

Bilinguals, Monolinguals and their Choices of Metacognitive Strategies in Reading, Writing, Listening and Speaking

Julia Falla-Wood

School of Education, Burman University,
6730 University Drive, Lacombe, Alberta, Canada

Keciya Varghese

School of Education, Burman University,
6730 University Drive, Lacombe, Alberta, Canada

ABSTRACT

The purpose of this explorative study is to compare the choices of metacognitive strategies made by bilinguals and monolinguals in reading, writing, listening, and speaking. Kovelman, Baker & Petitto (2008) compare bilingual and monolingual brains and observe that there is a differential activation in the syntactic process between bilinguals and monolinguals. Could there be a difference between monolinguals and bilinguals in the choice of metacognitive strategies too? The data, collected in three private institutions, one in Quebec, and two in Alberta, consists of 144 students, 72 monolinguals, and 72 bilinguals. The instrument of research is a questionnaire. The results of this study show that 63.8% of all participants are unaware of the concept of metacognition. This lack of awareness is found not only in high school students but also in senior university students. In the category of bilinguals, the students acknowledge being bilinguals, but the percentage of those who feel comfortable in both languages is only 47.2%. Regarding the choices of metacognitive strategies, there are more similarities than differences between bilinguals and monolinguals. The implications of these results could lead educators to be intentional in bringing awareness of the concept of metacognition in a more efficient manner. Further research is needed to determine if the choice of specific metacognitive strategies would improve the four language skills.

Keywords: Metacognition, foreign/second language, language skills, bilingualism, metacognitive awareness

INTRODUCTION

The concept of metacognition dates back to the time of Aristotle, who postulates that there are two processes in thinking. The first one is connected to prior knowledge and information acquired by the mind, and the second one relates to a combination of both prior knowledge and information to conceive new or unexplored ideas (Shiffman, 2011). John Locke (1924) states that human beings have ideas of their mental operations, and he suggests the term *reflection* to define those actions.

Flavell (1976) uses for the first time the term metacognition and refers to it as "one's knowledge concerning one's cognitive processes and products, or anything related to them" (p. 232). Flavell (1979) redefines the concept as "knowledge and cognition about cognitive phenomena" (p. 906).

The results of studies in the educational system show that it enhances learning; students who are instructed on metacognitive strategies have a better chance to succeed in the fast-changing world (Flavell, 1987; Georgiades et al., 2004, Gunstone and Northfield, 1994; Paris and Winograd, 1990; Radwan, 2011; Rivera-Mills & Plonsky, 2007; Siegmund, 2017). In a multilingual world, global communication is part of our daily life, and teaching metacognitive strategies to improve learners' proficiency, fluency, and confidence is crucial, mainly if instruction happens in a classroom setting (Cohen, 2011; Forbes and Fisher, 2015; Graham, 2007). The results of numerous studies show that the instruction of metacognitive strategies promotes self-regulation, self-direction, and helps students to be successful in their learning (Chamot, 2005; Goh, 2008; Plonsky, 2011; Rivera-Mills & Plonsky, 2007; Taylor et al., 2006; Vandergrift, 2002, 2003; Wenden, 1998).

The question of processing languages by monolinguals and bilinguals has been studied from different perspectives. From a linguistic perspective, Chomsky (1965, 1976, 1980b) postulates an innate device for language acquisition. He did not apply his theory to the second language, but researchers on second language acquisition have used it to explain different processes of second language acquisition (Athanasopoulos, 2009; Liceras, 2007; Slabakova, 2006; White, 2003). From a psycholinguistic perspective, researchers claim that general cognitive mechanisms are responsible for processing languages (Bates & MacWhinney, 1989; Faerch & Kasper, 1986; Hulk & Müller, 2000; Pavlenko, 2011; Sharwood-Smith & Kellerman, 1986; Ullman, 2001). From a neurolinguistics perspective, Paradis (1987) does a meta-analysis on aphasic bilinguals from Scoresby-Jackson (1867) to Whitaker (1971) and proposes several hypotheses for the bilingual brain representations: one neural system, two neural systems, two neural systems with a sharing section, and two independent subsystems in one neural system. Kovelman, Baker & Petitto (2008) compare bilingual and monolingual brains on syntactic processing using Magnetic Resonance Imaging and notice that there is a differential activation between bilinguals and monolinguals. These results could lead to thinking of a dual-language representation: an old question that is debated in the neurolinguistics field. It is reasonable to think that if there is a difference in the syntactic processing activation between bilinguals and monolinguals, there could be other differences between bilinguals and monolinguals. Could the choice of metacognitive strategies be the same or different between bilinguals and monolinguals? This explorative study compares the choices of metacognitive strategies between bilinguals and monolinguals in reading, writing, listening, and speaking.

Other factors like personality traits and learning styles can intervene in the choice of metacognitive strategies, as suggested by Chen (2009) and Liu (2008), or motivation, as reported by Vandergrift (2005). Still, these factors, even though important, are not included in the frame of this research. The first step is to establish similarities and differences in the choice of metacognitive strategies. Undoubtedly, personality traits, learning styles, and motivation can be the focus of future research.

LITERATURE REVIEW

Rene Descartes, the 17th-century philosopher, summarizes metacognition in his words, "Cogito, ergo sum" (I think; therefore, I am). Flavell (1979), father of the *metacognition* term, states that the

role of metacognition in language skills is crucial. Brown (1987) describes metacognition as having two dimensions: knowledge about cognition and regulation of cognition. The first dimension is related to the reflective aspect of metacognition, which is what individuals know about their cognitive processes, also called, metacognitive awareness by Schraw et al. (2006); the second dimension is related to the regulation of learning, which is what individuals do to control their learning, also known as metacognitive strategies (Schraw et al., 2006). The capability to have a sense of one's cognitive performance is an essential characteristic of metacognition (Grimaldi, Lau, & Basso, 2015). On a theoretical level, there are two order processes (Nelson & Narens, 1994). The first process is related to uncertainty in the judgment, and the second process is associated with evaluation and fidelity of the judgment (Meyniel, Sigman, & Mainen, 2015). Metacognitive performance can be measured by accuracy, which is the degree of confidence in the judgment; by bias, which is the tendency to have overconfidence regardless of the available information; and by efficiency, which is related to the accuracy of the first-order judgment (Maniscalco & Lau, 2012, 2014).

The interest in metacognition has been extended into different fields of research, including education, psychology, and cognitive neuroscience (Schneider, 2008; Shoghi & Ghoonsly, 2015). Brown et al. (1983) differentiate between metacognitive knowledge and metacognitive strategies. Metacognitive knowledge is related to information learners acquire about their learning, and metacognitive strategies are skills through which learners plan, monitor, and evaluate their learning process. In cognitive psychology, these strategies are referred to as the concept of self-regulation (Schraw et al., 2006). In the field of second languages, Rubin (1987) claims that language learning strategies, cognitive and metacognitive, "contribute to the development of the language system [...] and affect learning directly" (p. 23). O'Malley & Chamot (1990) classify language learning strategies in three categories: cognitive, metacognitive, and affective/social; metacognitive strategies include planning for learning, monitoring one's comprehension and production, and evaluating how well the objective is achieved. Chamot (2004) defines learning strategies as conscious thoughts or actions taken to accomplish a learning goal. The identification and classification of different strategies (cognitive, metacognitive, and affective/social) have been obtained through think-aloud protocol analysis (O'Malley & Chamot, 1990). Pintrich (2002) points out that the role of metacognitive strategies is even more significant than other strategies as it helps the learners to regulate their learning and perform different tasks in multiple contexts efficiently. Malcolm (2009) states that fourth-year university students use more metacognitive strategies in reading than first-year university students. Khalil's findings (2005) demonstrate that university students learning English as a foreign language apply significantly more metacognitive strategies than high school students do.

