unknown words or phrases.	3.76	Usually
8	I stop from time to time and think about what I am reading.	3.60	Usually
	Section- mean	4.01	Usually

n=378

As shown in Table 3, the respondents obtained a 4.01 section- mean which means that the senior high school students usually used problem-solving strategies. This implied that the students used problem-solving strategies when they encountered problems when reading. This was very evident in the study of De Leon & Tarrayo (2014); and Abdelmalek (2015) in the EFL and ESL learners.

Specifically, the table shows that the students always read slowly and carefully to make sure they understood what they read (mean=4.26), and always re-read when the text became difficult (mean= 4.23). They usually tried to get back on track when they lost concentration (mean 4.11) and usually paid close attention to what they read when the text became difficult (mean 4.11). They also usually tried to picture or visualize information to help them remember what they were reading (mean= 4.05); usually adjusted their reading speed according to what they read (mean= 4.00); usually guessed the meaning of the unknown words or phrases (mean= 3.76); and usually stopped from time to time and thought about what they were reading (mean= 3.60).

Support Reading Strategies

Basic strategies such as using a dictionary, taking notes, underlining, or highlighting textual content are known as support methods and are intended to aid the reader in understanding the content. Learners do better when they have access to resources. The senior high school students' support strategies are shown in Table 4.

Table 4. *Students' Support Reading Strategies*

Indicators		*Mean*	*Description*
1	I use reference materials to make sense of what I read, such as dictionaries.	4.02	Usually
2	I underline or circle information in the text to help me remember it.	3.76	Usually
3	I rephrase what I've read in order to consider key points made in the book.	3.59	Usually
4	I quiz myself on what I've read by having discussions with people.	3.59	Usually
5	To make sense of what I read, I paraphrase—putting concepts in my own words.	3.52	Usually
6	I ask myself questions I like to have answered in the text.	3.52	Usually
7	II go back and forth in the text to find relationships among ideas in it.	3.42	Usually

8	I take notes while reading to help me understand what I read.	3.41	Usually
9	When text becomes more difficult, I read aloud to help me understand what I read.	3.33	Sometimes
	Section- mean	3.57	Usually

n=378

As shown in the table, the respondents obtained a 3.57 section- mean which means that the senior high school students usually used support strategies. This implies that the students used basic support mechanisms to help them understand the text more when they were reading. This is supported by the study of Nguyen (2014) and Illustre (2011).

Specifically, the table conveys that the students usually used reference materials (e.g. a dictionary) to help them understand what they read (mean= 4.02); usually understood or circled information in the text to help them remember it (mean= 3.76); usually summarized what they read to reflect on important information in the text (mean= 3.59) and usually discussed with others what they read to check their understanding (mean= 3.59); usually paraphrased (restate ideas in my own words) to better understand what they read (mean= 3.52) and usually asked themselves questions that they like to have answers from the text (mean= 3.52); and usually took notes while reading to help them understand what they read (mean= 3.41). They would sometimes read aloud to help them understand what they read when the text becomes more difficult (mean 3.33).

Table 5. *Summary of Extent of the Students' Reading Strategies*

Reading Strategies	*Mean*	*Description*
Problem- Solving	4.01	Usually
Global Strategies	3.77	Usually
Support Strategies	3.57	Usually
Overall Mean	3.77	Usually

Table 5 shows the summary of the student's reading strategies. The table says that the students usually used problem-solving reading strategies (mean = 4.01), followed by the global strategies (mean = 3.77), and the support strategies (mean = 3.57). The findings of De Leon and Tarray's (2014) study on the reading habits of high school students in the Philippines and Alolayan's (2014) discovery that most English speakers, both native and non-native, employed problem-solving reading techniques, further corroborated this conclusion. The global reading strategies and support reading strategies came next.

Active Learning Styles

Students who seem interested in their studies typically take an active learning stance. Active learning activities such as group projects or material experimentation are preferred by these kinds of learners. Table 6 conveys the active learning style of the senior high school students.

