NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION


Using Numrich's Sequence of Critical Thinking Tasks to Improve Inferential Ability in

Listening Comprehension of L2 Learners with A1-B1 (CEFR) English Language Level


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Research Report submitted

in partial fulfillment of the requirements for the degree of

Master in English Language Teaching for Self-Directed Learning


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Chía, Colombia

August 2020

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COMPREHENSION

**Declaration**

I hereby declare that my research report entitled:

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- is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared and specified in the text;

- is neither substantially the same as nor contains substantial portions of any similar work submitted or that is being concurrently submitted for any degree or diploma or other qualification at the Universidad de La Sabana or any other university or similar institution except as declared and specified in the text;

- complies with the word limits and other requirements stipulated by the Research Subcommittee of the Department of Foreign Languages and Cultures;

- has been submitted by or on the required submission date.

Date:   August 14th/2020

Full Name:    Tania del Carmen Castro Núñez

Signature:

**Acknowledgements**

My words of gratitude came just before I started this academic journey to achieve my master's degree. I had the skills and knowledge, but I lacked wisdom and the wits to pursue my goal. Therefore, I asked God to provide me with the comprehension of all the scholastic components required to conclude this study. He generously provided me with patience, resilience, a wide variety of committed professors, friendly university staff, and supportive family, friends, and participants who made possible the accomplishment of such a pivotal academic endeavor.

I also wish to express my deepest appreciation to my parents Robinson Castro Puche and Olga Núñez de Castro, who emotionally and financially sponsored my project; special gratitude to my beloved children Alejandro Enrique and Andrea Carolina Hoyos Castro, who have been my earnest proofreaders as well as the reason for reaching my major milestones. Special thanks for the academic support and great fondness of my dear siblings, who had to adjust their family time to read drafts to ensure consistency, clarity, coherence, and logical flow of words.

I am indebted to my thesis director Dr. Liliana Marcela Cuesta, for the understanding, guidance, shaping, encouragement, and crystallization of this project. Her great advice proved monumental towards the success of this study. Thanks to my tutor Dr. Carl Edlund Anderson, who introduced me to the writing process and dexterity to master the intricate world of Mendeley and APA style.

I would like to recognize the academic assistance of my invaluable friend Jorge Luis Mojica, who also boosted me during the process, contributed with the time to proofread various

drafts, and had a keen eye to identify grammar lapses. Furthermore, all the efforts hadn't been possible if participants wouldn't have cooperated with the time and tasks to complete the study. Their active participation and disposition were the keys to success in this project and made this research possible. It was the most pleasant reward I could ever receive. Finally, it is wholeheartedly appreciated the efforts of my colleague peers, who during the past two years, comforted and helped me to believe that it was worthwhile.

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

In memoriam

Daniel Ladeiro, who earnestly shaped the way I approach questions.

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

## Abstract

The inferential understanding enclosed in both listening comprehension and critical thinking skills, have given diverse researchers the insight to correlate such concepts with new approaches. This study aims to investigate how the implementation of a flexible and overlapping framework of seven tasks divided into three categories; influence inferential listening comprehension by gradually increasing the tasks. Twenty-eight seventh-grade participants attending a bilingual school in Montería Colombia were introduced to visual aids and critical thinking listening tasks to encourage and advance critical thinking. Data were analyzed using the grounded theory approach. Results revealed that there was a positive correlation between critical thinking ability and inferential listening comprehension. Furthermore, differentiated instruction was used to scaffolding students with special needs. This strategy lends support to Numrich's sequence of critical thinking tasks, described as an effective approach to scaffolding tasks that allow students to achieve their goals according to their proficiency level. The present study provides essential information about the design and implementation of inferential listening comprehension in heterogeneous groups.

*Key words*: Critical thinking; listening comprehension; inferential listening; differentiated instruction.

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

**Resumen**

La comprensión inferencial incluida tanto en la comprensión auditiva como en las habilidades de pensamiento crítico ha dado a diversos investigadores la visión de correlacionar tales conceptos con nuevos enfoques. El presente estudio tiene como objetivo investigar cómo la implementación de un esquema flexible y coincidente de siete tareas divididas en tres categorías; influye en la comprensión inferencial al aumentar gradualmente las actividades. A un grupo de veintiocho participantes de séptimo grado que asisten a una escuela bilingüe en Montería Colombia, les fueron mostradas varias ayudas visuales y actividades de pensamiento crítico con el fin de estimular e incrementar su pensamiento crítico. Los datos se analizaron utilizando la teoría fundamentada. Los resultados revelaron una correlación positiva entre la capacidad de pensamiento crítico y la comprensión inferencial auditiva. Igualmente, la instrucción diferenciada se implementó para brindar apoyo cercano a estudiantes con necesidades especiales. Esta estrategia respalda la teoría de la secuencia de tareas de pensamiento crítico de Numrich con un enfoque preciso para las actividades que requieran un seguimiento especial y permita a los estudiantes alcanzar sus objetivos de acuerdo con su nivel de competencia. El presente estudio proporciona información esencial acerca del diseño y la implementación de la comprensión inferencial auditiva en grupos heterogéneos.

*Palabras claves:* Pensamiento crítico; comprensión auditiva; escucha inferencial; instrucción diferenciada.

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

**Table of Contents**

**Table of Figures**

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

## Chapter 1: Introduction

**1.1     Introduction to the study**

**1.2     Rationale for the problem of the study**

### 1.2.1    Needs analysis and problem statement

#### *1.2.1.1     Overview of context*

The present study was conducted with a sample of 28 students between 13 and 15 years

old, 11 female and 17 male participants between A1 and B1 according to the Common European

Framework of Reference (CEFR) L2 English level at a private school in Montería, Colombia.

All the participants belong to a high socioeconomic status. One female and four male

participants were diagnosed with Attention Deficit Hyperactive Disorder by a child psychologist,

and three male participants were also diagnosed with speech disorder language pathology by the

speech-language pathologist. The school offers bilingual education from nursery to eleventh

grade. Between 11 and 13 hours of English, classes are taught weekly, plus a two hours' session

at the English laboratory using MyEnglisLab Pearson English Interactive, the virtual platform of

the textbook. Furthermore, all students are required to take the TOEFL test to demonstrate at

least B2 (CEFR) L2 English level upon completion of high school.

#### *1.2.1.2     Needs analysis instruments and data collection*

To analyze participants' needs, data were first collected through classroom observation

during English classes, then they were registered in the researcher's journal. The analysis of this

observation showed that listening was the skill that seemed to generate most participants' issues,

specifically when inferencing, synthesizing, summarizing, and drawing conclusions based upon

auditory information. Additionally, the researcher found that the English teacher skipped directly to the while-listening and after-listening stages, overlooking the pre-listening stage.

Similarly, classroom observation in other subjects taught in English was also registered in the researcher's journal. The results determined that participants were able to listen to the teachers, recall information, and respond to convergent questions; yet they were not asked to complete any listening comprehension task. Additionally, they had difficulties with note-taking, drawing conclusions, inferencing, summarizing, and/or synthesizing information, endorsing the lack of training in the higher-order skills when listening. What is more, frequent disruptions when the teachers or peers were talking, as well as constant requests to repeat the information and given instructions were also observed. All these triggering factors were listening challenges found by the researcher.

Subsequently, the researcher analyzed two other instruments to gather additional data to measure participants' English language skills. With the first instrument, participants were asked to take the Pearson English Placement Test (PEPT); which evaluated grammar, listening, reading, and vocabulary. The analysis of results provided by PEPT examiners revealed that most of the participants performed listening below the expected standards. With the second instrument, MyEnglisLab Pearson English interactive, an average score of skills information was collected on vocabulary, grammar, listening, writing, and reading. Results revealed some aspects of paramount importance: Firstly, participants registered a low average score in the listening skill. Secondly, the platform only evaluated listening comprehension tasks that required students to recall specific information and convergent answers; overlooking the tasks related to pre-listening, listening for gist, summarizing, analyzing, ordering events into a sequence, and

inferential listening among others. Both instruments concurred that the major issue to improve

was in terms of listening skills. This concept was contrasted to the varied observations that

showed a lack of training in the higher-order skills when listening, especially critical thinking

related to inferencing, summarizing, synthesizing, drawing conclusions, and listening for details.

An additional survey on English language sub-skills rating of importance was aimed at

providing new information about English language skills' importance and functions. Results

reported that participants' present situation (respondents' proficiency level in the English

language) was closely linked to participants' results of the Pearson English placement test.

Findings disclosed that speaking and writing were highly rated, reading sub-skills had an average

rate, while listening sub-skills were the lowest-rated, particularly the sub-skills regarding

listening to follow directions, listening for inferences as well as note-taking, were the least skills

used. Results endorsed that participants had difficulty in comprehending all the implied

information, as they needed support with listening comprehension sub-skills.

Finally, an adaptation of the Questionnaire on Teachers' Interaction in the Professional

Development of Teachers (Fisher, Fraser, & Cresswell, 1995) collected data about participants'

perception of behavior and interactions with Science, Mathematics, Technology, English, and

Arts teachers. The analysis of participants' perceptions evidenced that the less clear the

explanation of the subject, the negative disposition of participants in keeping focused on

listening; as a result, attention span decreased as they started to wander. In addition, some

teachers' lack of confidence, strictness in the classroom, disturbing tone of voice, poor

motivation, anxiety, and permissiveness, seemed to be participants' most contributing factors of

disruptive listening; therefore, most of the participants were unable to pay attention to oral

instructions. Also, the results of the needs analysis were attached to misbehavior, anxiety,

constant arguing, and complaining. In sum, it could be said that lack of attention, low motivation,

anxiety, talking out of turn, excessive talking, difficulties to follow directions, and lack of

higher-order thinking skills training, particularly critical thinking, were the triggering variables

that seemed to be the most contributing factors of defective listening comprehension skills.

### *1.2.1.3    Problem statement*

Although the needs analysis identified various problems, results led the researcher to

focus the present study on participants' difficulties with listening comprehension skills, as this

one prevailed on the draw conclusions after triangulating data collected from five different

instruments. Therefore, it can be stated that students seem to have a lack of training in the

higher-order skills when listening, primarily critical listening related to inferencing,

summarizing, synthesizing, drawing conclusions, sequencing events, and listening for details,

among others.

### 1.2.2    Probable causes of the problem

An analysis of probable causes found in data collection, revealed that the main obstacle

with participants' inferential ability in listening comprehension skills, may have been caused by

lack of ability to implement critical thinking skills, lack of auditory input, lack of attention,

anxiety, constant request to repeat the information or given instructions, teachers and peers

disruptions due to distracting comments, and failure to keep focused on relevant information

when dealing with environmental/health issues such as, noisy classrooms, absence of internal

motivation, and ADHD diagnoses. Similar studies have also attached environmental distractions

as a contributing factor to poor listening skills (Alonso, 1996; Yuan & Che, 2012).

Most teachers fail to provide clear listening instructions, assuming that learners inherently

know how to listen. Therefore, this lack of awareness of the listening process may lower

learners' achievement and increase frustration (Barr, Dittmar, Roberts, & Sheraden, 2002). The

researcher acknowledged that the problem of ineffective listening skills and its negative impact

on academic performance was evidenced by the inability to use higher-order thinking skills.

### 1.2.3   Justification of the problem's significance

On the one hand, parents are the most significant sources of listening situations during the

early development of children's listening skills, and critical thinking; yet modern life rush has

put parents into pseudo-listening, disruptive listening mode, and hasty conclusions that lead to a

breakdown of listening rules and skills. These patterns seem to be the consequences of

participants' challenges with listening comprehension at school, which in turn has been

diminished by a lack of attention and lack of higher-order thinking skills. Stephen (2007), is also

in line with the researcher's perception, since she states that multitasking parents were poor

listening models with underdeveloped critical thinking skills; considering that they gave the

impression of being attentive, yet they were involved in a one-sided conversation; with the

tendency to interrupt or jump to hasty conclusions when the stories or explanations seemed to be

long.

On the other hand, teachers are prototypes for their students; in this regard, they have

been urged to enhance students' reasoning, creativity, and problem-solving skills by teaching

critical thinking as part of the curricula. Unfortunately, most teachers are not committed to this

approach as it requires more effort, understanding, and experience regarding higher-order

thinking questioning methods also used for standardized tests that ask similar types of questions

(Nour Mohammadi & Zare, 2015; Y.-T. Yang, Chuang, Li, & Tseng, 2013). Although there has

long been an emphasis on critical thinking questions, "it is a sad irony that teachers relying on

rote memorization and basic fact recall to improve student achievement on standardized tests are

actually practicing the opposite of what research shows is good teaching" (Smith & Szymanski,

2013, p. 17).

Furthermore, teachers also serve as role models for their students; they can be facilitators

of good listening habits. When teachers enhance the capacity of students to be in a listening

attitude; it is because they require students to listen differently. In the same manner, Richards

(2005) also endorsed that "the development of good listening habits is seen not only as

something valuable for its own sake but as something that supports the growth of other aspects of

language use, such as speaking and reading" (p.85). In turn, Nunan (1999) pointed out that there

was an assumption that native speakers needed to learn how to read and write, however, they

were not given instructions on how to listen and speak because these skills were spontaneously

awarded to them in their mother tongue. Consecutively, Gilakjani & Sabouri (2016) support the

fact that students face a lot of problems when they listen to a language; thus, teachers are

expected to teach them how to overcome their listening difficulties.