However, the results of Rahimi & Katal's (2012) research on metacognitive listening strategies awareness yield opposite results. The results of different studies on different L2 proficiency levels indicate that students with higher proficiency levels use more metacognitive strategies than students with medium or low proficiency levels use (Phakiti, 2003; Lai, 2009; Liu, 2010; Radwan, 2011). However, Hong-Nam and Leavell (2006) claim that intermediate students use more metacognitive strategies because they are more aware of their learning progress than advanced students. The metacognitive strategies of the latter have become automatic and, consequently, are less conscious of using them. The results of studies undertaken by Oxford (1990), Schoonen et al.

(2011); Van Gelderen et al. (2007), and Yau (2009) indicate that the metacognitive strategies in L2 are closely correlated to metacognitive strategies used in L1 (mother tongue).

Metacognition instruction seems to enhance language learning (Lai, 2009; Liu, 2010; Malcolm, 2009; Phakiti, 2003; Pintrich, 2002; Radwan, 2011). The study, undertaken by Mastrothanasis et al. (2018) with 67 students of different mother tongues, learning Greek as a second language, shows that students who receive metacognitive-strategy instruction improve their ability to write at the word level (vocabulary) and text level (organization, content, syntax, and grammar). The researchers mentioned above suggest that a checklist of strategies can help students to self-evaluate their own learning and their metacognitive processes. Forbes & Fisher (2015) claim that, in general, learners can perform well in reading, writing, and listening, but not as well in speaking tasks. The researchers state that teaching metacognitive strategies in speaking tasks improves confidence and proficiency in speaking.

The relevance of metacognition, in monolinguals and bilinguals, is highly significant in becoming self-regulated learners as they control their learning (Seigesmund, 2017). The results of the study undertaken by (TafarajiYeganeh, 2013) regarding listening strategies show bilingual Iranian university students using linguistic metacognitive strategies more often than monolingual students do. Abu-Rabia (2018) claims that bilinguals use metacognitive reading strategies more often than monolinguals and that the level of awareness of the learning process is higher in bilinguals than monolinguals. The bilingual advantage in executive function has been related to different cross-cultural bilingual experiences (Bialystok & Viswanathan, 2009; Bialystok et al., 2004). Both languages of bilinguals are always active, even in unilingual settings (Dijkstra, Timmermans, & Schriefers, 2000; Dijkstra & Van Heuven, 1998, 2002; Van Hell & Dijkstra, 2002).

The results of the study on metacognitive abilities in bilinguals undertaken by Folke et al. (2016) show that there is a bilingual disadvantage in metacognitive efficiency. Bilinguals are faster in their response time than monolinguals, but they are not superior to monolinguals in the first-order judgment performance. This difference in metacognitive performance is related to the efficiency in the accuracy of the first-order judgment that could be associated with a difference in operating at higher-order decision-making (Cohen, McClure, & Yu, 2007; Kolling, Behrens, Mars, & Rushworth, 2012). Metacognitive knowledge in L1 could influence metacognition in L2 (Shoonen et al., 2011; Yau, 2009). All research undertaken in the field of metacognition continues to contribute to the understanding of its significant role in L1 and L2.

RESEARCH OBJECTIVE

This exploratory research seeks to compare the choice of metacognitive strategies made by bilinguals and monolinguals in the four language skills, i.e., reading, writing, listening, and speaking.

Research Question

How similar or different is the choice of metacognitive strategies made by bilinguals and monolinguals in reading, writing, listening, and speaking?

METHODS

This research is an exploratory study that compares the choice of metacognitive strategies in reading, writing, listening, and speaking made by bilinguals and monolinguals. The sample by quota

(Van der Maren, 1996) available to the researcher consists of 144 students, 72 monolinguals (36 high school students and 36 senior university students), and 72 bilinguals (36 high school and 36 senior university students). Sample data of high school students are gathered from a private English School in Quebec and two private English Schools in Alberta. The university students' data are obtained from a private university in Alberta.

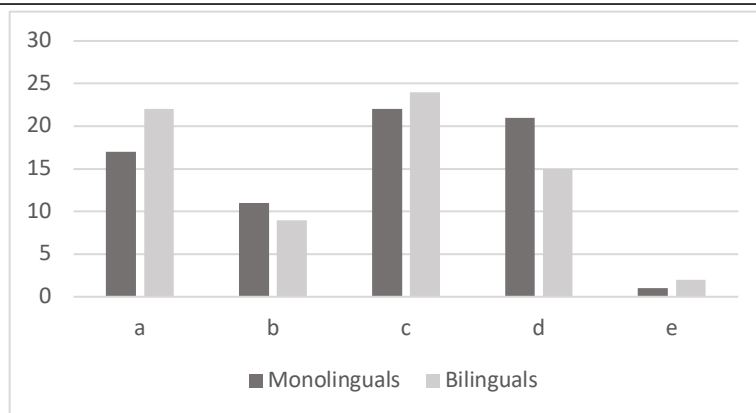
The instrument of research consists of a questionnaire. The questionnaire proposes four strategies for each question, four questions for each language skill, i.e., reading, writing, and listening, except for speaking, which has only three options. The options proposed in the questionnaire are the result of answers given to the researcher by random fluent bilingual and monolingual people (five males and five females) to the following question: "What do you do in your mind when you are going to read, write, listen and speak?" It is important to mention that those people, all professionals, did not participate in the study. It is also key to indicate that there is no qualitative implication in any of the options presented as metacognitive strategies. Students were asked to circle the best answer that applied to them from the proposed four options in each question. An option called the *other* was also included. This option provided the students with space to write down any additional information if needed. Students had 15 minutes to complete the questionnaire. All high school and senior university students agreed to be part of this study voluntarily and signed a consent form. Most of the questionnaires were completed in a classroom setting. A few questionnaires were completed outside class time in a calm space due to absences regarding unforeseen circumstances. The questionnaires were classified into two categories: high school and senior university monolingual students and high school and senior university bilingual students. The information was compiled using tables and charts to sort and identify differences and similarities among the two groups of participants and in the four different language skills.

RESULTS

The results regarding the awareness of metacognition show that 63.8% of all participants do not know the concept of metacognition. The percentage of high school students, who are unaware of the concept of metacognition, is 87.5%, and senior university students, is 40.3%. There is no significant variation in metacognitive awareness between monolinguals (61%) and bilinguals (67%). The question: "Do you consider yourself bilingual?" is explicitly addressed to bilinguals; all bilingual participants declared to be bilingual. However, 30.6% feel more comfortable in their mother tongue, 22.2%, in L2, and 47.2%, in both languages. All participants study in their second language (L2). The results regarding the choice of metacognitive strategies, in reading, writing, listening, and speaking, are presented by language skills. In this study, only the highest percentages are taken into consideration for comparison, as they can more clearly reveal the differences and similarities among all participants.