Table 6. *Students Active Learning Styles*

	Indicators	*Mean*	*Description*
1	I would rather first try things out.	4.11	Usually
2	I understand something better after trying it out.	4.05	Usually
3	When I am learning something new, it helps me to talk it.	4.00	Usually
4	When I start a homework problem, I am more likely to start working on the solution immediately.	4.00	Usually
5	I more easily remember something I have done.	3.60	Usually
	Section- mean	3.95	Usually

n=378

As shown in the above table, the respondents obtained a 3.95 section- mean which means that the senior high school students usually used active learning styles. This implied that the students preferred to be active in gaining information collaboratively and using real-life situations.

Specifically, the table shows that the students usually preferred to try things out first (mean=4.11); usually understood something better trying it out (mean= 4.05); when learning something new, usually it helped them to talk it (mean= 4.00); when started a homework problem, usually they were more likely to start working on the solution immediately (mean= 4.00); and usually, they could easily remember something that they had done (mean= 3.60).

Reflective Learning Styles

Reflective learning styles are another name for reflective learning approaches. It shows that pupils consider it before applying it to real-world situations. Table 7 displays the reflective learning styles of the senior high school students.

Table 7. *Students' Reflective Learning Styles*

	Indicators	*Mean*	*Description*
1	The idea of doing homework in groups, with one grade for the entire group does not appeal to me.	4.28	Usually
2	I have often gotten to know a lot of the students in the classes I have taken.	4.11	Usually

3	In a study group working on difficult material, I am more likely to sit back and listen.	4.06	Always
4	I prefer to study alone.	3.77	Usually
5	When I must work on a group project, I first want to brainstorm individually and come together as a group to compare ideas.	3.67	Usually
6	I am more likely to be considered reserved.	3.37	Usually
	Section- mean	3.88	Usually

n=378

As the table above conveys, the respondents obtained a 3.88 section- mean which means that the senior high school students usually used reflective learning styles. This implied that the students preferred to be independent and work alone.

Specifically, the table shows that for reflective students, the idea of doing homework in groups with one grade for the entire group usually did not appeal to them (mean = 4.28); in classes they had taken, they usually got to know many of the students (mean= 4.11); in a study group working on difficult material, usually they were more likely to sit back and listen (mean= 4.06); they usually prefer to study alone (mean= 3.77); when they have to work on a group project, usually they want to brainstorm individually and come together as a group to compare ideas (mean= 3.67); and usually more likely to be considered reserved (mean= 3.37).

Sensing Learning Styles

Sensing learners are practical, like connections to the outside world, and are patient with details and hands-on work. They are typically more cautious and pragmatic, like to gather information and address problems using tried-and-true methods. Table 8 illustrates the sensing learning styles of the senior high school students.

Table 8. *Students' Sensing Learning Styles*

	Indicators	*Mean*	*Description*
1	I prefer the idea of certainty.	4.05	Usually
2	In reading nonfiction, I prefer something that teaches me new facts or tells me how to do something.	3.79	Usually
3	I prefer courses that emphasize concrete material (facts, data).	3.56	Sometimes
4	I would rather be considered realistic.	3.44	Usually
5	If I were a teacher, I would rather teach a course that deals with facts and real-life situations.	3.35	Usually
	Section- mean	3.64	Usually

n=378

As observed in the table, the respondents obtained 3.64 section- mean which means that the senior high school students usually used sensing learning styles. This implied that the students preferred to be realistic, careful, and practical. The result was like the study of Teeran, Li & Schlesselman (2011) which found that most of the students in the U.S. School of Pharmacy were sensing learners.

Specifically, the table conveys that the students usually preferred the idea of certainty (mean=4.05); in reading nonfiction, they usually preferred something that taught them new facts or told them how to do something (mean= 3.79); usually, they preferred courses that emphasized concrete material like facts and data (mean= 3.56); usually they would rather be considered realistic (mean= 3.44); and if they were teachers, usually they would rather teach a course that deals with facts and real-life situations (mean= 3.35).

Intuitive Learning Styles

Those who learn intuitively find novelty enjoyable. When they read novels, they expect authors to convey their ideas in fresh ways. The intuitive learning techniques of senior high school students are displayed in Table 9.