Additionally, school curricula for English as a Second Language (ESL) put a lot of effort

in emphasizing speaking, reading, and writing skills, without noticing that the source of primary

communication in a target language depends on listening skills; most of the instruction ignores

the importance of listening comprehension (Dunkel, 1991; Gilbert, 1988; Rost, 2011;

Vandergrift, 2007). Therefore, it is necessary to refocus participants' inferential ability in listening comprehension concerning the implementation of higher-order thinking skills, primarily those related to critical thinking to overcome listening comprehension problems and benefit not only participants, but also the population of the school; considering that they are required to take the TOEFL test upon completion of high school

**1.3     Rationale for the strategy selected to address the problem**

The present study examined approaches to addressing problems with listening comprehension skills, particularly through the use of higher-order thinking processes of inferencing, synthesizing, and analyzing information that encourages and advances critical thinking. Numrich's sequence of critical thinking tasks was selected because it supports students' learning and skills development by gradually increasing the challenge of a task at any proficiency level (Afifuddin, 2017; Beaumont, 2010; Merdinger & Barton, 2014). It consists of three sequences that focus on the students' world, on understanding and analyzing the text itself, and the world beyond the text (Wong, 2016). Numrich's sequence differs from applications of Bloom's revised taxonomy (Krathwohl, 2002) in which a complete bottom-up cognitive process of listening takes place, which would not have been appropriate to the present study, being overly simplified for the necessary objectives.

Numrich's sequence, first helped the researcher to consistently scaffold the task types according to participants' level and skill, going from the lowest to the highest and most complex order of critical thinking tasks (Gómez-Rodríguez, 2018). Furthermore, students could become more critical when they were challenged to think beyond their level of comprehension. Numrich's sequence also helped students to develop critical thinking skills, which seemed to be

required, since the needs analysis showed that students were not used to identifying information between the lines, using background knowledge to extract relevant information implied by the speaker, and decode the information from verbal and nonverbal clues.

**1.4      Research question and objective**

The present research objective was to analyze how Numrich's sequence of critical thinking tasks influenced students' listening comprehension. The question that guided the research was: How does the use of Numrich's sequence of critical thinking tasks develop inferential ability in listening comprehension of seventh-grade students with A1-B1 (CEFR) L2 English level?

**1.5      Rationale for the methodology of the study**

In this study, the fundamentals of mixed methods in action research sought to provide a more comprehensible approach to the research question and objective through the combination of both qualitative and quantitative methods to address the problem from different perspectives. The analysis provided in this study, focused on collecting and analyzing classroom data to evaluate and solve the issue derived from the needs analysis. In the same line of thought, Ivankova and Wingo (2018, p. 1) also acknowledged that combining both approaches "can produce more scientifically sound and transferable results by synergistically integrating qualitative stakeholder engagement with quantitative outcomes to inform action/intervention planning, implementation, evaluation, and monitoring"

A variety of reasons were chosen to address the research question. First of all, triangulation of data provided by group discussions, critical thinking listening activities, and a

version of the Watson Glasser appraisal test associated with the implementation of Numrich's

sequence of critical thinking tasks, along with differentiated instruction and scaffolding to

students with special needs investigated the problem from different perspectives to converge the

outcomes. In this sense, the use of qualitative and quantitative data was useful to interpret

numbers and give more accuracy to data presented in words.

## 1.6    Conclusion

This chapter highlighted some triggering factors that have diminished critical thinking and

listening comprehension skills of twenty-eight participants from a private bilingual school in

Montería, Colombia. Possible causes of the problem specifically the skill related to the use of higher-

order thinking processes of inferential information during the aural input, have been addressed by the

researcher in the needs analysis. Therefore, this study aimed at providing these learners with key

procedures such as observing and listening to short videos to promote and advance listening

comprehension through inference making. The strategy selected to address the problem was

Numrich's sequence of critical thinking tasks which developed scaffolded tasks with collaborative

work and differentiated instruction for participants with special needs to allow students to accomplish

their own goals. Next chapter develops the core concepts brought up herein, namely, listening

comprehension, inferential listening, and critical thinking

## Chapter 2: Literature Review

**2.1     Introduction**

Researchers have attempted to understand the complex biological, and social mechanisms in which the cognitive nature of listening comprehension is developed. In this sense, Richards (1983) refers to listening comprehension as a compound process that involves propositional identification, interpretation of the speaker's intention, and activation of real-world knowledge. Additionally, critical thinking is also one of the most important skills for students because it involves problem-solving, drawing conclusions, giving arguments, inferencing, and making judgements, applicable not only in the classroom, but also beyond it.

In the early stage of the present action research, the data analysis produced results which showed participants' frequent difficulties regarding listening comprehension due to a lack of training in the higher-order thinking skills, particularly in critical listening as well as failure to keep focused on relevant information due to health and/or environmental conditions. Thus, it was necessary to resolve inferential abilities in listening comprehension before participants take the TOEFL test upon completion of high school. Therefore, the proposed strategy used Numrich's sequence of critical thinking tasks over the overly simplified taxidermized and bottom-up revised Bloom's taxonomy (Bennett, 2012; Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956; Furst, 1994; Krathwohl, 2002) because it is more suitable to adjust it to the pre-listening, while-listening, and after-listening stages, helping at the same time, to consistently scaffold the tasks according to learners' level and skill development, going from the lowest to the highest and most complex order of critical thinking tasks (Afifuddin, 2017; Beaumont, 2010; Gómez-Rodríguez, 2018).

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

The constructs considered for this action research study were: Listening, listening comprehension, inferential listening, and critical thinking skills. Accordingly, for listening the main works were carried out by Witkin (1990), Schwartz (1998), and Hamouda (2013), which involved the listeners to process the information and provide comprehensible input. For listening comprehension, the fundamental sources were carried out by from O'Malley, Chamot, and Küpper(1989), Vandergrift (1999), Bostrom and Waldhart (1988), and Brown and Yule (1983) Lervåg, Hulme, & Melby-Lervåg (2018), which included a complex and active series of actions such as encoding and decoding bottom-up and top-down processes according to text, interlocutor, task, listener, and process factors that affect listening comprehension (Rubin, 1994).

For inferential listening, the primary constructs were carried out by Florit (2011) and Rost (1990, 2011) who revealed that the process of meaning construction requires the listener to apply linguistic and world knowledge to understand both information explicitly and implicitly. Albeit inference making is a fundamental cognitive process, limited research has been conducted on inferential ability in listening comprehension (Cain, Lemmon, & Oakhill, 2004; Guo, 2015; Kim, 2016; Ueda, 2007).

Finally, for critical thinking skills the fundamental sources were taken from Newmann (1990), Lewis and Smith (1993), Krathwohl (2002), Beaumont (2008, 2010), and Kruger and Van Der Merwe (2012) who defined critical thinking as a higher-order thinking skill that resulted in interpreting, predicting, sequencing, analyzing, evaluating, and inference making that enable the individuals to make reasonable judgements that seem to be the ultimate goal in listening comprehension in the classroom and beyond.

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

Critical thinking tasks enclose a variety of models and taxonomies; these taxonomies address and highlight different dimensions and cognitive system somewhat differently. In this sense, Bloom's taxonomy (1956), the revised Bloom's taxonomy (Krathwohl, 2002), the two-dimensional taxonomy (Amer, 2006), and Marzano's taxonomy (2007), who acknowledged that Bloom's understanding category regarding inference and predictions went beyond the literal level of comprehension. However, both taxonomies either disregarded the metacognitive skills or assumed that the level of critical thinking was implicit in all the sublevels of knowledge and utilization, although it was more useful for differentiating higher and lower-order thinking skills (Irvine, 2017).

Conversely, Beaumont (2010) has successfully applied Numrich's sequence of critical thinking tasks to measure reading comprehension at the school level, whilst Afifuddin (2017) measured the same skill in the EFL setting. Likewise, Nguyen (2016) applied the sequence of tasks to develop writing skills in tertiary education students, while the latest releases for tertiary education provided by Gómez-Rodríguez (2018), and Benavides, Cantillo, and Mogollón (2018) applied Numrich's sequence of critical thinking tasks in genre-based learning to foster intercultural communicative competence in English learners, and a syllabus proposal to develop critical thinking skills. Azadi, Zare, and Khorram (2015), Funk and Funk (1989), Hamouda (2013), Kakavand (2013), Sawako (2005), Myers and Dyer (2006) found that there was a significant relationship between critical thinking tasks and listening comprehension skills; however, they did not focus their attention on listening comprehension contexts.

In consequence, the present action research study, has adopted Numrich's sequence of critical thinking tasks because it is a convenient approach to scaffolding critical thinking and

listening comprehension. The implementation of critical thinking skills during the focus on the text perspective (while-listening stage) aims to fill the gap in listening comprehension and critical thinking literature, by using Numrich's sequence of critical thinking tasks.

## 2.2 Review of previous research on listening comprehension

### 2.2.1 Listening comprehension

Listening has had a wide variety of definitions, some are descriptive while others are based upon the variables provided by data, along with the contribution from many different disciplines and interest of the researcher (Witkin, 1990). On the one hand, listening is a skill that involves the listener in a series of processes related to hearing, attending, comprehending, and recalling what the speaker expresses. What is more, Wolvin and Coakley (2010) defined the process of listening as the process of receiving, attending to, and assigning meaning to aural stimuli. The elements included in their definition can be found in most descriptions of listening

On the other hand, Schwartz (1998) stated that listening is a transaction that forces listeners to process the information: immediately, without backtracking it or looking ahead, and with the sender's choice of features such as vocabulary, structural complexity, and rate of delivery. A recent definition was described by Hamouda (2013), who referred to listening as a fundamental language skill that provides comprehensible input achieved in language acquisition. Therefore, listening is essential not only as a reception skill, but also to the development of spoken language proficiency.

Listening comprehension is a complex and active series of actions that involve a dual process of encoding on the speaker's side, and decoding on the listener's side (Dirven & Oakeshott-Taylor, 1984). The decoding process is vital in listening comprehension because it relates to two simultaneous processes that include bottom-up processing and top-down processing (Henao, 2013; Lervåg et al., 2018). According to Yagang (1994), and able listener is capable of understanding a speaker's accent or pronunciation, his grammar and his vocabulary, and grasping his meaning simultaneously.

Listening comprehension is also illustrated as "an active process in which individuals focus on selected aspects of aural input, construct meaning from passages, and relate what they hear to existing knowledge" (O'Malley et al., 1989, p. 418; Richards, 1983). Vandergrift (1999) also described it as a process where the listener had to discriminate sounds with a wide comprehension of vocabulary and grammar, decipher intonation, stress, retain, and immediately interpret what was said, according to the socio-cultural context of the speaker. Conversely, Bostrom, and Waldhart (1988) pointed out that comprehension is essential to listening, but it remains unclear how cognitive integration (understanding) is related to listening as it could be irrelevant to listening. In contrast, Brown and Yule (1983, as cited in Gilakjani & Sabouri, 2016) stated that listening comprehension means that a person understands what he/she has heard. If he/she learns the text through hearing it, he/she will understand it (p.124).

Researchers have also found that the listening comprehension process "is influenced by individual learner characteristics such as learning style, strategy use, and affective factors" (Schwartz, 1998, p. 3). In contrast, Rubin (1994) reported that five major factors affect listening comprehension: text characteristics, interlocutor characteristics, task characteristics, listener

characteristics, and process characteristics. Surprisingly, only a few factors among the multiple

variables have been researched. Wang and Treffers-Daller (2017) also acknowledged that a

better understanding of the listener characteristics which determined learners' target language

success in the understanding speech was urgently needed because, as pointed out by Graham

(Graham, 2011, p. 113), "listening is a source of frustration to learners and an area in which it

seems difficult to make progress".

Other aspects involved in comprehending an aural text are related to filling in gaps,

introducing consistencies, and eliminating implausible interpretation with steady use of inference

to assemble the different elements in the story into a congruent structure (Rost, 1990). He

continues to express that it is difficult to uncover a sensible paradigm, without a realistic view of

understanding in verbal interaction.

Inferential listening refers to a complex process that results in the top-down skill that

activates critical thinking which identifies information between the lines, using background

knowledge to extract relevant information implied by the speaker, decode the information from

verbal and nonverbal clues, and take the speaker's hints. In this sense, Florit (2011) and Rost

(1990, 2011) revealed that the process of meaning construction requires the listener to apply

linguistic and world knowledge to understand both information explicitly and implicitly.

Concerning the inferential process, Rost (1990) claimed that this process was based upon a

perception of cues, rather than a straightforward matching of sound and meaning.

Conversely, Poussard (2003) states that it is a bottom-down approach that draws

conclusions from the evidence. Recent studies show that albeit inference-making can be

considered to be one of the fundamental cognitive processes in constructing the meaning of a

text in both listening and reading comprehension, limited research has been conducted on
inferential ability in listening comprehension (Cain et al., 2004; Feyten, 1991; Guo, 2015;
Henao, 2013; Ueda, 2007).

Literature shows a contradiction between two authors and their view on inference
making. On the one hand, Ridgway (2000) stated that "teaching listening strategies such as
making inferences was a waste of time" (p. 184). On the other hand, Field (2000) noted that "the
listener relies heavily upon strategic techniques to supply missing pieces of text" (p. 190). This
statement is validated by Guo (2015), who assured that "when the learner encounters a difficulty,
it is certainly very difficult to make inferences and listen at the same time. But making inferences
while listening does not pose the same problem for everyone" (p. 320).