Reading

The possible options for what the students do before reading a text are: a) activating prior knowledge, b) looking for the title, c) reading the title, and all the subtitles of the text, d) looking for a silent place to read, e) other. The metacognitive strategies that obtain the highest percentages before reading a text are 1. (c) reading the title and all the subtitles, and 2. (a) activating prior knowledge.

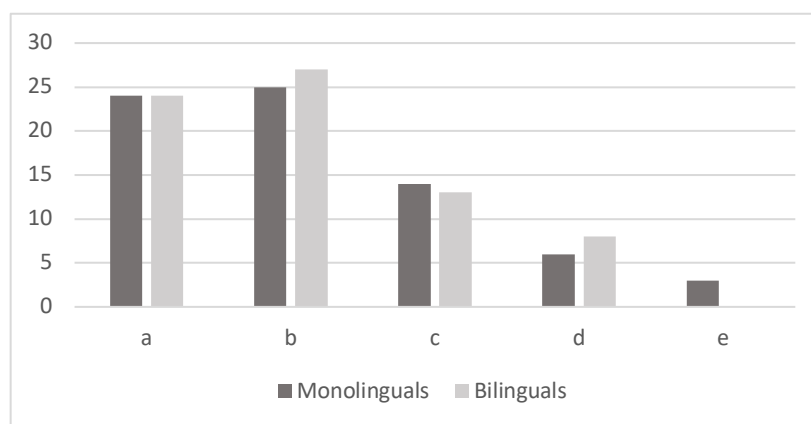


a = 27.08%; b = 13.88%; c = 31.94%; d = 25%; e = 2.08%

For reading the title and all subtitles, monolinguals score 30.5%, while bilinguals score 33.3%. The difference between bilinguals and monolinguals is two counts. For activating prior knowledge, monolingual students score 23.6%, while bilinguals score 30.5%. The difference between bilinguals and monolinguals is five counts. Burns et al. (2011) highlight the importance of background knowledge and vocabulary for effective reading comprehension.

For recalling information, the options presented are: a) re-reading or reviewing the text, b) taking notes and going over the notes, c) keeping it in mind and repeating to themselves, d) connecting the text to themselves, and e) other. There are two metacognitive strategies most commonly chosen: 1. (a) re-reading or reviewing the text, and 2. (b) taking notes and going over their notes.

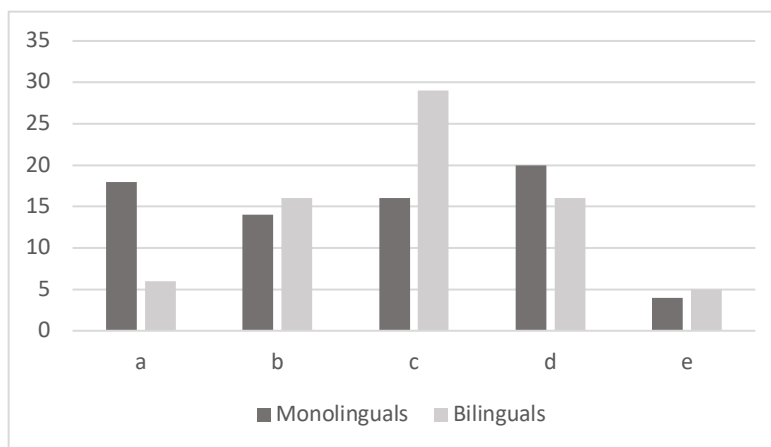
Monolinguals and bilinguals score 33.3% on re-reading or reviewing a text. For recalling information by taking notes and going over their notes, monolinguals score 34.7%, while bilinguals score 37.5%. The difference is two counts.



a = 33.33%; b = 36.11%; c = 18.75%; d = 9.72%; e = 2.08%

For figuring out the meaning of a text, the options proposed are: a) connecting their own experiences to what they read, b) paying attention to the first few sentences of the paragraph, c) making a picture in their head, d) paying attention to the things that are mentioned multiple times, and e) other. There are two metacognitive strategies most commonly chosen: 1. (c) making a picture in their head, and 2. (d) paying attention to things that are mentioned multiple times.

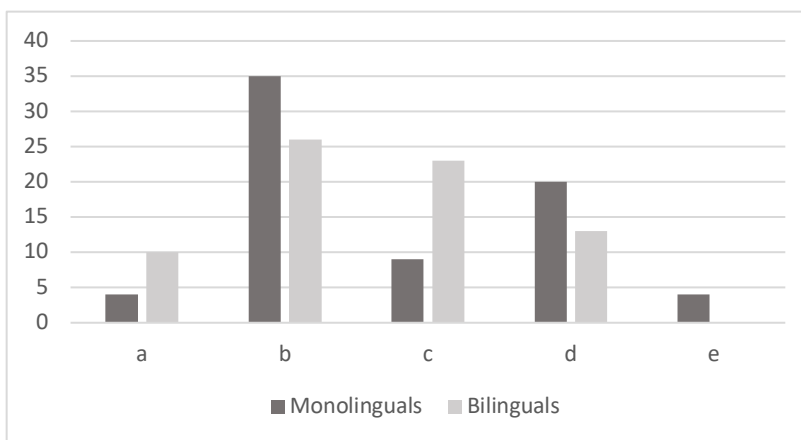
For making a picture in their head, monolinguals score 22.2%, while bilinguals score 40.2%. The difference is 13 counts between bilinguals and monolinguals. For paying attention to things that are mentioned multiple times, monolinguals score 27.7%, while bilinguals score 22.2%. The difference is four counts.



a = 16.66%; b = 20.83%; c = 31.25; d = 25%; e = 6.25%

The options for how skimming the text helps students in understanding it are: a) figuring out if the information is current and accurate, b) deciding if the text is worthy of reading in full, c) having a global understanding, d) saving time, and e) other. There are three metacognitive strategies most commonly chosen by the participants when they have a text before them: 1. (b) skimming a text to decide if it is worthy of reading the full text, and 2. (d) Skimming a text helps to save time, and 3. (c) skimming a text to have a global understanding.

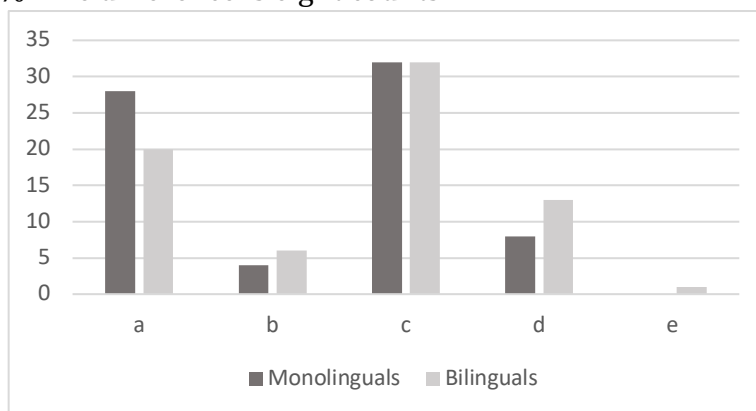
The strategy of skimming a text to decide if it is worthy of reading the full text, monolinguals score 48.6%, while bilinguals score 34.7%. The difference is nine counts. Skimming a text for saving time, monolinguals score 27.7%, while bilinguals score 18%. The difference is nine counts. For skimming a text to have a global understanding, monolinguals score 12.5%, while bilinguals score 31.9%. The difference is 14 counts. Asmawati (2015) highlights the effectiveness of skimming in having better reading comprehension.