Table 9. *Students' Intuitive Learning Styles*

	Indicators	*Mean*	*Description*
1	I find it easier to learn concepts.	4.29	Always
2	When I must perform a task, I prefer to come up with new ways of doing it.	4.15	Usually
3	I am more likely to be considered creative about how to do my work.	4.14	Usually
4	When I am doing long calculations, I find checking my work tiresome and have myself force to do it.	4.10	Usually
5	When I am reading for enjoyment, I like writers to say things in creative, interesting ways.	4.04	Usually
6	I consider it higher praise to call someone imaginative.	3.64	Usually
	Section- mean	4.06	Usually

n=378

As seen in the table, the respondents obtained a 4.06 section- mean which means that the senior high school students usually used intuitive learning styles. This implied that the students preferred to be innovative, and critical, and love new ideas. These types of learners love numbers.

Specifically, the table shows that the students usually found it easier to learn concepts (mean= 4.29); when they had to perform a task,

they usually preferred to come up with new ways of doing it. (mean= 4.15); usually, they were more likely to be considered creative about how to do their work (mean = 4.14); when they were doing long calculations, usually they found checking their work tiresome and had themselves forced to do it (mean = 4.10); when they were reading for enjoyment, they usually like writers to say things in creative, interesting ways (mean= 4.04); and they usually considered it higher praise to call someone imaginative (mean= 3.64).

Visual Learning Styles

Visual learners are better at remembering what they see. For these kinds of students, visual tools help them retain material more effectively. The senior high school students' visual learning preferences are illustrated in Table 10.

Table 10. *Students' Visual Learning Styles*

	Indicators	*Mean*	*Description*
1	When I get directions to a new place, I prefer a map.	4.08	Usually
2	I like teachers who put a lot of diagrams on the board.	3.81	Usually
3	When someone is showing me data, I prefer charts or graphs.	3.58	Usually
4	I prefer to get new information in pictures, diagrams, graphs, or maps.	3.47	Usually
5	I tend to carefully go through the graphics and charts in a book that has a lot of them.	3.38	Always
	Section- mean	3.67	High

n=378

As shown in the table, the respondents obtained a 3.67 section- mean which means that the senior high school students usually used visual learning styles. This implied that the students preferred to learn using visual aids not words. This was the same with the study of Panambur (2017); Alharbi, Almutairi, Alhelih & Alshehry (2016); and Tudy & Tudy (2014) which proved that most of the students manifested visual learning styles.

Specifically, the table shows that the students, when they needed directions to a new place, usually preferred a map (mean = 4.08); usually, they liked teachers who put a lot of diagrams on the board (mean = 3.81); when someone was showing them data, usually they preferred charts or graphs (mean= 3.58); usually they preferred to get new information in pictures, diagrams, graphs, or maps (mean= 3.47); and in a book with lots of pictures and charts, usually they liked to look over the pictures and charts carefully (mean= 3.38).

Verbal Learning Styles

Verbal learners benefit more from explanations that are given both orally and in writing. These learners are the opposite of visual learners in that they learn best through words rather than pictures. The senior high school students' spoken learning styles are portrayed in Table 11.

Table 11. *Students' Verbal Learning Styles*

	Indicators	*Mean*	*Description*
1	When I think about what I did yesterday, I am most likely to get words.	4.32	Always
2	When I meet people at a party, I am more likely to remember what they said about themselves.	4.18	Usually
3	I remember best what I hear.	4.17	Usually
4	I tend to picture places I have been with difficulty and without much detail.	4.13	Usually
5	When I see a diagram or sketch in class, I am most likely to remember what the instructor said about it.	4.07	Usually
6	For entertainment, I would rather read a book.	3.67	Usually
	Section- mean	4.09	Usually

n=378

As shown in the table, the respondents obtained a 4.09 section- mean which means that the senior high school students usually used verbal learning styles. This implied that the students preferred to learn better if they could picture it in their minds. This was opposite to the result of the study by Tee, et. al, (2015) that sensing learning style was the least manifested preference of the students.

Specifically, the table shows that when the students thought about what they did yesterday, usually, they were most likely to get words (mean = 4.32); when they met people at a party, usually, they were more likely to remember what they said about themselves (mean=4.18); usually, they remembered best what they hear (mean= 4.17); usually, they tend to picture places that they had been with difficulty and without much detail (mean= 4.13); when they saw a diagram or sketch in class, they usually most likely to remember what the instructor said about it (mean= 4.07); for entertainment, usually they would rather read a book (mean= 3.67).