### 2.2.1.1    *Critical thinking skills*

Critical thinking is part of higher-order thinking skills, defined as a set of skills used to
convey knowledge into a practical or creative way through the application, analysis, synthesis,
and evaluation. Newmann (1990) has defined what critical thinking is in terms of challenging the
student to interpret, analyze, and manipulate information. Another interpretation was given by
Lewis and Smith (1993) who connected the concept to "a person who takes new information and
information stored in memory, relates and/or rearranges and extend this information to achieve a
purpose or find possible answers in perplexing situations" (p. 136).

Subsequently, Krathwohl (2002) described thinking skills as a branch of Bloom's
taxonomy (1956) that links lower-order thinking skills with knowledge, comprehension, and
application, and the higher-order thinking skills with analysis, synthesis, and evaluation. In the
same line, Astleitner (2002) described critical thinking as a higher-order thinking skill which

mainly consists of "a purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanations of the evidential, conceptual, methodological, or contextual considerations upon which the judgment is based" (p.53). Similarly, Beaumont (2008, 2010) and Ordem (2016) used the term critical thinking to describe the concept of a purposeful self-regulatory reflection which results in analyzing, inferencing synthesizing, note-taking interpreting and evaluating information that allows individuals to make appropriate judgments not only in academic settings but in everyday life.

What is more, such higher skills are anchored with predicting, applying, inferring, sequencing, identifying parts and whole, classifying, comparing and contrasting, explaining patterns, explaining cause and effect, distinguishing different perspectives, problem-solving, synthesizing, connecting, and evaluating, which seems to be the ultimate goal in listening comprehension (Kruger & Van Der Merwe, 2012).

### 2.2.2 State of the art regarding listening comprehension.

Researchers have long sought to understand the complex biological and social mechanisms utilizing the cognitive nature of listening comprehension works. The many nuances involved in the cognitive and socio-affective nature of listening comprehension and its role in communication in L2 have challenged researchers, many of whom believe that listening is an art that requires a lot of work, self-discipline, and skill.

A brief historical description of listening was provided by Thomlinson (1984) who realized that during the decade of 1930 and 1940 researchers' main emphasis was directed to attention, comprehension, and retention; while in 1950 the focus of listening was placed on information, recall, facts, and explicit contents of the message.

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

By the 80s, Bostrom and Waldhart (1988) noticed that research in listening had not attracted the attention paid to other communication skills. Part of this neglect was due to definitions of listening, and part of it was a result of some of the problems inherent in measuring listening. For example, Lynch (2011) analyzed the first nine volumes of the Journal of English for Academic Purposes, and found a scant amount of articles on academic listening. Of note, he revealed that only one out of nine articles on listening and listening/speaking published in such periodical was devoted to listening comprehension. Vandergrift (2006) also emphasized the fact that despite all the technological innovations available today, listening continues to be the least researched skill. However, Khuziakhmetov and Porchesku (2016) have recently found that the problems of oral speech perception and listening comprehension learning have attracted much greater interest. In this regard, I believe that this research will provide more data on listening comprehension and therefore augment our understanding of this important skill.

Since listening is one of the four elements of a given language (being the other three speaking, reading, and writing), it is of paramount importance that learners refine their listening skills. What is more, "for speakers, listening and speaking tend to be more complicated than the acquisition of other skills, such as reading or writing, since the former are quite difficult to practice when the student does not live in an English speaking country" (Zulfugarova, 2018, p. 52). This was properly understood by pedagogy researchers, who stressed on the importance of listening techniques. For instance, Vandergrift (2004) found that from 1998 to 2003, researchers focused particularly on listening instruction techniques that could teach students how to listen. Likewise, Khuziakhmetov and Porchesku (2016), reinforce the theory that it is of primary importance to know the laws of the speech perception process, to teach how to listen, and to

explain the basic laws of the listening strategies. While Alrawashdeh and Al-zayed (2017) have currently found that teachers' attitudes have been reported to be the most critical factor for success within teaching listening comprehension techniques.

Furthermore, Field (1998) stated that changes have taken place in the way listening is viewed. He became aware of the importance of providing motivation and focus on listening yet failed to teach attention skills. Though these researches targeted their attention in teaching students how to listen, they overlooked the specific techniques to develop critical thinking skill during the listening task, which is the innovative pedagogic approach that is much needed in the context where this study takes place, to usefully contribute to better dealing with listening comprehension.

As the problem has persisted throughout the years, further researchers have made efforts to explain other possible contributing factors that might have caused poor listening performance. For example, Samuels (1984) revealed that factors related to language facility, intelligence, background knowledge, metacognitive strategies, speaker awareness of audience needs, nonverbal signals used in communication, and motivation seemed to be both inside and outside the head factors that influenced listening comprehension.

Similarly, Darti and Asmawati (2017) found that pronunciation, speech speed, lack of vocabulary, the different accent of the speakers, lack of attention, and bad quality of recording were the major problems encountered in listening comprehension. A recent study also brought to light how internal biases and racial stereotypes can affect the way people communicate and understand others (Babel & Russell, 2015). Consistent with this bias, Ingvalson, Lansford, Federova, and Fernandez (2017) demonstrated that every time the listeners were requested "to

judge the veracity of statements of sentences spoken by talkers with a variety of accents, including a native accent, they rated the statements spoken by the native talkers as being more truthful than the statements spoken by foreign accents" (p. 234). All these findings suggest that listeners might deviate their attention against the foreign speaker which in turn may impact the accuracy of speech perception, they must also recognize and try to work on the specific aforementioned factors that impede them to actively engage in a conversation.

### 2.2.2.1    *Critical thinking skills.*

The interest in teaching critical thinking as a major goal of schooling dates around the beginning of the twentieth century, where critical thinking started to be a trend in education. (Kivunja, 2015). For instance, Presseisen (1986) questioned how critical thinking had been emphasized to improve school programs or strengthen the instructions of learners. In the same line of thought, Bailin, Case, Coombs, and Daniels (1999) suggested that critical thinking had to be directed toward a purpose such as answering questions, problem-solving, decision making, solving issues, and so on. Likewise, Naderi and Ashraf (2014) acknowledged that a critical thinker can ask relevant questions, distinguish and collect relevant information and achieve conclusions either in academic contexts or in daily living; similarly, Strauss (2016) observes that critical thinking requires conceptual clarity on reasoning. Therefore, critical thinking skills are strongly needed in education as learners need these skills to successfully accomplish the tasks.

The implementation of special programs to teach critical thinking seems to be a decontextualized activity reduced to practicing individual skills according to the criteria provided by the teacher. For example, Radulović and Stančić (2017) assure that schools have failed to educate in critical thinking, and a reason for that could be how critical thinking is

conceptualized. Another concept relies upon the fact that what is done in class does not prepare

the learners to think critically but rather to recall information from the text, write exams and pass

the tests (Jeevanantham, 2005). Consequently, in education in critical thinking competencies as

the approach of the development of the curriculum along with the role of the learners in the

learning process needs to be reorganized.

The study of critical thinking involves mental processes of higher-order thinking skills.

These mental processes lead to active and conscious awareness of what learners encounter inside

and outside the classroom. For example, Marin and de la Pava (2017) suggested that

implementing critical thinking into English as a foreign language teaching has been of

paramount importance in the educational process. Beyond the classroom, critical thinking is

"applicable whenever people are called to make decisions or resolve a problem" (Murawski,

2014, p. 28). In this regard, the practical value of critical thinking skills is essential to developing

rational decisions not only in daily life, but also in academic settings.

**2.3      Review of previous research on the sequence of critical thinking tasks**

**2.3.1    The sequence of critical thinking tasks**

The theoretical framework for critical thinking tasks encloses a variety of models and

taxonomies used to inquire both higher-order thinking skills and lower-order thinking skills

questions. These taxonomies address different dimensions and emphasize the cognitive system

somewhat differently.

On the one hand, the revised Bloom's taxonomy (Krathwohl, 2002) is a complete bottom-

up cognitive process of listening, and it is still used as the basis for teaching critical thinking

(Garcia, Gómez, & Molina, 2013). This taxonomy is arranged into a hierarchical structure of six non-overlapping categories namely: remember, understand, apply, analyze, evaluate, and create, which at the same time is divided into subcategories (McGarrity, 2013; Pineda Báez, 2004). Such taxonomy begins with the simple acquisition of knowledge and moves to higher-order learning. In this sense, Irvine (2017) has claimed that the revised Bloom's taxonomy ironically rejected problem-solving from the taxonomy although teachers use it frequently. What is more, Furst (1994) critiqued Bloom's taxonomy due to its oversimplified method of thought. Bennet (2012) was more severe to critique Bloom's taxonomy (1956) when he stated that it was almost taxidermic, showing severe and critical signs of aging.

On the other hand, Anderson (2002) proposed that the new taxonomy of learning was indeed a two-dimensional taxonomy model that included six categories of mental processes which address retrieval, comprehension, analysis, and knowledge utilization to cover the bottom-up cognitive process of listening; while the metacognitive systems included processes that targeted aspects like specifying goals, process and disposition, monitoring, and the self-system focused on examining importance, efficacy, and emotional response to cover the top-down processing of listening. Similarly, Amer (2006), stated that the two-dimensional taxonomy table was the analytical tool of the revised taxonomy that stressed: "the need for assessment practices to extend beyond discrete bits of knowledge and individual cognitive processes to focus on more complex aspects of learning and thinking" (p. 222). This taxonomy table could be a useful framework that fits all subjects at any school level, yet it is not based upon individual lessons but on curriculum units or entire courses, nor it includes a level of critical thinking (Anderson, 2002; Irvine, 2017).

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

Marzano & Kendall (2007) acknowledged Bloom's understanding category by stating

that extrapolation involved inference and predictions that went beyond the literal level of

comprehension. The facts show that any category of Bloom's taxonomy correlated either the

metacognitive system or the self-system. This aspect makes Marzano's new taxonomy a more

suitable model to apply in research that equates critical thinking skills with listening

comprehension due to "the interaction of these elements that dictates one's motivation and

attention" (Marzano & Kendall, 2007, p. 63). However, the new taxonomy also disregarded the

level of critical thinking assuming that it is implicit in all the sublevels of knowledge utilization

which is used to carry out a specific task. Although, Irvine (2017) stated that "Marzano's

taxonomy is much more useful for differentiating higher and lower order thinking skills"; yet the

literature search revealed few instances of such use (Faragher, 2014).

In the same line of thought, Numrich's Sequence of Critical thinking tasks is described as

a series of tools that contain seven task types to support students learning process and critical

thinking skills. Beaumont (2010), explicitly described Numrich's sequence of critical thinking as

a theory that supports student learning and skills development by gradually increasing the

challenge of the language and critical thinking skills they employ. This sequence of tasks

highlights slight differences among various flexible and overlapping task types.

The sequence of critical thinking tasks includes three perspectives: focus on the students'

world, focus on the text, and focus beyond the text (Wong, 2016). These perspectives also have

seven critical thinking tasks; where observing and identifying assumptions correspond to the first

perspective; interpreting and understanding harmonize with the second perspective; and the

remaining tasks: inquiring further, analyzing and evaluating, and making decisions are included

in the third perspective. Additionally, a variety of skills including: looking, listening, summarizing, ordering, classifying, making inferences, interpreting meaning, making logical conclusions, and problem-solving are also practiced (Nguyen, 2016). He also sustains that "thinking tasks can build from short assignments focused on one or two key concepts to more complex assignments that encourage students to integrate ideas from many sources so that they simultaneously acquire knowledge and develop skills in using it" (p.39).

Further research also comes from Afifuddin (2017), who presented the sequence as a flexible framework that "guides teachers in scaffolding critical thinking and English language skills so that critical thinking may be practiced at any language proficiency level" (p. 132). Finally, Gómez- Rodriguez (2018), proposed "the use of genre-based learning as a significant communicative language approach to foster English learners' intercultural communicative competence through a sequence of critical thinking tasks" (p. 154); whilst Benavides, Cantillo, and Mogollón (2018) applied the sequence to a competency-based syllabus. Although many researchers have investigated listening comprehension strategies, few have researched about the relationship between critical thinking and listening comprehension (Azadi et al., 2015; Funk & Funk, 1989; Hamouda, 2013; Kakavand, 2013; Sawako Kato, 2005; Myers & Dyer, 2006), results have revealed "a significant and positive relationship between them.

Although, Marzano´s taxonomy as well as Anderson's two-dimensional taxonomy table approach seem to be suitable strategies, the first one assumes that critical thinking is implicit in all the sublevels of knowledge utilization, and the second one is not based on individual lessons. Therefore, this study adopts Numrich's sequence of critical thinking tasks because it is more suitable and flexible to adjust it to the pre-listening, while-listening, and after-listening stages

according to the students' needs; making it a convenient approach to scaffolding critical thinking and listening comprehension. Furthermore, the implementation of critical thinking skills during the focus on the task listening stage, aims to fill the gap that participants have regarding listening comprehension.