a = 9.72%; b = 42.36%; c = 22.22%; d = 22.91%; e = 2.77%

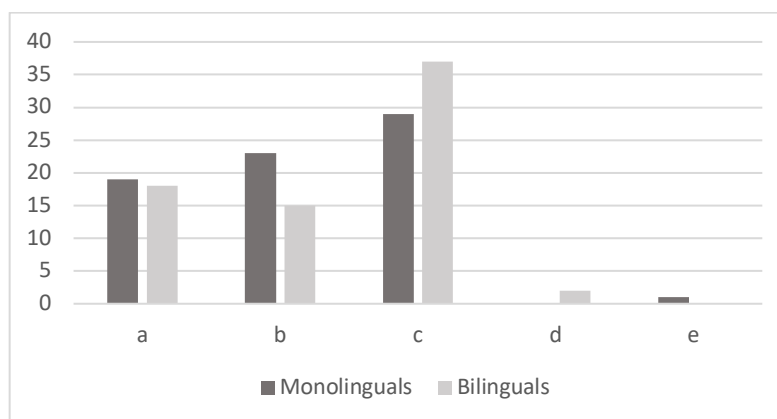
Writing

For writing effectively, the options proposed are: a) thinking about the purpose of what they are going to write, b) thinking to whom they are going to write in terms of age or educational level, c) developing their ideas to bring clarity to what they write, d) using their reading experiences to enhance their writing, e) other. The choices of metacognitive strategies that obtain the highest percentages for writing are 1. (c) developing ideas to bring clarity to what they write, and 2 (a) thinking about the purpose of what they are going to write. For developing their ideas to bring clarity to what they write, monolinguals and bilinguals score the same percentage, 44.4%. For thinking about the purpose of what they are going to write, monolinguals score 38.8%, while bilinguals score 27.7%. The difference is eight counts.



a = 33.33%; b = 6.94%; c = 44.44%; d = 14.5%; e = 0.69%

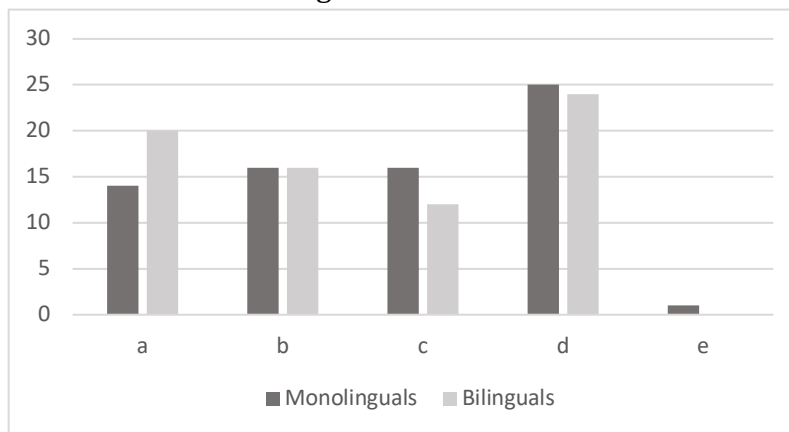
For expressing their ideas with clarity, the possible options are: a) imagining that they are reading what they are writing, b) using prior knowledge and experiences, c) looking for good vocabulary that will express their ideas well, d) asking themselves if they have any bias regarding the topic, and e) other. The choices of metacognitive strategies that obtain the highest percentages for expressing ideas with clarity are 1. (c) looking for good vocabulary that expresses their ideas well, 2. (a) Imagining that they are reading what they are writing, and 3. (b) using background knowledge and experiences. For looking for vocabulary that will express their ideas well, monolinguals score 40.2%, while bilinguals score 51.3%. The difference is eight counts. For imagining that they are reading what they are writing, monolinguals score 26.3% while bilinguals score 25%. For using background knowledge, monolinguals score 31.9%, while bilinguals score 20.8%. The difference is eight counts.



a = 25.69%; b = 26.38%; c = 45.83%; d = 1.38%; e = 0.69%

The options for the strategy used before writing their ideas are: a) reading more to enhance their work, b) using creative and interesting writing styles to convey their message, c) trying to keep readers focused on the material until the end, d) trying to cover all points of view, and e) other. The choices of metacognitive strategies that obtain the highest percentage for before writing their ideas are: 1. (d) covering all points of view before writing their ideas, and 2. (a) reading more to enhance my work.

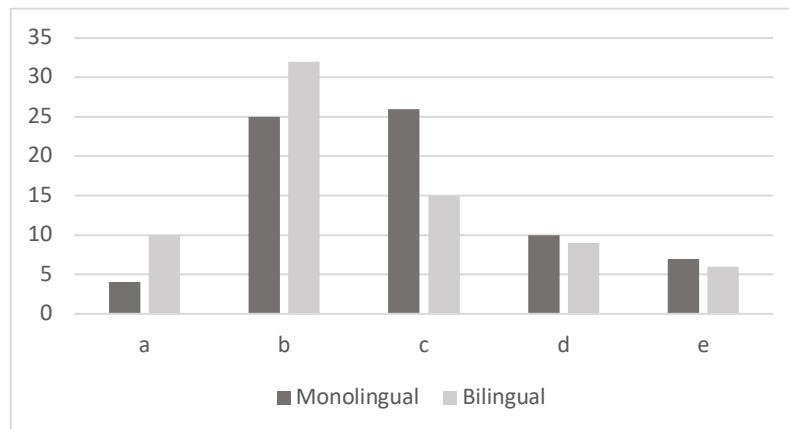
For covering all points of view before writing their ideas, monolinguals score 34.7%, while bilinguals score 33.3%. For reading more to enhance their work, monolinguals score 19.4%, while bilinguals score 27.7%. The difference is eight counts.



a = 23.61%; b = 22.22%; c = 19.44%; d = 34.02%; e = 0.69%

The options proposed for what they do, when they are stuck while writing are: a) asking themselves about what is stopping them from writing, b) reflecting on ideas that have already been written on the same topic, c) cross-checking their ideas with other documents, d) using previous experiences to tailor a new writing idea, and e) other. The highest percentages obtained for what students do when they are stuck while writing, are: 1. (b) reflecting on ideas that have already been written on the same topic, and 2. (c) Cross-checking their ideas with other documents.

For reflecting on ideas that have already been written on the same topic, monolinguals score 34.7%, while bilinguals score 44.4%. The difference is nine counts. For cross-checking, monolinguals score 36.1%, while bilinguals score 20.8%. The difference is 11 counts.

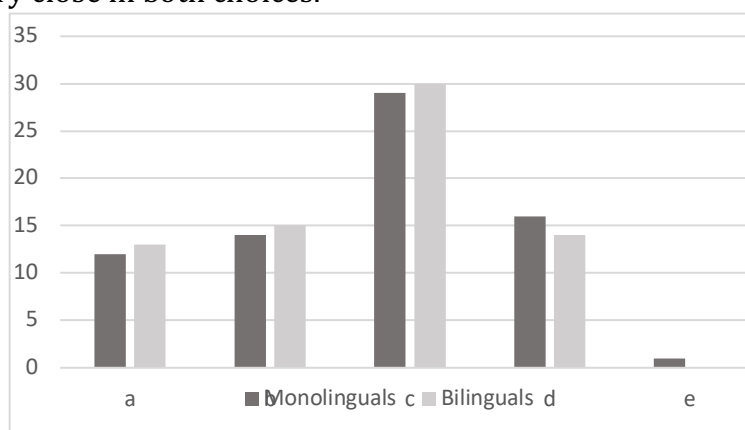


a = 9.72%; b = 39.58%; c = 28.47%; d = 13.19%; e = 9.02%

Listening

The options presented for what the students do to listen to someone in the most effective manner are: a) asking themselves what the overall message of the speaker is, b) asking themselves how the message connects with what they already know, c) trying to understand the intent of the speaker, d) reacting to the information to show that they are listening, and e) other. The three choices of strategies that obtain the highest percentages regarding listening to someone in the most effective manner are 1. (c) trying to understand the intent of the speaker, 2. (b) asking themselves how to connect what the person is saying to what they already know, and 3. (d) reacting to the information to show that they are listening.