Sequential Learning Styles

Sequential learning is the process of comprehending knowledge in logical steps and using these steps to solve problems. Sequential learners would prefer to focus as much as they can on a certain topic. The senior high school students' sequential learning strategies are shown in Table 12.

As observed in the table, the respondents obtained a 3.69 section- mean which means that the senior high school students usually used

sequential learning styles. This implied that the students preferred to learn in a step-by-step process.

Specifically, the table shows that the students, when they were learning a new subject, usually, they preferred to stay focused on that subject, learning as much about it as they could (mean = 4.11); usually, it was more important to them that an instructor lay out the material in clear sequential steps (mean= 3.84); when solving problems in a group, usually they would be more likely to think of the steps in the solution process (mean= 3.61); once they understood all the parts, usually they understood the whole thing (mean= 3.49); when they solved math problems, usually they worked their way to the solutions one step at a time (mean=4.41).

Table 12. *Students' Sequential Learning Styles*

	Indicators	*Mean*	*Description*
1	When I am learning a new subject, I prefer to stay focused on that subject, learning as much about it as I can.	4.11	Usually
2	It is more important to me that an instructor lay out the material in clear sequential steps.	3.84	Usually
3	When solving problems in a group, I would be more likely to think of the steps in the solution process.	3.61	Usually
4	Once I understand all the parts, I understand the whole thing.	3.49	Usually
5	When I solve math problems, I usually work my way to the solutions one step at a time.	3.41	Usually
	Section- mean	3.69	Usually

n=378

Global Learning Styles

Global learners may solve complex riddles, "get it" right once after reading seemingly unrelated material, or piece things together quickly after they have a general understanding of the subject, and they may find it challenging to explain how they arrived at their findings. The students' worldwide learning styles are mounted in Table 13.

Table 13. *Students' Global Learning Styles*

	Indicators	*Mean*	*Description*
1	When writing a paper, I am more likely to work on (think about or write) different parts of the paper and then order them.	4.13	Sometimes
2	When considering a body of information, I am more likely to try to understand the big picture before getting into the details.	4.12	Usually
3	I learn in fits and starts. I'll be totally confused and then suddenly it all "clicks."	3.86	Usually
4	Some teachers start their lectures with an outline of what they will cover. Such outlines are very helpful to me.	3.63	Sometimes
5	I can be vague about details, but generally speaking, I understand the details of a subject.	3.51	Usually
6	When I'm analyzing a story or a novel, I just know what the themes are when I finish reading, and then I must go back and find the incidents that demonstrate them.	3.42	Usually
	Section- mean	3.78	Usually

n=378

As displayed in the table, the respondents obtained a 3.78 section- mean which means that the senior high school students usually used global learning styles. This implied that the students preferred to be detailed in a specific task. They desired to work alone.

Specifically, the table shows that the students, when writing a paper, were usually more likely to work on (think about or write) different parts of the paper and then order them (mean= 4.13); when considering a body of information, usually they were more likely to try to understand the big picture before getting into the details (mean= 4.12); they learned in fits and starts. They would usually be totally confused and then suddenly it all "clicks." (mean= 3.86); usually the outlines made by teachers at the start of the lecture would help them (mean= 3.63); usually they tended to understand details of a subject but may be fuzzy about details (mean= 3.51); and when they were analyzing a story or a novel, they would usually know the themes when they finished reading and then they had to go back and find the incidents that demonstrated them (mean=3.42).

Table 14. *Summary of the range of learning styles among the students*

Learning Styles	*Mean*	*Description*
Verbal	4.09	Usually
Intuitive	4.06	Usually
Active	3.95	Usually
Reflective	3.88	Usually
Global	3.78	Usually
Sequential	3.69	Usually
Visual	3.67	Usually
Sensing	3.64	Usually
Overall Mean	3.80	Usually

n=378

Table 14 carries the summary of the extent of learning styles manifested by the students. The data indicates that children typically exhibit all learning styles, with a mean score of 3.80.