### 2.3.2    State of the art regarding the sequence of critical thinking tasks.

School is a breeding ground to develop critical thinking skills as it is the place where questions arise from a very early stage (Han & Brown, 2013; Melo, 2015). In this regard, Rudd (2007) emphasizes that "people who are innovative are intellectually curious and ask questions to clarify and learn" (p. 49). Surprisingly, schools pay little attention to developing critical thinking, regardless of realizing the importance of teaching such skills to students who are not frequently encouraged to question facts (Carvajal, Poveda, & Rojas, 2012; Uribe, Uribe, & Vargas, 2017; S. Yang & Chung, 2009). For instance, Ennis (1993) claimed that learning to think critically requires much reflective practice in a variety of situations which takes a long time. In the same line of thought, Gelder (2005) and Córdoba (2016) declare that critical thinking is a highly contrived task, it is difficult, and it takes a long time to master the tasks; thus, students do not acquire critical thinking skills as much as they could and should.

What is more, Schmaltz, Jansen, and Wenckowski (2017) suggested that students should leave secondary school with the ability to rule the necessary skills when they enter post-secondary training. In this regard, students who already use critical thinking skills are more likely to succeed not only in their graduate school in general, but also in their daily lives' problem-solving (Lamb, Maire, & Doeke, 2017).Therefore, implementing these skills at an early age must be the aim to accomplish the twenty-first century skills for life and career skills.

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

Fortunately, critical thinking has become a major topic in contemporary education as educators are beginning to explore an array of pedagogical practices to develop students' argumentative analysis, problem-solving, inferencing, and decision making (Karbalaei, 2012; Pohl, 2011). For instance, these skills can be taught and learned; when students learn these skills and apply them appropriately, they become better thinkers (Halpern, 1999). Though these studies have targeted their attention on teaching critical thinking skills to students; the sequence of critical thinking tasks is much needed in the context where this study takes place as it provides flexibility, one of the twelve twenty-first century skills, and guidance in scaffolding critical thinking and English language skills according to learners' needs, specifically when dealing with listening comprehension.

Although, research concerning the relationship between critical thinking and the four traditional English language skills has been very limited (Nour Mohammadi, Heidari, & Niry, 2012), some studies have had a significant correlation between critical thinking and language learning skills. For example, Peavey (1954), Devine (1962), along with Kato and Tanaka (2015) noticed that many of the critical thinking skills could be seen in operation in listening and reading, while Soodmand and Rahimi (2014), linked speaking to critical thinking. Some authors linked critical thinking to reading comprehension (Barjesteh & Vaseghi, 2012; Beaumont, 2010; de Leon-Abao, 2014), while others explored the relationship between critical thinking and its impact on writing (Çavdar & Doe, 2012; Numrich & Kennedy, 2016). However, few studies have examined the relationship between the use of critical thinking skills regarding inference making and listening comprehension, which has provided controversy either because it helped

listeners to automatize their inference-making ability or because it ended up being a waste of

time when teaching it (Guo, 2015; Poussard, 2003; Ridgway, 2000).

Thinking critically is an important component of education in the twenty-first century

(Benade, 2015; Numrich, 2009), and should be closely connected to listening comprehension

research. For example, Zare, Behjat, and Izadi (2013) conducted a study on critical thinking and

listening comprehension in EFL learners. In the same way, Ashraf and Naderi (2014) found that

critical thinking could be a good predictor of the listening comprehension ability. Similarly,

Nour and Zare (2015) as well as Azadi, Khorram, and Zare (2015), focused their studies on the

relationship between listening strategies and critical thinking in EFL learners. Finally, Elekaei,

Faramarzi, and Tabrizi (2016), explored the relationship between listening comprehension,

critical thinking, and autonomy in EFL learners. All these researchers found that there was a

significant relationship between critical thinking and listening comprehension skills. Although

they are relevant for this study, they failed to use specific strategies in scaffolding students

learning and skills development according to their needs.

On the one hand, most recent studies carried out by Mizbani and Chalak (2017) have

focused on the relationship between listening and speaking activities and Bloom's revised

taxonomy (Krathwohl, 2002). Results showed that listening activities only satisfied the lower

level of Bloom's revised taxonomy (Krathwohl, 2002). Similarly, Aghaei and Rad (2018), have

just interconnected Bloom's taxonomy (1956) and listening comprehension performance. In their

study, the authors selected this taxonomy based upon two premises: Firstly, because it was

widely accepted among educators, and secondly because it served as "a model that assists

educators in presenting ideas and concepts at varying levels of thought" (p. 23). The

aforementioned studies have claimed to be beneficial at improving listening comprehension,

however, they failed to provide support to critical thinking skills since Bloom's taxonomy

(Bloom et al., 1956) is considered as a complete overly simplified, taxidermized, and bottom-up

cognitive process still used as the basis for critical thinking (Bennett, 2012; Furst, 1994;

Krathwohl, 2002).

On the other hand, Numrich (2001), designed the sequence of critical thinking tasks,

which was later described by Beaumont (2010) who first applied the sequence on reading

comprehension at the school level; he also highlighted that the sequence met students' needs, and

scaffolded the development of language skills flexibly. Few studies have also used Numrich's

sequence to scaffold various critical thinking tasks and skills. For example, Nguyen (2016)

acknowledged how Numrich's sequence of critical thinking tasks could start with "short

assignments focused on one or two key concepts to more complex assignments that encourage

students to integrate ideas from many sources so that they simultaneously acquire knowledge and

develop skills in using it" (p. 40). He focused his investigation using Numrich's sequence of

critical thinking tasks and writing in EFL students.

Additionally, Afifuddin (2017) applied Numrich's sequence of critical thinking tasks to

measure reading comprehension in an EFL setting. He found that the process of the students'

thinking became dynamic because they "change perspectives occasionally from their world, to

the text, and beyond the text" (p. 134). Most recent studies, carried out by Gomez-Rodriguez

(2018) and Benavides, Cantillo, and Mogollón (2018) have just proposed the use of a genre-

based learning approach to foster English learners' intercultural communicative competence

(ICC), and the competence-based syllabus using Numrich's sequence of critical thinking tasks.

Although the aforementioned studies applied the sequence of critical thinking tasks in reading, speaking, and writing, they haven't focused their attention on listening comprehension contexts yet. Accordingly, the present action research becomes the first study that has considered the effects of using Numrich's sequence of critical thinking tasks to address inferential listening comprehension by developing a flexible framework that helps scaffolding listening comprehension at any proficiency level, according to participants' needs (Beaumont, 2010; Gómez-Rodríguez, 2018; Lunenburg, 2011; Nour Mohammadi & Zare, 2015; Tomlinson, 2014; Zare et al., 2013).

## 2.4    Conclusion

In previous sections of chapter two, the constructs of listening comprehension and critical thinking were reviewed. Varied models of taxonomies were described, analyzed, and addressed somewhat differently as approaches to research listening comprehension and critical thinking. Although Bloom's bottom-up hierarchical taxonomy, as well as the proliferation of taxonomies of learning such as the revised Bloom's taxonomy, the two-dimensional taxonomy, and Marzano's new taxonomy, have claimed to be beneficial at improving listening comprehension, they have failed to provide support to critical thinking skills. What is more, the taxidermized, complete bottom-up and overly simplified cognitive method of thought has shown severe and critical outdated signs still used as the basis for critical thinking.

Recent studies have demonstrated the value of using Numrich's sequence of critical thinking tasks in other English language skills as a flexible framework to scaffolding tasks at any proficiency level according to participants needs, and the need to design a study which allows the researcher to observe the influence of this strategy in listening comprehension. Furthermore, no

evidence of previous research concerned with inferential listening comprehension and Numrich's sequence of critical thinking tasks was found. Therefore, the present study aimed at filling that gap in the literature.

      In Chapter 3, a description of the context and participants of the study is provided along with an explanation of the selected data collection instruments such as placement tests, questionnaires, surveys, critical thinking listening test, group discussion, a modified version of the Watson-Glaser appraisal test, and the researcher's journal, to collect both qualitative and quantitative data that guaranteed the accuracy of the study.

**Chapter 3: Research Design**

**3.1      Introduction**

The present action research used the mixed method approach which allowed the researcher to link research and practice synergistically (Avison, Lau, Myers, & Nielsen, 1999), analyze data, integrate findings, and draw inferences to answer inquiries that cannot be addressed using a singular approach (Doyle, Brady, & Byrne, 2016). Twenty-eight L2 seventh grade learners with A1-B1 (CEFR) English language level between 13 and 15 years old from a private school in Monteria, Colombia were chosen as the subject for this research. Additionally, the role of the researcher implied being part of the study not only as a participant, but also as an observer (Fink, 2000; Greenbank, 2003; Nunan & Bailey, 2009). Ethical considerations were considered to protect intellectual property, participants' interests, and confidentiality, besides promoting knowledge, truth, and avoidance of errors, plagiarism, and scientific fraud (Avanzas, Bayes-Genis, Pérez de Isla, Sanchis, & Heras, 2011). The active consent method (Ellickson & Hawes, 1989) was used in the process of obtaining parental consent letters; during the consent process the researcher informed participants and parents/guardians about the purpose, possible uses of the research, and confidential use of participants' data (Economic and Social Research Council (ESRC), 2015)

During the first stage of data collection, five instruments were used to measure participants' cognitive and affective needs. The first data was provided by Pearson English placement test (See **Appendix B***: Placement tests*) which was applied before the implementation of the study to examine participants' language skills proficiency and English language level according to the CEFR.

The second instrument, MyEnglishLab Pearson English interactive platform (See **Appendix C: MyEnglishLab**) allowed a comparison of participants' language skills proficiency before the implementation of the study.

The third instrument used to collect data was the questionnaire on teachers' interaction in the professional development of teachers, (See **Appendix D***: Questionnaire on teachers' interaction in the professional development of teachers*) which asked participants to score 12 sentences about the teacher. Participants assessed their perception of behavior and interaction among teachers of other subjects taught in English.

The fourth instrument was the Researcher's journal (See **Appendix E***: Researcher's journal*) and the classroom observation form (See **Appendix G***: Classroom observation*), which collected and analyzed data in other subjects taught in English. They provided information about what happened in the classroom, why it happened, along with positive and negative factors affecting the classroom's environment. Additionally, the classroom observation form provided 16 sentences regarding teacher-student performance during a class session.

The fifth instrument provided new information about participants' views and experiences on how important English language sub-skills were according to their present situation (See **Appendix H***: English language skill rating of importance survey*) Participants' present situation was related to respondents' proficiency level in the English language.

## 3.2    Context

### 3.2.1    Type of study

The present action research study used a mixed-method approach of qualitative and

quantitative data to examine the influence that the use of Numrich's sequence of critical thinking

tasks had on listening comprehension, especially critical listening of seventh-grade students with

A1-B1 CEFR L2 English level. Action research was used due to its systematic process that

provided the researcher with new knowledge and understanding about how to improve

educational procedures, problem-solving, reflective teaching and thinking in the classroom;

offering multiple and beneficial opportunities for bridging the gap between research and practice

(Hine, 2013; Johnson, 2012). Avison, Lau, Myers, and Nielsen (1999), also support the fact that

this particular research method is unique in the way it links to research and practice

synergistically.

The researcher used the mixed-method approach in response to the limitations of the sole

use of the quantitative or qualitative method, which allows the researcher to analyze data,

integrate findings, and draw inferences to answer the research question that cannot be addressed

using a singular approach (Creswell, 2014; Doyle et al., 2016).

### 3.2.2    Participants

A group of 28 participants attending seventh grade at a private school in Montería,

Colombia. 11 girls and 17 boys aged 13-15 participated in the study. They belong to a high

socioeconomic status, and come from Montería, Cereté, Sahagún, and Lorica. The Pearson

English placement test (PEPT) results placed these students between the A1-B1 English

language level according to the CEFR (Council of Europe, 2011). Participants can listen to the teachers, recall information, and respond to convergent questions. However, the needs analysis (See Needs analysis instruments and data collection) revealed that they had difficulties with divergent thinking such as inferencing and drawing conclusions.

Concerning social and emotional development, the participants are constantly coping with behavioral issues, quarreling, excessive strictness, and disagreements, in which they may experience a lack of attention, and frequent request to repeat information or instructions already given by the teacher, because of inappropriate comments and/or recurrent disruptions. That is, most of the participants evidenced failure to keep focused on relevant information when faced with health/environmental issues such as: ADHD diagnoses, and noisy classroom environment (Anhalt, McNeil, & Bahl, 1998; DuPaul & Weyandt, 2006). In this study, five participants are diagnosed with ADHD associated with difficulties in achieving an independent task, disorganized school stuff, talking with classmates out of time, and frequent out of seat behavior, while three participants are diagnosed with speech pathology and related issues.

In terms of participants' cognitive needs, this group requires to advance from simple convergent answers to a more complex divergent thinking such as predicting, applying, inferring, sequencing, distinguishing different perspectives, problem-solving, synthesizing, connecting, and evaluating. In other words, they need to develop critical thinking since it encourages learners to be more actively engaged in the learning process which requires a broader response than just a simple one-word or brief answer (Geertsen, 2003; Moore, 2009; Waine, 2010).

### 3.2.3    Researcher's role

During the present action research study, the role of the researcher was a dual action of facilitating language learning in the classroom as a social context while gathering and analyzing data from observing learners, using psychometric data collection, and analytic procedures. (Nunan & Bailey, 2009). This role implied that the researcher is part of the study not only as a participant, but also as an observer (Fink, 2000; Greenbank, 2003). In this case, the researcher needs to describe and measure relevant aspects that document and analyze what goes on in the classroom, as well as making the necessary adjustments of the data collection instruments to verify the accuracy of the findings.