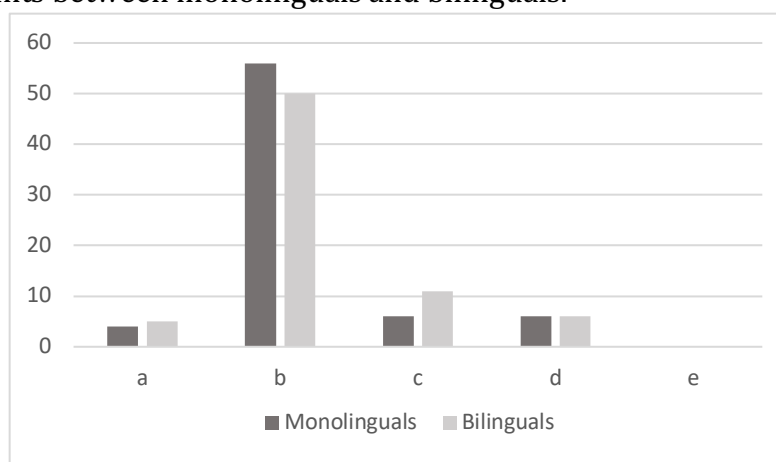
For trying to understand the intent of the speaker, monolinguals score 40.2%, while bilinguals score 41.6%. For asking themselves how to connect what the person is saying to what they already know, monolinguals score 19.4%, while bilinguals score 20.8%. The percentages between monolinguals and bilinguals are very close in both choices.



a = 17.36%; b = 20.13%; c = 40.97%; d = 20.83%; e = 0.69%

The possible options for how they prepare themselves to listen are: a) listening in a learning mode, b) listening to understand, c) listening to respond, d) listening for enjoyment, and e) other. The choice of the strategy that scores the highest percentage is (b) listening to understand.

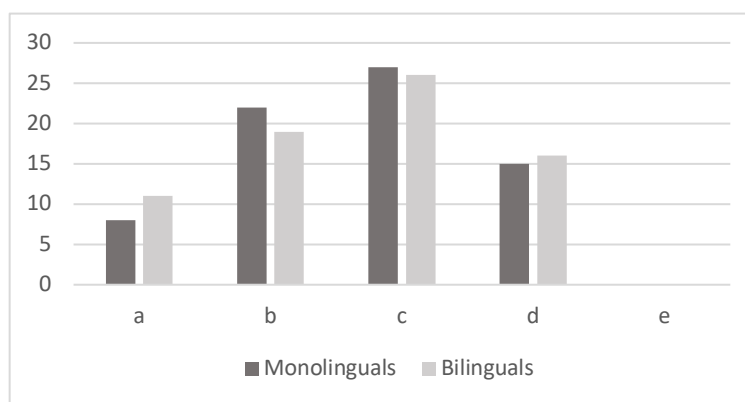
For listening to understand, monolinguals score 72.2%, while bilinguals score 69.4%. There is a difference of six counts between monolinguals and bilinguals.



a = 6.25%; b = 73.61%; c = 11.80%; d = 8.33%

The options presented for reacting to information when they listen are: a) asking themselves what the message is about, b) connecting the information with what they already know, c) assessing the ideas and information provided, d) asking themselves if the information has a meaning to them, and e) other. The choices of metacognitive strategies that obtain the highest percentages for reacting to information when they listen are 1. (c) assessing the ideas and information provided, and 2. (b) connecting the information with what they already know.

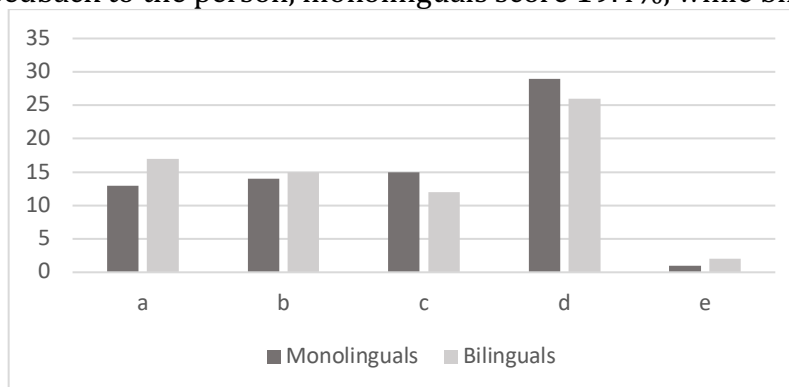
Monolinguals score 30.5%, while bilinguals score 26.3% on connecting the information with what they already know. The difference is three counts. For assessing the ideas and information provided, monolinguals score 37.5%, while bilinguals score 36.1%. The percentages between monolinguals and bilinguals are close in both choices.



a = 13.19%; b = 28.47%; c = 36.80%; d = 21.52%; e = 0

The options presented for how they know that they are really listening are a) looking at the eyes of the person, b) giving feedback to the person, c) using verbal and non-verbal messages, d) being fully concentrated on what the person is saying, and e) other. The results for the choices of metacognitive strategies related to how they know that they are really listening are 1. (d) being fully concentrated on what the person is saying, 2. (a) looking at the eyes of the person, and 3. (b) giving feedback to the person, 3.

For being fully concentrated on what the person is saying, monolinguals score 40.2%, while bilinguals score 36.1%. The difference is three counts. For looking at the eyes of the person, monolinguals score 18%, while bilinguals score 23.6%. The difference is four counts. For the strategy of giving feedback to the person, monolinguals score 19.4%, while bilinguals score 20.8%.

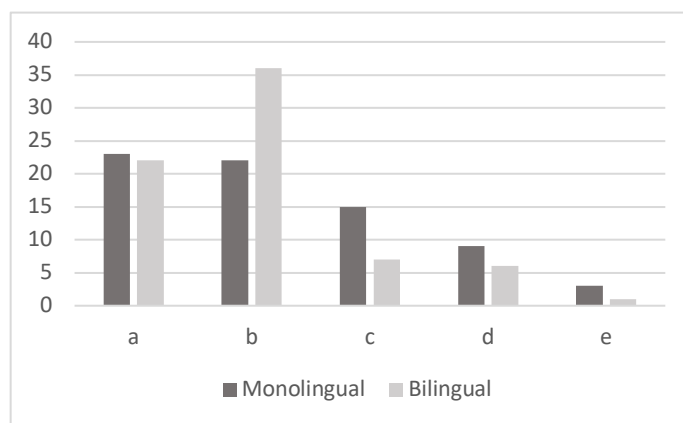


a = 20.83%; b = 20.13%; c = 18.75%; d = 38.19%; e = 2.08%

Speaking

The options proposed for how they prepare themselves for speaking are: a) thinking of the audience, b) thinking of the tone and vocabulary, c) thinking of using a good pace, d) checking the body language of their audience, and e) other. The choices of metacognitive strategies that obtain the highest percentages for preparing themselves to speak are 1. (b) Thinking of their tone and vocabulary, and 2. (a) Thinking of the audience.