In terms of their mean, verbal learning styles had the highest mean (mean= 4.09) which means usually manifested by the students, followed by intuitive learning styles (mean= 4.06), active learning styles (mean= 3.95), reflective learning styles (mean= 3.88), global learning styles (mean= 3.78), sequential learning styles (mean= 3.69), visual learning styles (mean= 3.67) and the lowest mean was the sensing learning styles (mean= 3.64). That meant that most of the time, words were how students learned. They learned a little bit by hearing. The greatest way for them to learn was to hear it. The students who demonstrated detecting learning approaches the least were those who were realistic in their learning. The outcome matched that of Tee et al.'s study. Al (2015) found that while verbal learning style was the least evident in the study by Alharbi, Almutairi, Alhelih, and Alshehry (2016), sensing learning styles were the least evident in the pupils.

Reading Comprehension

Reading comprehension is the ability to understand a text by using our reading abilities to extract its hidden meaning in addition to its literal meaning (Al-Alwan, 2015). Three comprehension levels were included in the Philippine Informal Reading Inventory (Phil-IRI).

Table 15. *Extent of Students' Reading Comprehension Level*

Reading Comprehension Test Score	*Description*	*Frequency (f)*	*Percentage (%)*
24-30	Independent Level	123	32.54
17-23	Instructional Level	190	50.26
below-16	Frustration Level	65	17.20
Overall Mean = 21.31 (Instructional)		378	100

n=378

The senior high school students' reading comprehension is displayed in Table 15. The table explains that 190 or 50.26% of the students were instructional which scored from 17- 23 points. It was followed by the 32.54% or 123 senior high school students with independent reading comprehension which scored from 24- 30 points. And the last was the 17.20% or 65 senior high school students who fell under frustration reading comprehension which scored 16 points and below.

The data implied that most of the students were instructional in their reading comprehension. It means that the students could get instruction from the text. This was somewhat true according to a 2016 study by Bilbao, Donguila, and Vasay, which discovered that education majors at a Davao City-based Catholic university had reading comprehension levels ranging from basic to moderate.

Table 16. *Correlation of the Reading Comprehension Level on the Extent of Use of Reading Strategies*

Variables	*r*	*Interpretation*	*p-value*	*Decision*	*Interpretation*
Reading Comprehension Level Vs					
Global	0.003	Negligible Positive Relationship	0.954	Do not reject H0	Not Significant
Problem-Solving	0.015	Negligible Positive Relationship	0.767	Do not reject H0	Not Significant
Support	-0.025	Negligible Negative Relationship	0.634	Do not reject H0	Not Significant

α = 0.05 (Level of Significance) d.f. = 376

Table 16 conveys the correlation between reading comprehension level on the extent of use of reading strategies such as global, problem-solving, and support. It presents that the correlations drawn were a negligible positive relationship for global and problem solving with the Pearson r value of 0.003 and 0.015 respectively, and a negligible negative relationship of support with the Pearson r value of -0.025 on the reading comprehension level.

These correlations among variables were not significant since the p-values of 0.954, 0.767, and 0.634 were greater than the confidence interval of 0.05. It manifested that the extent of use of three reading strategies such as global, problem-solving, and support had nothing to do with the reading comprehension level of students. The result was like the result of the study of Notratinia and Shakeri (2013) and Alharbi (2015) which stated that there was no significant relationship between the perceived use of reading strategies of students and their reading comprehension. This result was opposite to the study of Al-Alwan (2010) and Al-Rubaye (2012) which stated that if the students used and taught different reading strategies, they would perform better in reading comprehension.

Table 17 shows the relationship between students' reading comprehension levels and the degree to which their learning styles are exhibited. It says that the correlations stated were a negligible positive relationship for reflective, intuitive, and verbal learning styles with the Pearson r value of 0.041 and 0.019 respectively for both intuitive and verbal learning styles and negligible negative relationship of active, sensing, visual, and sequential and global learning styles with the Pearson r value of -0.005, -0.078, -0.068 and -0.079 on the reading comprehension level.