### 3.2.4    Ethical considerations

Ethical considerations are fundamental requirements that the research worker should uphold. The application of appropriate ethical principles endorses honor and respect for participants' voices (Koulouriotis, 2011). Moreover, The existing ethical considerations for conducting research often provide general guidelines rather than focusing on how to apply it (Mohd, 2018). Likewise. Specific guidelines, rules, and codes concerning research ethics have been adopted to protect intellectual property, participants' interests, and confidentiality. In this regard, authors and institutions rely upon the probity of the study, since they ensure favorable practice guidelines. However, misleading results, plagiarism, and scientific fraud may arise considering the pressure to publish the results as soon as possible to ensure funding sources for further studies (Avanzas et al., 2011).

The process of obtaining parental consent letters (see **Appendix A: Ethical considerations**) to research with 28 minor participants, was carried out utilizing the active consent method which asked all parents/guardians to return a signed consent letter voluntarily and free of coercion, indicating whether they wanted their child(ren) to participate in the study (Ellickson & Hawes, 1989). Furthermore, participants can withdraw from the research at any time, as well as the right to information about procedures and possible effects of the research. These aspects are of paramount importance as researchers could be accused of 'experimenting' on their students and 'threatening' their educational achievement (Burns, 2015). This method allowed the researcher to collect 100% of the consent letters.

During the consent process, the researcher informed participants' parents/guardians about the purpose, possible uses of the research, participants' requirements, as well as the confidential nature of the information of participants' personal data (Economic and Social Research Council (ESRC), 2015).

### 3.3    Data collection instruments

To gather information eight instruments were designed and administered in two phases. The first phase coincides with the needs analysis, which provided information to justify the research problem. The second phase was allotted to the piloting and validation which provided information to answer the research question stated above.

### 3.3.1  Descriptions and justification

#### 3.3.1.1     *Placement tests*

Placement tests are methods of gathering data about English language proficiency level and/or language skills. Typically, there are two types of placement tests: one has a proficiency orientation while the other intends to reflect the nature of such language courses (Wall, Clapham, & Alderson, 1994). The goal of the placement test was to reduce the number of learners who may face problems dealing with language skills and academic degrees (Pearson, 2016). In the present study, the Pearson English placement test (see **Appendix B*: Placement tests***) was applied before the implementation of the study, to examine participants' language skills proficiency and English language level according to the CEFR.

#### 3.3.1.2     *MyEnglishLab*

Another test was implemented through Pearson's virtual platform called MyEnglishLab, (see **Appendix C: MyEnglishLab**), which allows a comparison of participants' language skills proficiency before the implementation of this study. Similar studies (Greene & Lee, 2007; Smith & Szymanski, 2013; Solano-Flores, 2008) used this instrument to collect data and measure participants' language proficiency level, emphasize on thinking and problem-solving skills (Nour Mohammadi & Zare, 2015), similarly, given the importance of English language skills in the 21st century, standardized tests for English proficiency are also required for job placement and admission for tertiary education (Y.-T. Yang et al., 2013)

### 3.3.1.3    *Questionnaire on teachers' interaction in the professional development of teachers*

The questionnaire on teachers' interaction in the professional development of teachers, (see **Appendix D***: Questionnaire on teachers' interaction in the professional development of teachers*) asked participants to score 12 sentences about the teacher. Participants assessed their perception of behavior and interaction among teachers of other subjects taught in English. There are varied studies about students' attitudes and behaviors according to teachers' high quality, emotional support, and classroom organization. In this regard, high-quality teachers were expected to provide a supportive environment that enhances learners' behavior as well as social and emotional development, and critical thinking support (Blazar & Kraft, 2017; Lampert, 2015; Pianta & Hamre, 2009). Similar studies (Den Brok, Brekelmans, & Wubbels, 2006; Fisher et al., 1995; Koul & Fisher, 2005; Lang, Wong, & Fraser, 2005; Wubbels, Créton, & Hooymayers, 1985) used this instrument to collect data that links teacher-student interpersonal behavior to students' attitudes towards the subject taught.

### 3.3.1.4    *Researcher's journal and classroom observation*

The researcher's journal plays a particular role in an action research study. The major goal of it was to promote both the development and understanding of the researcher (Guthrie & Wigfield, 2000). The focus of the researcher was to collect and analyze what happened in the classroom, why it happened, as well as the positive and negative factors concerning language skills and affective matters (See **Appendix E***: Researcher's journal*). Varied studies have used the researcher's journal (see also **Appendix F***: Researcher's journal and classroom observation*) as

a key instrument to develop their own practice (Altricher, Posch, & Somekh, 2005; Bailey, 1990; Numrich, 1996). Classroom observation was a useful tool that along with the researcher's journal, provided more evidence about teachers' interactions in other subjects taught in English (see **Appendix G***: Classroom observation*). The questionnaire provided 16 sentences about teacher-student performance during the class session. Varied studies have used classroom observation to provide student teachers with suggestions for effective teaching and development (Borg, 2001; Engin, 2011). Comparable studies have given the importance of using classroom observation as an effective tool in education settings (Barócsi, 2007; Sideridis, 1998; White, 2018). Additionally, Classroom observation provided the researcher's journal more detailed evidence that allowed the researcher to study the process in naturalistic settings (Garrett & Steinberg, 2015; Pianta & Hamre, 2009; Zaare, 2013).

### *3.3.1.5*      *English language skill rating of importance survey*

The survey on English language sub-skills rating of importance (see **Appendix H***: English language skill rating of importance survey*) also played a particular role in this study, as it aimed to provide new information about English language skills importance and functions, where participants shared their views and experiences on how important English language skills were rated according to participants present situation (respondents' proficiency level in the English language). Various studies have endorsed the use of surveys and/or questionnaires in research, evaluation, and policy analysis to provide critical information in the education system (Berends & Garet, 2002; Desimone & Le Floch, 2007). Related studies have also believed that surveys and questionnaires are extremely valuable because they specify their content in explicit

terms, making them efficient in terms of researcher time, effort, and financial resources (Dörnyei & Csizér, 2011; Naranjo, 2006).

### 3.3.1.6     *Critical thinking listening test.*

The critical thinking listening test was designed to heighten awareness of the importance of both careful listening and thinking (See **Appendix I:** *Critical thinking listening test*)**.** This listening test provided sixteen critical thinking brain teaser questions that required thought, and sometimes thinking outside the box approach along with the way of thinking and responding (Butterworth & Thwaites, 2013). After listening to the question, participants wrote down their answers on the answer sheet provided by the researcher. Although they seemed to be ordinary questions, they had profound implications that triggered participants' higher-order thinking skills. Related studies have also believed that using brain teaser promote critical thinking (Özkan, 2010)

### 3.3.1.7     *Group discussion*

Group discussion (See **Appendix J***: Group discussion*) was plotted to provide an insight into how participants look for details in a set of pictures to infer the situation. Eight illustrations were posted throughout the classroom and participants' goal was to infer what was happening based upon what they looked, what they knew, or what they had personally experienced using their prior knowledge (Wetzels, Kester, van Merriënboer, & Broers, 2011). Participants were then asked to discuss the illustrations with each other after they recorded their answers. In this sense, Michaelsen, Fink, and Knight (1997) support the use of group discussions as it is the most

reliable way to gauge the learning value. Similarly, Sawyer (2004) noted that a central theme in

the sociocultural tradition is the focus on the group rather than the individual learning.

### *3.3.1.8      Watson Glaser appraisal test*

The Watson Glaser appraisal is considered as the most popular measure of critical

thinking ability (Ku, 2009) (See **Appendix K***: Watson Glaser appraisal test*). The test was

adapted to the Colombian context and English language level, to assess participants' ability to

think critically. It is designed to measures five sub-categories of critical thinking namely

inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. as

part of the higher-order thinking skills; following a sixteen item multiple-choice questionnaires

on inference, recognition of assumptions and deductions; with only one correct answer

(Chukwuyenum, 2013). These categories provided a passage of information on a statement.

A subsequent list of possible inferences followed, and participants were asked to rate if

they were true, false, possibly true, possibly false, or whether there was not enough information.

Previous studies conducted by Hassan and Madhum (2007) and Chukwuyenum (2013) also used

the Watson Glasser appraisal test to measure students' critical thinking skills.

### 3.3.2   Validation and piloting

The researcher used varied sources to collect data to pilot and validate the research

question and objective of the present study; these instruments helped to increase the researcher's

confidence to analyze data (Freeman, 1998). The new set of instruments was first proofread by

the tutor who approved them for further pilot testing before the implementation as an important

key for effective research (Cohen, Manion, & Morrison, 2007). The critical thinking listening

test was designed to raise awareness of the importance of both attentive listening and thinking (Clark, 1999; Lala et al., 2017). The group discussion piloting was aimed to check the efficacy and reliability of the instrument before the implementation of it (Bell, 2005), whilst the Watson Glaser appraisal adapted by the researcher to the Colombian context and English language level (Hambleton & Kanjee, 1995) assessed participants' ability to think critically using their higher-order thinking skills; following the same multiple-choice formats. The effectiveness of the Watson Glaser appraisal test was examined in line with participants' accurate responses during the piloting process; questions and procedures were intelligible for participants, and the researcher didn't require to clarify the questions.

## 3.4     Conclusion

This chapter presented the design of the study, aimed at further examining participants' context and needs analysis instruments, along with the researcher's role and ethical considerations such as the required consent letters gathered at the beginning of the study from school, participants, and parents/guardians. The chapter also examined the second stage of data collection instruments that oriented the course of the research question; instruments were pilot-tested and validated after a sound proofread. Finally, the subsequent chapter spotlights the pedagogical intervention and implementation to describe the visions of learning, vision of language, and curriculum behind it. Similarly, the instructional design is explained as to the lesson planning development and its further implementation.

**Chapter 4: Pedagogical Intervention and Implementation**

**4.1    Introduction**

The preceding chapter depicted the methodological design, precisely the type of study, participants, ethical considerations, data collection instruments proposed to solve the research question, and piloting and validation in which this study was implemented. The ongoing chapter examines the visions of language, learning, and curriculum that support the pedagogical approach during the implementation process. In addition, the lesson plan structures used along the implementation are portrayed with appropriate samples that provide a better understanding of how the working sessions were carried out. During the implementation process, some type of cooperative work and scaffolding was also necessary to promote participants' learning in a cooperative context.

**4.2    Visions of language, learning, and curriculum**

**4.2.1    Vision of language**

The school where this study takes place, conceives language within a bilingual school framework grounded in the general principles of constructivism which concentrates on how to think and understand. According to Willis and Willis (2008), language is viewed as a communicative tool to achieve an outcome. This characteristic of language implies selecting authentic materials that catch not only learners' attention, but also a degree of intellectual challenge that fosters their language development.

Accordingly, in this particular study, the target language is the source by which students as the center of learning have access to new information through cooperative work to enhance

critical thinking (Gokhale, 1995), use of multimedia, authentic material, with the teacher as a facilitator who encourages students to constantly self-assess their understanding, by questioning themselves and reflecting on their learning (Honebein, 1996; Reeve, 2006). Kumaravadivelu (2006) looks at the vision of language from three broad conceptual vantage points: Language as a system, language as a discourse, and language as an ideology.

Similarly, Wang (2014) supports the fact that under the guidance of constructivism theory, language teaching should cultivate the ability of learners' autonomous learning to make language study have personal meaning for language learners and promote their progress. The current study focuses on the vision of language on fostering inferential ability in listening comprehension as part of an undermined critical thinking skill; after analyzing and evaluating a viable solution for the problem at hand.

### 4.2.2   Vision of learning

The goal of teaching is to create the appropriate conditions to facilitate learning and benefit students in developing the ability to use language effectively (Tudor, 2001). Thereby, learning is converged according to the analytical learning vision, where learners use the vehicle language to communicate and the cognitive skills to consciously analyze the given information. Similarly, Vygotsky (1978) highlighted that much important learning occurs using social interaction with a skillful facilitator, who may model behaviors and provide verbal instructions for the learner. Vygotsky refers to this as cooperative learning. This vision of learning suggests that learners can use their critical thinking skills to explicitly study the structural and communicative patterns of the target learning, which is aligned to the vision of language (Tudor, 2001).

In the present study, special considerations are given to students with special needs to ensure that their learning is adapted to the requirements of the National Ministry of Education in Colombia (MEN, 2006). In this sense, differentiated learning as described by Tomlinson (2014) and Morgan (2014) was considered as a framework for effective learning that involves skillful facilitators who provided varied approaches to comprehend new information to all students with diverse ranges of knowledge (see **Appendix M***: Differentiated Lesson planning sample*). Support from this view comes from Shabani (2010) who examined Vygotsky's beliefs about a learner in the zone of proximal development (ZPD) with a particular task that needed to be carried out; appropriate assistance gave the learner a motive to achieve the task. Three important components are essential to help a learner moving through the zone of proximal development: social interaction with a skillful teacher, cooperative work with peers whose knowledge and skills surpass that of the learner in the ZPD, and scaffolding activities to ensure the learning process until the learner can complete the task again on his/her own.