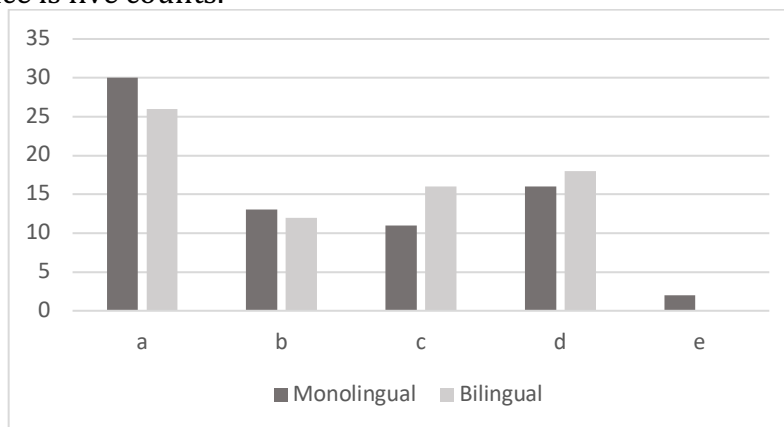
For thinking of their tone and vocabulary, monolinguals score 30.5%, while bilinguals score 50%. The difference is 14 counts. For thinking of the audience, monolinguals score 31.9%, while bilinguals score 30.5%.



a = 31.25%; b = 32.63%; c = 15.27%; d = 10.41%; e = 2.77%

The options proposed for getting the attention of their audience are: a) showing confidence, b) looking at their eyes, c) moving around, d) beginning with a thought-provoking question, and e) other. The results for the choices of metacognitive strategies related to how the students get the attention of their audience are 1. (a) showing confidence, 2. (d) beginning with an interesting question, and 3. (c) moving around.

For showing confidence, monolinguals score 41.6%, while bilinguals score 36.1%. The difference is four counts. For beginning with a thought-provoking question, monolinguals score 22.2%, while bilinguals score 23.6%. For moving around, monolinguals score 15.2%, while bilinguals score 22.2%. The difference is five counts.



a = 38.88%; b = 17.36%; c = 18.75%; d = 23.61%; e = 1.38%

The options proposed for what is in the mind of the students while speaking are: a) asking themselves the purpose of speaking, b) asking themselves if they have chosen the right words, c) asking themselves if they are using their voice appropriately, d) asking themselves if their audience is getting their message, and e) other. The choices of strategies that obtain the highest percentages on what is in the students' minds while speaking are 1. (d) Asking themselves if the audience is getting their message and 2. (b) Asking themselves if they have chosen the right words .

For asking themselves if their audience is getting their message, Monolinguals score 40.2%, while bilinguals score 52.7%. The difference is nine counts. Monolinguals score 22.2% on asking themselves if they have chosen the right words, while bilinguals score 27.7%. The difference is three counts.

CONCLUSIONS

The results of this study show that 63.8% of students are unaware of the concept of metacognition. This lack of awareness is found in not only high school students, but also in senior university students. Educators may need to be intentional in bringing awareness of the concept of metacognition in a more efficient manner. Even though the sample of 144 students is small, it gives a picture of this lack of awareness, considering that the number of participants is the same for both categories monolinguals and bilinguals. It would be interesting to examine metacognitive awareness in public schools and compare the results with the data obtained in private schools.

In the bilingual category, all the students acknowledge being bilinguals, but the percentage of those who feel comfortable in both languages is only 47.2%. This result indicates that the concept of bilingualism related to fluency in both languages might be different from feeling comfortable understanding and speaking both languages. On the other hand, 30.6% of bilingual students feel more comfortable in L1. This percentage could reveal that L1 continues to play an important role in their lives, even though school and university classes are all in English. Moreover, 22.2% of bilingual students indicate that they feel more comfortable in L2, which is English. A variable to consider for future research could be to find out the impact on bilingualism, whether the students use L1 or L2 at home.

Regarding the options proposed for each language skill, even though the inventory of these metacognitive strategies have not been validated in other studies, the results demonstrate that there are more similarities than differences between monolinguals and bilinguals in the choices they make of metacognitive strategies. A difference is noted in reading; bilinguals tend to make a picture in their mind to figure out the meaning of a text, while monolinguals prefer to pay attention to things that are mentioned multiple times. Another difference is observed for skimming a text; bilinguals skim a text to have a global understanding, while monolinguals do it to save time, or to decide if it is worthy of reading the full text. In writing, there is no significant variation in the choices of strategies. In listening, very similar options are observed between monolinguals and bilinguals. In speaking, bilinguals think of their tone of voice and vocabulary when they prepare themselves to speak. Monolinguals are divided into thinking of the audience and thinking of their tone of voice and vocabulary.

Research has proven that teaching metacognitive strategies improves not only learning but also facilitates ownership of ones' learning process (Flavell, 1987; Georgiades et al., 2004; Gunstone

and Northfield, 1994; Paris and Winograd, 1990; Radwan, 2011; Rivera-Mills & Plonsky, 2007; Siegesmund, 2017; TafarajiYeganch, 2013). Further research is needed to determine if the choice of specific metacognitive strategies will accomplish both goals: improve learning and facilitate ownership of the learning process in reading, writing, listening, and speaking.