These correlations among variables were not significant since the p-value of 0.921, 0.422, 0.129, 0.707, 0.129, 0.707, and 0.178 are greater than the confidence interval of 0.05. It was determined that there was no correlation between students' reading comprehension

ability and the degree to which they displayed their learning styles. The result was similar to the result of the study of Teng (2009), and William (2010), whose studies found that no learning style was a significant predictor of reading comprehension skills. It was also suggested in those studies that learning styles did not have a significant effect on the reading comprehension levels of the students.

Table 17. *Relationship between Reading Comprehension Level and Learning Style Manifestation Extent*

Variables	*r*	*Interpretation*	*P-Value*	*Decision*	*Interpretation*
Reading Comprehension Level Vs					
Active	-0.005	Negligible Negative Relationship	0.921	Do not reject H0	Not Significant
Reflective	0.041	Negligible Positive Relationship	0.422	Do not reject H0	Not Significant
Sensing	-0.078	Negligible Negative Relationship	0.129	Do not reject H0	Not Significant
Intuitive	0.019	Negligible Positive Relationship	0.707	Do not reject H0	Not Significant
Visual	-0.078	Negligible Negative Relationship	0.129	Do not reject H0	Not Significant
Verbal	0.019	Negligible Positive Relationship	0.707	Do not reject H0	Not Significant
Sequential	-0.068	Negligible Negative Relationship	0.178	Do not reject H0	Not Significant
Global	-0.079	Negligible Negative Relationship	0.126	Do not reject H0	Not Significant

α = 0.05 (Level of Significance) d.f. = 376

Discussion

The extent of use of reading strategies used by the students was usually problem-solving reading strategies with the highest mean (mean=4.01), followed by global reading strategies (mean =3.77), and the last was support strategies with the lowest mean (mean=3.57).

The degree to which the student's learning styles were revealed that, on average, 3.80 was the mean for all of the students' learning styles. In terms of their mean, verbal learning styles had the highest mean (mean= 4.09) or usually manifested by the students; followed by intuitive learning styles (mean= 4.06); active learning styles (mean= 3.95); reflective learning styles (mean= 3.88); global learning styles (mean= 3.78); sequential learning styles (mean= 3.69); visual learning styles (mean= 3.67) and with the lowest mean was the sensing learning styles (mean= 3.64).

The reading comprehension level of the senior high school students was instructional reading comprehension. Specifically, 190 or 50.26% of the students were instructional since they scored from 17- 23 points. It was followed by 32.54% or 123 senior high school students with independent reading comprehension scores from 24- 30 points. And the last was the 17.20% or 65 senior high school students fall under frustration reading comprehension with scores of 16 points and below.

The degree to which senior high school pupils employ various reading strategies and their reading comprehension level is correlated, the correlations drawn were a negligible positive relationship for global and problem-solving with the Pearson r value of 0.003 and 0.015, respectively, and negligible negative relationship of support with the Pearson r value of -0.025 on the reading comprehension level. These correlations among variables were not significant since the p-values of 0.954, 0.767, and 0.634 were greater than the confidence interval of 0.05. It manifested that the extent of use of three reading strategies such as global, problem-solving, and support has nothing to do with the reading comprehension level of students.

Regarding the relationship between students' reading comprehension ability and the degree to which their learning styles are exhibited, the correlations showed that there was a negligible positive relationship for reflective, intuitive, and verbal learning styles with the Pearson r value of 0.041 and 0.019 respectively for both intuitive and verbal learning styles and a negligible negative relationship of active, sensing, visual, and sequential and global learning styles with the Pearson r value of -0.005, -0.078, -0.068 and -0.079 on the reading comprehension level. These correlations among variables were not significant since the p-value of 0.921, 0.422, 0.129, 0.707, 0.129, 0.707, and 0.178 were greater than the confidence interval of 0.05. It was determined that there was no correlation between students' reading comprehension ability and the degree to which they displayed their learning styles.

Conclusions

The extent of use of the reading strategies by the senior high students is usually employed. Most of the students usually used problem-solving reading strategies followed by global and support strategies. In the extent of learning styles, verbal learning styles were usually manifested followed by intuitive, active, reflective, global, sequential, visual, and the last is sensing learning styles. Most of the students are classified as instructional in terms of reading comprehension level. The extent of reading strategies and learning styles manifested by the students do not have a significant relationship to their reading comprehension levels.