### 4.2.3    Vision of curriculum

The curriculum is defined as an overall plan for a course or a program containing its educational purpose in terms of aims or goals, content, and sequence in which it will be taught, teaching procedures, activities, along with the assessment and evaluation of learners (Richards & Schmidt, 2013). Likewise, the vision of curriculum at the bilingual school and the teaching procedures where this study is carried out, aims at developing skills to integrate content and understanding for further assessment and evaluation, considering globalization and its impact on the local Colombian context. What is more, Ozfidan and Aydin (2017) acknowledge that one of the goals of bilingual education in the curriculum is fostering academic achievement, enabling

native speakers to learn a vehicle language, conserving cultural heritage, and advancing national

language resources.

Substantial evidence demonstrates that bilingual education is seemed to be depicted as an

educational system in which information is delivered in the native language and the vehicle

language (Baker, 2011; Lu & Baker, 2006; Ozfidan & Aydin, 2017). However, in middle and

high school the traditional fragmented model for organizing the curriculum focuses on separate

and different disciplines taught by different teachers in their language of instruction which can be

either L1 or L2. According to Fogarty (1991), this model views the curriculum as a periscope

that offers one directed focus on a single discipline. Although the curriculum is grounded upon

both the standards for English language teaching set by the Common European Framework

References (CEFR, 2011), and the standards provided by the National Ministry of Education

(MEN, 2006), a flexible curriculum is often tailored to respond to the needs of individual

learners (Garzón & Acuña, 2016; Medina, 2008).

## 4.3    Instructional design

The instructional design was carried out following the process of critical thinking tasks

integrated with skill-based lessons for the teaching of higher-order thinking skills as part of the

listening comprehension strategies.

### 4.3.1    Lesson planning

During the pedagogical implementation, lesson plans (See **Appendix L***:* **Lesson**

**planning**) were carried out on time following a set of stages adapted from the traditional lesson

plan schema. First of all, the introduction, presented the established goals while the presentation

covered the oral instructions recorded by the teacher to promote listening skills strategies; similarly, controlled practice registered in detail the observation and communicative events, the closing stage covered the review and follow-up. Finally, the corresponding data collection instruments and the construct tackled were also recorded. A sample of the lesson plan implementation is referenced in Appendix L. Additionally, during the first phase of each implementation week, participants were asked to observe illustrations, short silent videos, and visual texts, to address the research question and objective. After this, participants were asked to work cooperatively moving from individual to pair work, helping each other when necessary and sharing their knowledge to allow motivation of disadvantaged participants to complete the task at hand, considering the vision of learning previously depicted in this chapter.

### 4.3.2    Implementation

The pedagogical implementation was carried out during the first semester of 2019 between May 6th and June 12th; 28 hours were invested during the implementation according to the study's timeline implementation chart (see **Appendix N***: Timeline Implementation*). This implementation was divided into two phases, namely intervention, the scaffolding of listening, and instrument piloting phase, and the implementation phase.

In the first phase, the teacher-researcher and participants spent six hours in cooperative learning about listening strategies and scaffolded activities for students with special needs. Supports from this view come from Graham (2006, 2011, 2017; Graham & Macaro, 2008) who acknowledge that it is possible to develop effective listening strategies use through instruction, with potential benefits for learners' listening proficiency. Three hours were assigned to implementing the pre-listening stage or focus on the students' world (critical thinking task:

Observing and skill practiced: Looking); this activity was carried out using qualitative and quantitative approaches used in the inferencing processes.

Additionally, the students provided their illustrations, and the teacher presented short silent videos that described a specific event or situation to activate background knowledge. Higgins (1979) also supports the fact that pictures not only can convey information, but also can provide a basis for the exercise of thinking processes. One hour was invested to piloting the critical thinking listening activity, three hours were spent in tasks related to the while-listening stage or focus on the text (critical thinking task: Interpreting and skill practiced: Making inferences), one hour was invested to piloting the Watson-Glaser appraisal text adapted to the Colombian context and English language level. Finally, two hours were allotted to work on the post-listening stage or focus beyond the text (critical thinking task: Analyzing and evaluating and skill practiced: Making logical conclusions), and one hour was assigned to piloting the group discussion event.

The second phase was invested to validating the instruments; during the implementation phase, one hour was assigned to validating each of the previously piloted critical thinking listening activity, a modified version of the Watson Glaser appraisal test, and the group discussion event, in conjunction with the written group discussion insights. Furthermore, eight hours were invested in the teacher's journal through collecting and analyzing what happened in the classroom, why it happened, along with the positive and negative factors regarded to language skills and affective matters during the action research study. Figure 1 illustrates how Numrich´s sequence of critical thinking tasks took place during the first phase of the implementation process.

| Perspective | Critical Thinking Tasks | Skills Practiced |
|---|---|---|
| *Focus on the students' world* | 1. Observing | Looking<br>Listening |
| | 2. Identifying assumptions | Sharing background<br>Expressing opinions<br>Clarifying values |
| *Focus on the text* | 3. Understanding and organizing | Summarizing<br>Distinguishing relevant details<br>Ordering<br>Classifying<br>Comparing and contrasting<br>Explaining cause and effect |
| | 4. Interpreting | Making inferences<br>Interpreting meaning<br>Hypothesizing<br>Theorizing |
| *Focus beyond the text* | 5. Inquiring further | Surveying the public<br>Interviewing a specialist<br>Researching |
| | 6. Analyzing and evaluating | Synthesizing information<br>Critiquing<br>Reflecting on related ideas<br>Making logical conclusions<br>Reevaluating assumptions |
| | 7. Making decisions | Proposing solutions<br>Problem solving<br>Taking action<br>Participating |
| (Beaumont, 2010, p. 431) | | |

Based on Numrich's Sequence of critical thinking tasks, the stages represented are: Focus on the students world by **Looking** at the illustrations.

Focus on the text, by critically interpreting relevant details from illustrations, and **make inferences.**

Focus beyond the text to write their answers, they have to analyze and evaluate illustrations to **make logical conclusions**

Figure 1 Numrich's sequence of critical thinking tasks

## 4.4    Conclusion

This chapter addressed the visions of language, learning, and curriculum as critical factors that structured the pedagogical implementation. Language as a linguistic system, facilitates communication and serves as a functional purpose letting learners express their ideas and thoughts. Similarly, the vision of learning considered an analytical approach to cooperative learning and the learner in the zone of proximal development, which fosters task completion for effective leaning; enabling participants to strengthen their cognitive skills. Finally, the vision of curriculum related to bilingual instruction grounded upon national and international standards allowed some space to tailor a flexible curriculum to respond to special needs. Additionally, this chapter presented a detailed description of the pedagogical intervention carried out in this study to answer the research question considering the sequence of critical thinking tasks in listening comprehension as the main elements for the instructional design. A thorough explanation of the data collection analysis is presented in the following chapters.

**Chapter 5: Results and Data Analysis**

**5.1     Introduction**

The preceding chapter described the instructional design, namely the lesson plans, as well as the

pedagogical implementation of the present study. Visions of language, learning, classroom, and

curriculum that supported the mentioned instructional design were also revised. This chapter

accounts for the implementation of steps and procedures related to data management under the

light of grounded theory managed to describe and explain the codes, categories, and core

categories that emerged to answer the research question; these relationships suggest that using

the sequence of critical thinking tasks during and after the research project, influenced seventh-

grade students' inferential ability in listening comprehension. Similarly, the mixed-method

approach (Creswell, 2014) which involves the collection and integration of both quantitative and

qualitative data is also studied.

**5.2     Data management procedures**

This section discloses how the convergent parallel mixed method approach applied the

two data sets separately, to provide a general understanding as to the degree in which both

qualitative and quantitative results either endorse or complement one another (Creswell, 2014;

Creswell, Klassen, Plano, & Clegg, 2011; Plano & Creswell, 2010). Quantitative data was

collected through critical thinking listening activities, a modified version of the Watson Glasser

appraisal test, and group discussion, whilst qualitative data was collected through students'

insights reflective questions, classroom observation, and the researcher's journal.

During the six-week of the phase intervention, quantitative and qualitative data allowed the researcher to validate participants' approaches regarding inferential listening comprehension, before the implementation of the strategy, while, and after implementing the research project. Throughout the weeks, the researcher used the journal to register participants' expectations, attitudes, and feelings towards the implementation of the strategy during the piloting and validation process. Participants' responses were classified using the students' code number to maintain their anonymity and confidentiality (Kaiser, 2009). During the first phase intervention, participants were trained in listening strategies and scaffolded activities for the pre-listening stage (focus on the student's world): Critical thinking task: Observing skill practiced: Looking, while-listening stage (focus on the text): Critical thinking task: Interpreting skill practiced: Making inferences, and the post-listening stage (focus beyond the text): Critical thinking task: Analyzing and evaluating skill practiced: Making logical conclusions (See figure 1). During the second phase intervention, participants were administered the validation tests; the researcher prepared the grounds of critical thinking listening activity, a modified version of the Watson Glaser test, group discussion, and students' insights question. Participants' written responses were used as data collection instruments, which were later gathered in a matrix to simplify the management and analysis process (See **Appendix O: Data management procedures**).

### 5.2.1  Validation

Validity was provided by the methodological triangulation process consisting of collecting information from 28 participants, adopting both open-ended and closed-ended data to answer a specific research question. Triangulation in research is described by Heale and Forbes (2013, p. 98) as "the use of more than one approach to researching a question". In other words,

the objective is to increase confidence in the findings through the validation of a proposition

using two or more independent measures. In this sense, the association of findings from more

than two instruments provided a broader account of the outcomes than either approach could do

by itself (Creswell, 2014; Creswell & Plano, 2011). In this study, methodological triangulation

was used to gather more comprehensive data, and a greater understanding of the research topic.

(Cohen et al., 2007). Therefore, when both methods were combined, they granted not only an

element of cross-checking, but also the opportunity to connect and see the world from

participants' points of view (Corbin & Strauss, 2015).

### 5.2.2 Data analysis methodology

The data analysis method of this study has been carried out adopting the convergent

parallel design described by Creswell (2014), and Creswell and Plano (2011) as a design that

entails the researcher to simultaneously collect both quantitative and qualitative data, to analyze

the two components independently, and articulate the information in the interpretation of the

overall outcomes

On the one hand, data collection instruments were organized on the data analysis matrix

in excel format. Each instrument was allotted a worksheet to have a simplified view and

management of the results. To analyze the quantitative data collected during the piloting and

validation of the group discussion and the critical thinking listening activity, the researcher

proceeded to register each student's answers, color code similar responses, and plot the results

through histograms, whilst the modified version of the Watson-Glaser appraisal multiple-choice

tests was registered according to the answers provided; results were also plotted using

histograms. Afterward, findings were analyzed allowing the researcher to compare and contrast the results to identify participants' process and progress during the pedagogical intervention.

On the other hand, qualitative data were analyzed using the grounded theory method through constant comparison from the teachers' journal along with the students' insights. In this study, grounded theory followed the step by step procedure for open coding, axial coding, and selective coding described by Corbin and Strauss (1990). The processes of collecting, registering, classifying, coding, and analyzing open-ended data constructed theories based upon the data themselves. Constant comparisons are needed in open coding to break data down into manageable pieces that are later compared for similarities and differences (Cohen et al., 2007; Corbin & Strauss, 2015). Data conceptually similar in nature were grouped under the same conceptual heading.

During the axial coding, concepts were regrouped together to bring up into categories or themes. Each category was refined in terms of its properties and dimensions according to the strategies, causal, contextual and intervening conditions linked to the phenomenon (Creswell, 2002). Causal conditions referred to the factors that led to the occurrence of the subject under study, strategies were the specific actions or interactions that resulted from the core category, contextual conditions were the specific set of conditions that dimensionally intersected, and intervening conditions were the structural conditions that facilitated or constrained the strategies taken within the context (Corbin & Strauss, 1990). After the previous two steps, four different categories were finally integrated around a core category during the selective coding process to generate the storyline. The researcher triangulated the quantitative statistical data with the support of the core category and categories obtained from the qualitative data analysis which

theoretically conveys what the research is all about (Corbin & Strauss, 2015) In other words, to

answer the research question and explain how the contribution of Numrich's sequence of critical

thinking tasks improved inferential listening comprehension.

## 5.3    Categories

This section explains how the coding process was extracted and categorized from the

teacher's journal, and the student's insight question; four categories and one core category were

identified and developed, based upon the three systematic coding steps namely open coding,

axial coding, and selective coding that supported the categories (Creswell, 2014).

### 5.3.1    Overall category mapping

Collected data from the teacher's journal, and students' insights were divided into three

segments using the color-coding technique to establish a reduced version of initial concepts

during the open coding stage as shown in Figure 2 (see **Appendix O: Data management**

**procedures**). This technique helped the researcher revise and summarize a smaller number of

concepts during the axial coding stage in which initial categories and subcategories emerged

from the grouped codes as seen in Figure 3. Finally, these categories and subcategories were

systematically connected and circumscribed during the selective coding stage in an attempt to

comprise the essence of the data and create the storyline. Some subcategories were integrated,

and categories were renamed and interconnected. The final core category, and the categories that

answer the research question of the present study are shown in Figure 4.