References

- Abu Rabia, S. (2018). The effect of degrees of bilingualism on metacognitive linguistic skills. *International Journal of Bilingualism*. doi:10.1177/1367006918781060
- Asmawati, A. (2015). The effectiveness of skimming – Scanning strategy in improving students' reading comprehension at the second grade of Smk Darussalam Makassar. *ETERNAL (English, Teaching, Learning and Research Journal)*, 1(1), 69-83. doi:10.24252/eternal.v11.2015.a9
- Athanasopoulos, P. (2009). Cognitive representation of colour in bilinguals: The case of Greek blues. *Bilingualism: Language and Cognition*, 12(1), 83-95. doi:10.1017/S136672890800388X
- Bates, E & MacWhinney, B. (1989). Functionalism and the competition model. In MacWhinney, B., & Bates, E (Eds.), *The crosslinguistic study of sentence processing* (pp. 3-76). New York: Cambridge University Press.
- Bialystok, E., Craik, F. I., Kellin, R., & Viswanathan, M. (2004). Bilingualism, aging, and cognitive control: Evidence from the Simon task. *Psychology and Aging*, 19(2), 290-303. doi:10.1037/0882-7974.19.2.290
- Bialystok, E., & Viswanathan, M. (2009). Components of executive control with advantages for bilingual children in two cultures. *Cognition*, 112(3), 494-500.
- Brown, A. L., Bransford, J. D., Ferrara, R. A., & Campione, J. C. (1982). *Learning, remembering, and understanding* (Technical Report No. 244). Center for the Study of Reading, Urbana-Champaign, IL, University of Illinois. Also in J. H. Flavell & E. M. Markman (Eds.), *Carmichael's manual of child psychology* (Vol 3, pp. 77-166). New York: Wiley, 1983.
- Brown, A. L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65-116). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Burns, M. K., Hodgson, J., Parker, D. C., & Fremont, K. (2011). Comparison of the effectiveness and efficiency of text previewing and preteaching keywords as small-group reading comprehension strategies with middle-school students. *Literacy Research and Instruction*, 50(3), 241-252. doi:10.1080/19388071.2010.519097
- Chamot, A. U. (2004). Issues in language learning strategy research and teaching. *Electronic Journal of Foreign Language Teaching*, 1(1), 14-26.
- Chamot, A. U. (2005). The Cognitive Academic Language Learning Approach (CALLA): An update. In P. A. Richard-Amato & M. A. Snow (Eds.), *Academic success for English language learners: Strategies for K-12 mainstream teachers* (pp. 87-101). White Plains, NY: Longman.
- Chen, M. L. (2009). Influence of grade level on perceptual learning style preferences and language learning strategies of Taiwanese English as a foreign language learners. *Learning and Individual Differences*, 19(2), 304-308. doi:10.1016/j.lindif.2009.02.004
- Chomsky, N. (1965). *Aspects of the theory of syntax*. Cambridge: M.I.T. Press.
- Chomsky, N. (1976). On the nature of language. *Annals of The New York Academy of Sciences*, 280(1), 46-57. doi: 10.1111/j.1749-6632.1976.tb25470.x
- Chomsky, N. (1980b). On cognitive structures and their development: A reply to Piaget. In M. Piatelli-Palmarin (Ed.), *language and learning: The debate between Jean Piaget and Noam Chomsky*, (p. 35-54). Cambridge: Harvard University Press.
- Cohen, J. D., McClure, S. M., & Yu, A. J. (2007). Should I stay or should I go? How the human brain manages the trade-off between exploitation and exploration. *Philosophical Transactions of the Royal Society of London. Series B, Biological sciences*, 362(1481), 933-942. doi:10.1098/rstb.2007.2098

- Cohen, A. D. (2011). *Strategies in Learning and Using a Second Language*. Harlow, UK: Longman.
- Dijkstra, T., & Van Heuven, W. J. (1998). The BIA model and bilingual word recognition. In J. Grainger & A. M. Jacobs (Eds.), *Localist connectionist approaches to human cognition* (pp. 189-225). Mahwah, NJ: Lawrence Erlbaum Associates.
- Dijkstra, T., Timmermans, M., & Schriefers, H. (2000). On being blinded by your other language: Effects of task demands on interlingual homograph recognition. *Journal of Memory and Language*, 42(4), 445-464. doi:10.1006/jmla.1999.2697
- Dijkstra, T., & Van Heuven, W. J. (2002). The architecture of the bilingual word recognition system: From identification to decision. *Bilingualism: Language and Cognition*, 5(3), 175-197. doi:10.1017/S1366728902003012.
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231-235). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Flavell, J. H. (1979). Metacognitive and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906-911. doi:10.1037/0003-066X.34.10.906
- Flavell, J. H. (1987). Speculations about the nature and development of metacognition. In F. E. Weinert and R. H. Kluwe (Eds.), *Metacognition, Motivation, and Understanding* (pp.21-29). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Forbes, K., & Fisher, L. (2015). The impact of expanding A Level students' awareness and use of metacognitive learning strategies on confidence and proficiency in foreign language speaking skills. *The Language Learning Journal*, 46(2), 173-185.
- Faerch, C. & Kasper, G. (1986). Perspectives on language transfer. *Applied Linguistics*, 7(2), 111-136.
- Georghiades, P. (2004). From the general to the situated: Three decades of metacognition. *International Journal of Science Education*, 26(3), 365-383. doi:10.1080/0950069032000119401
- Goh, C. (2008). Metacognitive Instruction for Second Language Listening Development Theory, Practice and Research Implications. *RELC Journal*, 39(2), 188-213. doi:10.1177/0033688208092184
- Graham, S. (2007). Learner strategies and self-efficacy: Making the connection. *The Language Learning Journal*, 35(1), 81-93.
- Grimaldi, P., Lau, H., & Basso, M. A. (2015). There are things that we know that we know, and there are things that we do not know we do not know: Confidence in decision-making. *Neuroscience and Biobehavioral Reviews*, 55, 88-97. doi:10.1016/j.neubiorev.2015.04.006
- Gunstone, R. F. & Northfield, J. (1994). Metacognition and learning to teach. *International Journal of Science Education*, 16(5), 523-537.
- Hong-Nam, K., & Leavell, A. G. (2006). Language learning strategy use of ESL students in an intensive English learning context. *System*, 34(3), 399-415. doi:10.1016/j.system.2006.02.002
- Hulk, A. & Müller, N. (2000). Bilingual first language acquisition at the interface between syntax and pragmatics. *Bilingualism : Language and Cognition*, 3(3), 227-44.
- Khalil, A. (2005). Assessment of language learning strategies used by Palestinian EFL learners. *Foreign Language Annals*, 38(1), 108-117. doi:10.1111/j.1944-9720.2005.tb02458.x
- Kolling, N., Behrens, T. E., Mars, R. B., & Rushworth, M. F. (2012). Neural mechanisms of foraging. *Science*, 336(6077), 95-98.
- Kovelman, I., Baker, S., & Petitto, L. (2008). Bilingual and monolingual brains compared: A functional magnetic resonance imaging investigation of syntactic processing and a possible "neural signature" of bilingualism. *Journal of Cognitive Neuroscience*, 20(1), 153-169. doi: 10.1162/jocn.2008.20011
- Lai, Y. C. (2009). Language learning strategy use and English proficiency of university freshmen in Taiwan. *TESOL Quarterly*, 43(2), 255-280. doi:10.1002/j.1545-7249.2009.tb00167.x

Liceras, J. (2007). A linguistic approach to the idiosyncratic nature of second language acquisition: monosyllabic placeholders and morpheme orders. *Bilingualism Language and Cognition*, 10(1), 39-41. doi:10.1017/S1366728906002781

Liu, H. J. (2008). A study of the interrelationship between listening strategy use, listening proficiency levels, and learning style. *ARECLS*, 5, 84-104.

Liu, J. (2010). Language Learning Strategies and Its Training Model. *International Education Studies*, 3(3). doi:10.5539/ies.v3n3p100

Locke, J. (1924). In A. L. Pringle-Pattison (Ed.), *An essay concerning human understanding*. Oxford: Clarendon Press.

Malcolm, D. (2009). Reading strategy awareness of Arabic-speaking medical students studying in English. *System*, 37(4), 640-651. doi:10.1016/j.system.2009.09.008

Maniscalco, B., & Lau, H. (2012). A signal detection theoretic approach for estimating metacognitive sensitivity from confidence ratings. *Consciousness and Cognition*, 21(1), 422-430. doi:10.1016/j.concog.2011.09.021

Maniscalco, B., & Lau, H. (2014). Signal detection theory analysis of type 1 and type 2 data:

Meta-d', response-specific Meta-d', and the unequal variance SDT model. In S. M. Fleming & C. D. Frith (Eds.), *The cognitive neuroscience of metacognition* (pp. 25-66). New York, NY, US: Springer-Verlag Publishing. doi:10.1007/978-3-642-45190-4_3

Mastrothanas, K., Geladari A., Kladaki, M., (2018). Play activities in second language teaching metacognitive writing strategies to struggling bilingual writers: an empirical study. *International Journal of Education and Research*, 6(6), 280-287.