Based on the findings and conclusions of this study, the following are recommended: (1) The school should provide reference materials such as dictionaries (printed or online) to support the teaching-learning process when they have reading activities. (2) Teachers should provide collaborative activities that could support the understanding of the students of the reading materials. (3) Teachers must integrate differentiated instruction to address the different learning styles of the students. (4) Teachers might use interactive activities such as

hands-on projects or role-playing to maximize the sensing learning styles. (5) For the improvement of the study, other factors must be investigated that can affect the reading comprehension of the students.

References

Abdelmalek, M. N. (2015). Research on reading strategies: Results from high and low readers, native and non-native English speakers, and male and female students (Order No. 1597138) [Master's thesis, ProQuest Dissertations Publishing]. ProQuest. http://search.proquest.com/docview/1713666349?accountid=141440

Al-Alwan, A. (2015). The effect of using metacognition reading strategies on the reading comprehension of Arabic texts. International Journal of Applied Educational Studies, 13 (1), 1-18.

Alharbi, H., Almutairi, A., Alhelih, E., & Alshehry, A. (2016). The learning preference among nursing students in King Saud University in Saudi Arabia: A cross-sectional survey. Nursing Research and Practice, 2017, 1-7. https://doi.org/10.1155/2017/3090387

Alolayan, F. S. (2006). The use of reading strategies in Arabic by native and non-native speakers [Master's thesis]. ProQuest Dissertations Publishing.

Al-Rubaye, N. (2012). Reported reading strategies of Iraqi graduate students studying in US universities [Master's thesis]. ProQuest Dissertations Publishing.

Barrot, J. (2016). ESL learners' use of reading strategies across different text types. The Asia-Pacific Education Researcher, 25(5-6), 883-892. https://doi.org/10.1007/s40299-016-0310-7

Cekiso, M., & Madikiza, N. (2014). Grade 9 English second language learners use reading strategies in a selected school. Reading & Writing, 5(1), 1-7. https://doi.org/10.4102/rw.v5i1.35

De Leon, J. A. V., & Tarrayo, V. N. (2014). "Cyber" reading in L2: Online reading strategies of students in a Philippine public high school. i-manager's Journal on English Language Teaching, 4(2), 8-17.

Ejercito, F. J. (2010). The teaching art and skill of LSU-IS teachers and students' academic performance. Editor's Notes, 15(1), 1-27.

Espejo, C. T., Gutierrez, M. R., & Macahilig, H. B. (2016). The comprehension level of selected Grade Four pupils vis-à-vis text and test types in Filipino. The Normal Lights, 10(1), 26-55.

Gurses, M. O., & Bouvet, E. (2016). Investigating reading comprehension and learning styles about reading strategies in L2. Reading in a Foreign Language, 28(2), 20-42.

Nguyen, H. (2014). Second language reading strategies: Evidence from Vietnamese learners of English [Master's thesis]. ProQuest Dissertations Publishing.

Nostratinia, M., & Shakeri, H. (2013). Does the reading strategy used correlate with the reading comprehension of EFL learners? International Journal of Arts & Sciences, 6(3), 299-311.

Salaverria, B., & Adonis, M. (2020, February 18). Pupils' problem is not literacy but reading comprehension – DepEd. Inquirer.Net. https://newsinfo.inquirer.net/1230013/pupils-problem-not-literacy-but-reading-comprehension-deped#ixzz8liUTnvux

San Juan, R. (2019, December 4). DepEd welcomes PISA results and recognizes 'gaps' in education quality. Philstar. https://www.philstar.com/headlines/2019/12/04/1974229/deped-welcomes-pisa-results-recognizes-gaps-education-quality

Teng, Y. (2009). The relationship of reading methods and learning styles to Taiwanese 12th grade male students' reading comprehension in English. International Journal of Education Research, 13(2), 98-100.

Williams, J. (2010). Reading comprehension, learning styles, and seventh-grade students [Dissertation's thesis]. ProQuest Dissertations Publishing.Abdelmalek, M. N. (2015). Research on Reading Strategies: Results from High and Low Readers, Native and Non-native English Speakers, and Male and Female Students. (R. f. http://search.proquest.com/docview/1713666349?accountid=141440, Ed.) (Order No. 1597138).

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