**Figure 2** *Open coding from students' insights and teacher's journal*
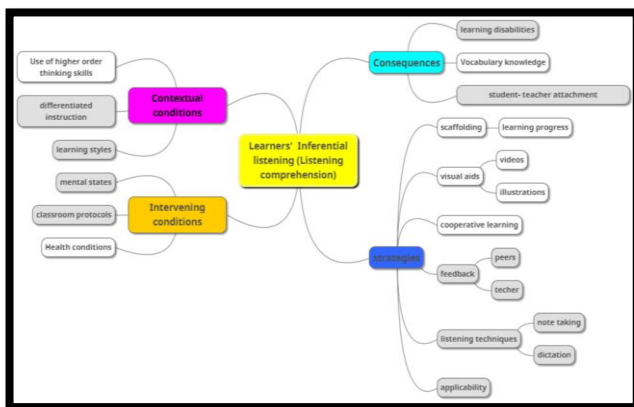


**Figure 3** Core category, categories, and subcategories of axial coding



**Figure 4** *Final categories and core categories after the selective coding procedure*

**5.3.2    Discussion of categories**

After completing the coding stages, the relationships between the codes that emerged

from the qualitative data collection instruments displayed the existence of four main categories:

procedures, diversity, triggering factors, and mental processes.

**5.3.2.1. *Procedures***

Participants realized that their inferential listening skills improved throughout the

implementation of the sequence of critical thinking tasks approach. Through the use of visual

aids, they were asked to looking at images extracted from short silent videos during the focus on

the students' world stage depicted by Beaumont (2010), along with the use of listening strategies

namely note-taking and dictation. Figures 5 and 6 show situations where illustrations used for

inferencing tasks and cooperative work played an important role in both academic and social

skills.



**Figure 5** *Looking and inferencing task trial*

Participants acknowledged that there were three stages to listen which should be

considered when listening in general. Since the beginning of the implementation, they reflected

on the importance of giving feedback for reflective learning used in scaffolding as shown in
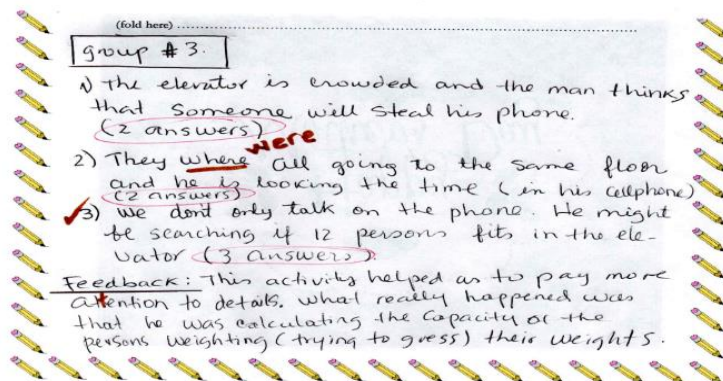
figure 6.



**Figure 6** *Group discussion answers and feedback*

Figures 7 and 8 show how participants became aware of the details depicted in the

images, as they were asked to use their background knowledge and inferencing skills. During the

group discussion, more accurate responses were given, and cooperative work also provided

support during differentiated instruction



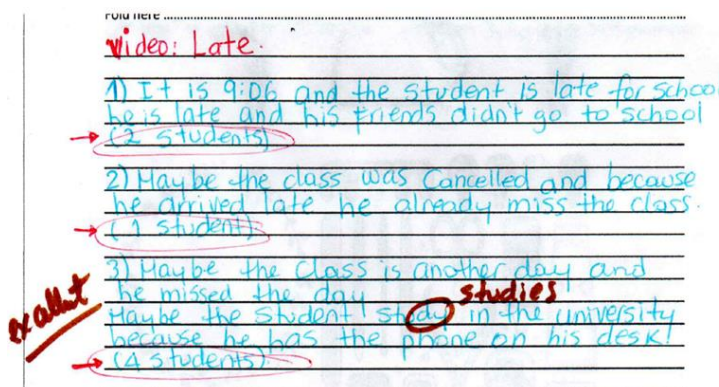**Figure 7** *Looking and inferencing task*

**Figure 8** *Group discussion inferencing task*

**5.3.2.2.** *Diversity*

During the introductory session, the researcher provided differentiated instructions to students with health issues, and special needs following the example on figure 9 described by Merdinger and Barton (2014, p. 159) to focus on the students' world using *observing* as the specific critical thinking task, and *looking* as the skill practiced. Once participants were familiar with the procedures, the researcher proceeded to expose them with authentic material to make the learning process more engaging, imaginative, and motivating (Rashid & Majid, 2014).
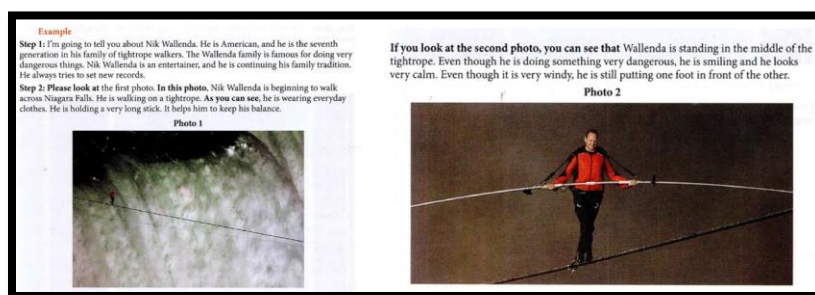


**Figure 9** *Example to follow the steps to activate students' world*

**5.3.2.3.** *Triggering factors*

More procedures such as dictation and note-taking were also needed to increase not only the attention span of participants with health issues and special needs, but also to diminish one of

the triggering factors of the classroom protocols that influenced listening comprehension

described during the preliminary need analysis of the study. Therefore, brief dictations and note-

taking exercises as shown in figures 10 and 11 were also administered before the piloting and

validation processes to facilitate further task
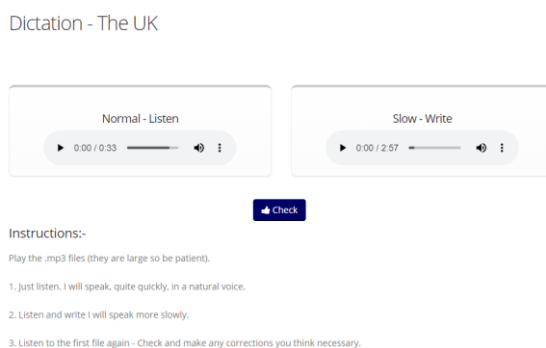


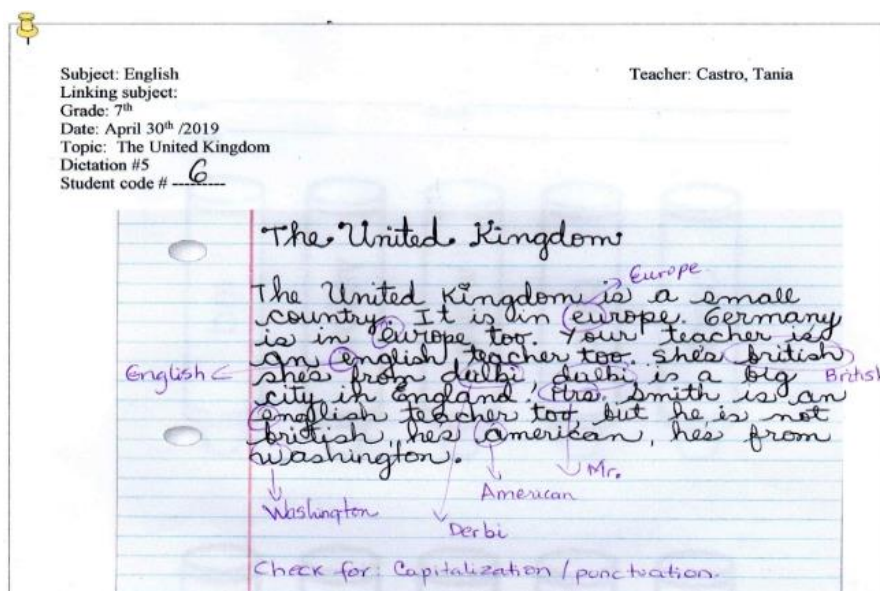**Figure 10** *Online dictation with differentiated instruction*



**Figure 11** *Dictation at a normal speed*

**5.3.2.4.** *Mental processes*

Group discussion piloting test using critical thinking and observing task, was carried out

according to written instructions provided by the researcher (See **Appendix J***: Group*

*discussion*). A set of 8 pictures were presented and participants were asked to make sound

inferences. Figures 12, 13, and 14 show how participants' answers were classified, color-coded,

and plotted using histograms for statistical purposes. Notice that in figure 12, five participants

were not able to give a response according to the image. Finally, the pink bars in figure 14

correspond to precise responses.

| | Pic 1 | codes | Pic 2 | codes | Pic 3 | codes |
|---|---|---|---|---|---|---|
| 3 | 9 students | middle school grad | 13 students | Birthday party | 9 students | cold day |
| 4 | 17 students | High school grad | 8 students | gift exchange | 7 students | stay home |
| 5 | 2 students | not answered | 5 students | dislike present | 12 students | day off |
| 6 | | | 2 students | not answered | 1 student | not answered |
| 7 | | | | | | |

**Figure 12** *Group discussion answers*



**Figure 13** *Images regarding group discussion task piloting test*
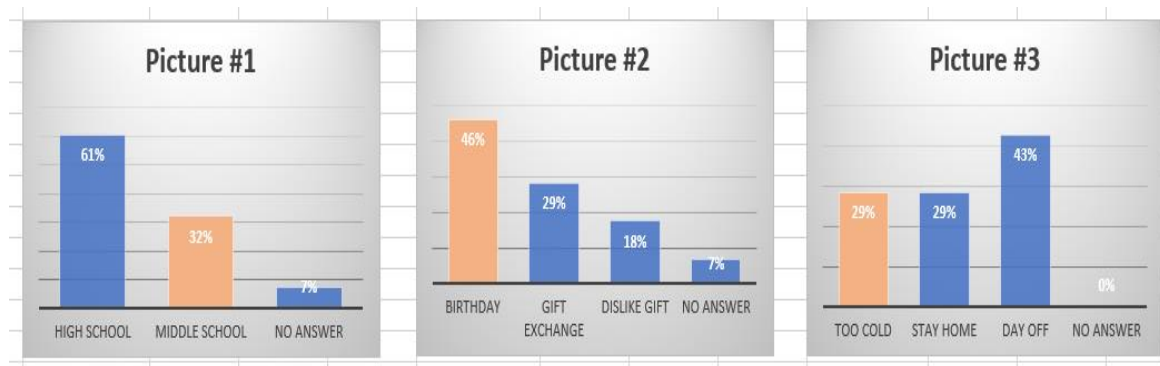


**Figure 14** *Group discussion piloting statistics*

Group discussion validation test using critical thinking and observing tasks, was carried

out according to the lesson plan provided for instructions (See **Appendix L***: **Lesson planning**).

A set of 8 pictures were also presented, and participants were asked to make sound inferences. Figures 15, 16, and 17 show how participants' answers were classified, color-coded, and plotted using histograms for statistical purposes. In figure 15, the whole participants were able to give at least a response according to the pictures. Finally, the yellow bars in figure 17 coincides with exact responses that clearly show a statistically significant increase of 26% in relation to the piloting test.



**Figure 15** *Group discussion validation test*



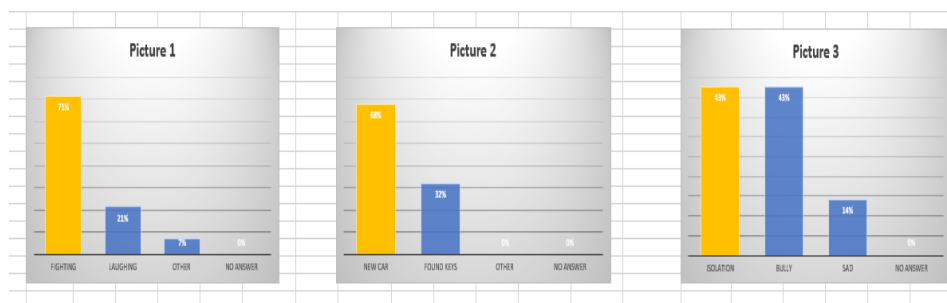**Figure 16** *Images from group discussion validation test*

**Figure 17** *Group discussion validation statistics*

A comparison between correct responses derived from the group discussion during the piloting and validation stages, show that participants improved their inferential skills by the end of the administration of the validation test. Figure 18 shows that six out of eight percentages of responses were accurately answered.
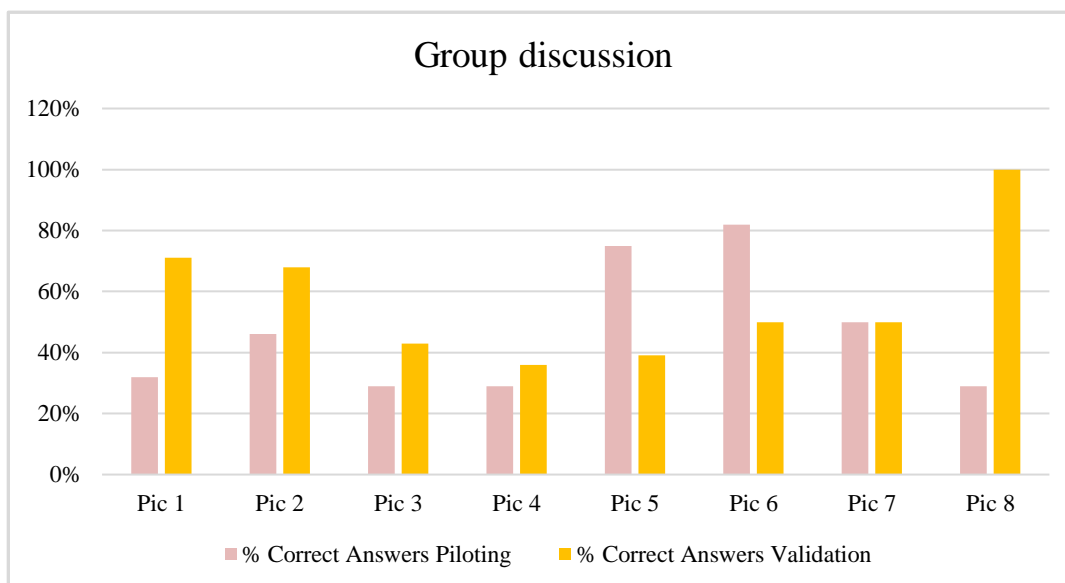


**Figure 18** *Percentage of correct answers concerning group discussion act*

Once participants became acquainted with the use of observations skills, they were encouraged to practice inferencing skills through illustrations displayed on the TOEFL listening section samples to train them for the TOEFL test, since this is the final requirement they must accomplish to graduate from high school (see 1.2.1.1 Overview of the context). Figure 19 shows

a hint of the place where a conversation takes place, giving participants time to think and infer about possible conversations and situations as well as the possibility to look at the conversation script as an aid for differentiated instruction.