Meyniel, F., Sigman, M., & Mainen, Z. F. (2015). Confidence as Bayesian probability: From neural origins to behavior. *Neuron*, 88(1), 78-92.

Nelson, T. O., & Narens, L. (1994). Why investigate metacognition? In J. Metcalfe & A. P. Shimamura (Eds.), *Metacognition: Knowing about knowing* (pp. 1-25). Cambridge, MA: The MIT Press.

O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge, UK: Cambridge University Press.

Paradis, M. (1987). Organisation cérébrale des deux langues du bilingue. In J.A. Rondal & J.P. Thibaut (Eds.), *Problèmes de psycholinguistique*. Bruxelles: Pierre Mardaga.

Paris, S. G. & Winograd, P. (1990). How metacognition can promote academic learning and instruction. In B. F. Jones and L. Idol (Eds.), *Dimensions of thinking and cognitive instruction* (pp. 15-51). Hillsdale, NJ: Lawrence Erlbaum Associates.

Pavlenko, A. (2011). *Thinking and speaking in two languages*. Bristol, UK: Multilingual Matters.

Phakiti, A. (2003). A closer look at the relationship of cognitive and metacognitive strategy use to EFL reading achievement test performance. *Language Testing*, 20(1), 26-56. doi:10.1191/0265532203lt243oa

Pintrich, P. R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory into practice*, 41(4), 219-225. doi:10.1207/s15430421tip4104_3

Plonsky, L. (2011). The Effectiveness of Second Language Strategy Instruction: A Meta-analysis. *Language learning*, 61(4), 993-1038. doi:10.1111/j.1467-9922.2011.00663.x

Radwan, A. A. (2011). Effects of L2 proficiency and gender on choice of language learning strategies by university students majoring in English. *Asian EFL Journal*, 13(1), 114-162.

Rahimi, M., & Katal, M. (2012). Metacognitive strategies awareness and success in learning English as a foreign language: An overview. *Procedia - Social and Behavioral Sciences*, 31, 73-81. doi:10.1016/j.sbspro.2011.12.019

Rivera-Mills, S. V., & Plonsky, L. (2007). Empowering students with language learning strategies: A critical review of current issues. *Foreign Language Annals*, 40(3), 535-538. doi:10.1111/j.1944-9720.2007.tb02874.x

- Rubin, J. (1987). Learner strategies: Theoretical assumptions, research history, and typology. In Wenden & Rubin Eds., *Learner strategies in language learning* (pp.15-30). Englewood Cliffs, NJ: Prentice-Hall.
- Schneider, W. (2008). The development of metacognitive knowledge in children and adolescents: major trends and implications for education. *Mind, Brain, and Education*, 2(3), 114-121. doi:10.1111/j.1751-228x.2008.00041.x
- Schoonen, R., van Gelderen, A., Stoel, R. D., Hulstijn, J., & de Gloppe, K. (2011). Modeling the development of L1 and EFL writing proficiency of secondary school students. *Language Learning*, 61(1), 31-79. doi:10.1111/j.1467-9922.2010.00590.x
- Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science education: metacognition as part of a broader perspective on learning. *Research in Science Education*, 36(1-2), 111-139. doi:10.1007/s11165-005-3917-8
- Scoresby-Jackson, R. (1867). Case of aphasia with right hemiplegia. *Edinburgh Medical Journal*, 12, 696-706.
- Sharwood-Smith, M. & Kellerman, E. (1986). Cross-linguistic influence in second language acquisition: an introduction. In E. Kellerman & M. Sharwood-Smith (Eds.), *Language, Arts & Disciplines*. Oxford: Pergamon Press.
- Shiffman, M. (2011). *De Anima: On the Soul - Aristotle*. Indianapolis, Indiana: Focus Publishing.
- Shoghi, S., & Ghonsooly, B. (2015). The nature of metacognitive awareness in foreign language learners and its interaction with creativity. *Journal of Language Teaching and Research*, 6(5), 1051. doi:10.17507/jltr.0605.18
- Siegesmund, A. (2017). Using self-assessment to develop metacognition and self-regulated learners. *FEMS Microbiology Letters*, 364(11). doi:10.1093/femsle/fnx096
- Slabakova, R. (2006). Is there a critical period for semantics? *Second Language Research*, 22(3), 302-338. doi:10.1191/0267658306sr270oa
- TafarajiYeganeh, M. (2013). Metacognitive listening strategies awareness in monolingual versus bilingual EFL learners. *Procedia - Social and Behavioral Sciences*, 70, 1787-1793. doi:10.1016/j.sbspro.2013.01.254
- Taylor, A., Stevens, J., & Asher, J. W. (2006). The effects of explicit reading strategy training on L2 reading comprehension. In J. Norris, & L. Ortega (Eds.), *Synthesizing research on language learning and teaching* (pp. 213-244). Philadelphia: Benjamins.
- Ullman, M.T. (2001). The declarative/procedural model of lexicon and grammar. *Journal of Psycholinguistic Research*, 30(1), 37-69. doi:10.1023/A:1005204207369
- Vandergrift, L. (2002). 'It was nice to see that our predictions were right': Developing metacognition in L2 listening comprehension. *Canadian Modern Language Review/ La Revue canadienne des langues vivantes*, 58(4), 555-575. doi:10.3138/cmlr.58.4.555
- Vandergrift, L. (2003). From prediction through reflection: Guiding students: Through the process of L2 listening. *Canadian Modern Language Review/ La Revue canadienne des langues vivantes*, 59(3), 425-440. doi:10.3138/cmlr.59.3.425
- Vandergrift, L. (2005). Relationships among motivation orientations, metacognitive awareness and proficiency in L2 listening. *Applied linguistics*, 26(1), 70-89. doi:10.1093/applin/amh039
- Van der Maren, J. M. (1996). *Méthodes de recherche pour l'éducation* (2e éd.). Montréal /Bruxelles : PUM et de Boeck.
- Van Gelderen, A., Schoonen, R., Stoel, R. D., de Gloppe, K., & Hulstijn, J. (2007). Development of adolescent reading comprehension in language 1 and language 2: A longitudinal analysis of constituent components. *Journal of Educational Psychology*, 99(3), 477-491. doi: 10.1037/0022-0663.99.3.477
- Van Hell, J. G., & Dijkstra, T. (2002). Foreign language knowledge can influence native language performance in exclusively native contexts. *Psychonomic Bulletin & Review*, 9(4), 780-789. doi:10.3758/BF03196335
- Wenden, A. L. (1998). Metacognitive knowledge and language learning. *Applied Linguistics*, 19(4), 515-537. doi:10.1093/applin/19.4.515
- Whitaker, H. A. (1971). *On the representation of language in the human brain: problems in the neurology of language and the linguistic analysis of aphasia*. Alta: Linguistic Research, Edmonton.

Falla-Wood, J., & Varghese, K. (2020) Bilinguals, Monolinguals and their Choices of Metacognitive Strategies in Reading, Writing, Listening and Speaking. *Advances in Social Sciences Research Journal*, 7(6) 69-86.

White, L. (2003). *Second Language Acquisition and Universal Grammar*. New York: Cambridge University Press.
doi:10.1017/CBO9780511815065

Yau, J. L. C. (2009). Reading characteristics of Chinese-English adolescents: knowledge and application of strategic reading. *Metacognition and Learning*, 4(3), 217-235. doi:10.1007/s11409-009-9046-4