**Figure 19** *TOEFL Listening comprehension with illustrations*

Source: https://www.examenglish.com/TOEFL/TOEFL_listening_conversation3.htm

Critical thinking listening activity, was carried out through recording the instructions along with sixteen thought-provoking and brain teaser questions with the aim of either challenging thinking, or provoking thinking outside the box. After listening to each question, participants wrote down their responses on the answer sheet provided by the researcher. Although they seemed to be average questions, they had thorough connotations that raised participants' higher-order thinking skills. Figures 20, 21, and 22 show the type of questions and the possible responses that were classified, color-coded, and plotted using histograms for statistical purposes.

Each participant was assigned a slot to register their answers. Finally, the pink bars in figure 21, and the yellow bars in figure 23 coincides with exact responses. Notice that during the validation test, more accurate responses regarding question #2 slightly increased 7% compared to the piloting test.

| | | s1 | s2 |
|---|---|---|---|
| | **Critical thinking listening activity** | | |
| 1. How many months have 28 days? | | 12 m | 12 m |
| 2. Albert the butcher is 6 feet tall and wears a size 12 shoe. What does he weigh? | | 60 k | 50 k |
| 3. You're driving a bus. At the first stop, 8 people get on. At the second stop, 3 people get off. At the last stop, 2 people get on. How old is the bus driver? | | 40 | |
| 4. What word do the terms work, cook, and check have in common? | | nothing | nothing |
| 5. Which weighs more a pound of salt or a pound of iron? | | no answer | equal |
| 6. A pen and diary together cost $3.50. The diary costs $3.00 more than the pen. How much does the pen cost? | | 50 c | 50 c |
| 7. What word do these words have in common: base, basket, and volley? | | sports | sports |

**Figure 20** *Critical thinking activity piloting test*
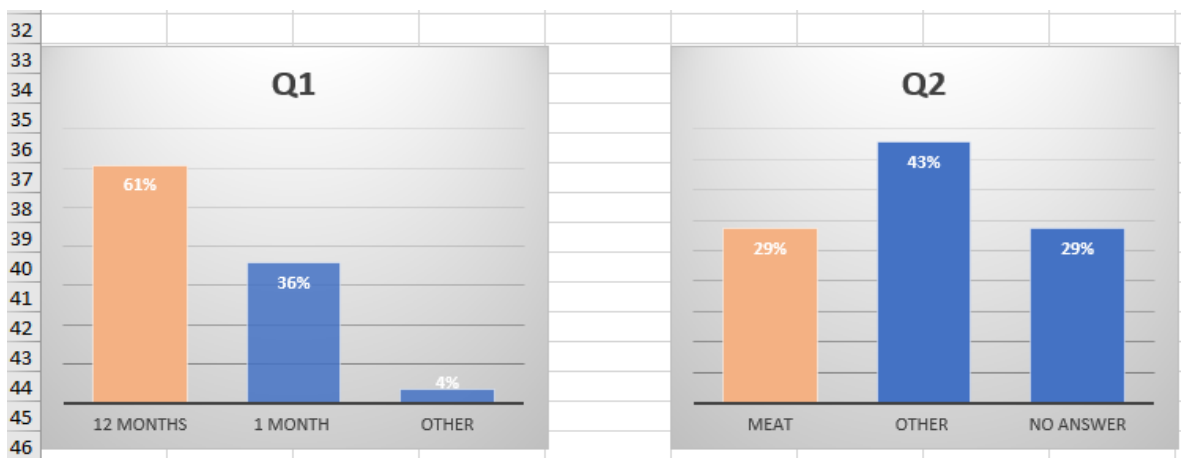
**Figure 21** *Critical thinking activity piloting statistics*

**Figure 22** *Critical thinking activity validation test*
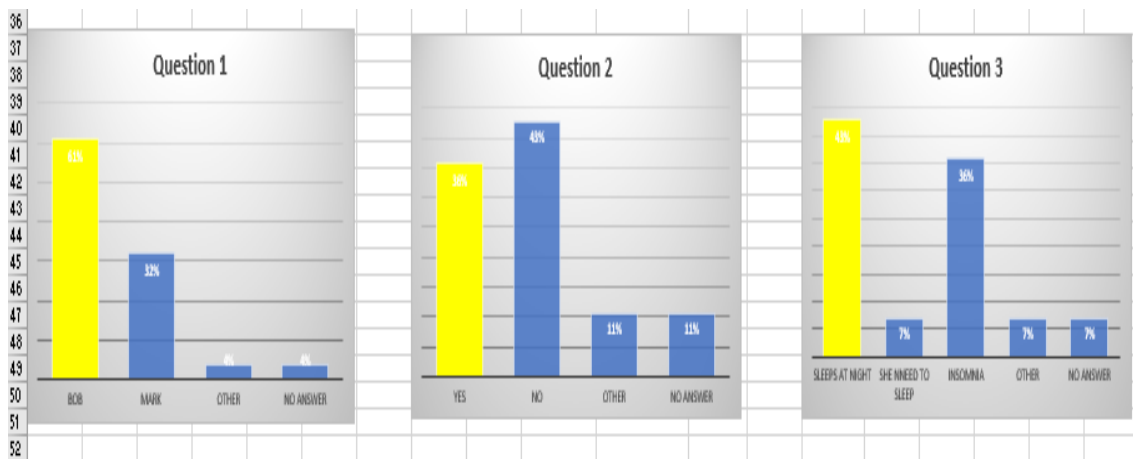


**Figure 23** *Critical thinking activity validation test statistics*

A comparison between correct answers derived from the critical thinking listening activity during the piloting and validation stages, show that participants increased their higher-order thinking skills concerning inferential listening by the end of the administration of the validation test. Figure 24. shows that twelve out of sixteen percentages of responses were accurately answered

**Figure 24** *Percentage of correct answers critical thinking listening activity*

A modified version of the Watson-Glaser appraisal test was adapted to balance the difference between the English language level among participants. Once the initial and final tests were administered, results were graded and recorded in the corresponding slot per participant. Figures 25 and 27 show the distribution of five 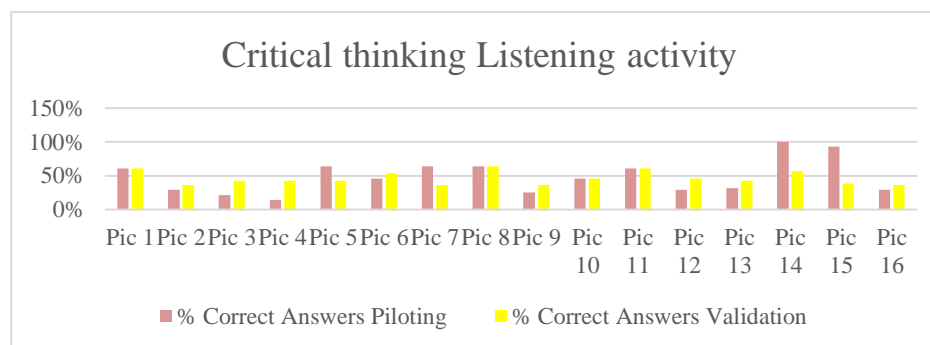possible answers that were classified and plotted using histograms for statistical purposes. Finally, the pink bars in figure 26, and the yellow bars in figure 28 coincide with correct responses. Notice that during the validation test, more accurate responses of questions #1 and #3 increased between 11% and 15% in relation to the piloting test.



| code | Q1 | | | | | Q2 | | | | | Q3 | | | | | Q4 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T | PT | ID | PF | F | T | PT | ID | PF | F | T | PT | ID | PF | F | T | PT | ID | PF | F |
| s1 | | | | 1 | | | | 1 | | | | | | 0 | 1 | | 1 | | | |
| s2 | 1 | | | | | 1 | | | | | | | | | 1 | | | 1 | | |
| s3 | | | | 1 | | | | 1 | | | 1 | | | | | 1 | | | | |
| s4 | 1 | | | | | | 1 | | | | | | | | 1 | | | 1 | | |
| s5 | | | 1 | | | | 1 | | | | 1 | | | | | 1 | | | | |
| s6 | | | | 1 | | | 1 | | 1 | | | | 1 | | | 1 | | | | |
| s7 | | | 1 | | | | | | | | | | | | 1 | 1 | | | | |
| s8 | 1 | | | | | | | 1 | | | 1 | | | | | | | 1 | | |
| s9 | | 1 | | | | | | | 1 | | | | | | 1 | | | | 1 | |
| s10 | 1 | | | | | 1 | | | | | | 1 | | | | 1 | | | | |
| s11 | 1 | | | | | | | 1 | | | | 1 | | | | | | 1 | | |
| s12 | | 1 | | | | | | | 1 | | | 1 | | | | | | | 1 | |
| s13 | 1 | | | | | | 1 | | | | | | | | 1 | 1 | | | | |
| s14 | | 1 | | | | | | 1 | | | 1 | | | | | 1 | | | | |

**Figure 25** *The modified version of Watson-Glaser appraisal piloting test*
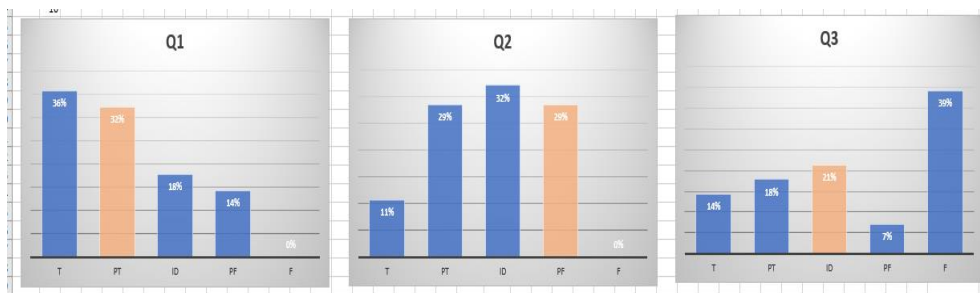
**Figure 26** *The modified Watson-Glaser appraisal piloting test statistics*



**Figure 27** *The modified Watson-Glaser appraisal validation test*
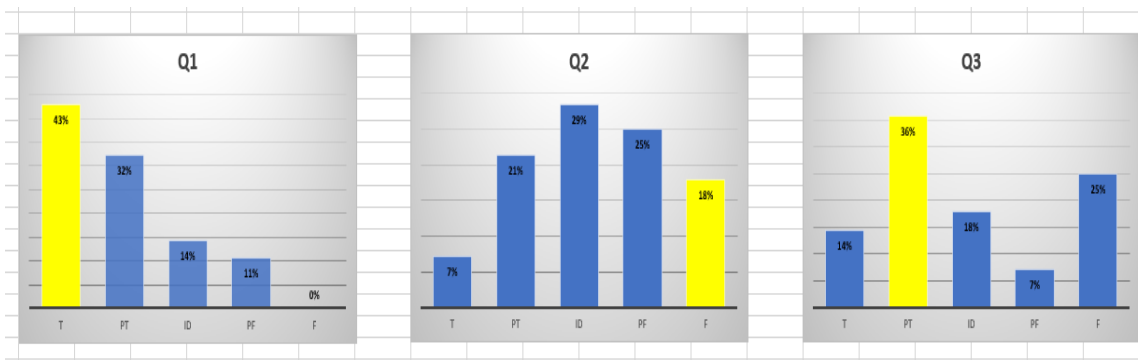


**Figure 28** *The modified Watson-Glaser validation test statistics*

A comparison between correct answers derived from the modified version of the Watson-Glaser appraisal test during the piloting and validation stages, show that participants improved their higher-order thinking skills regarding inferential listening by the end of the administration of the validation test. Figure 29 shows that thirteen out of sixteen percentages of responses were accurately answered
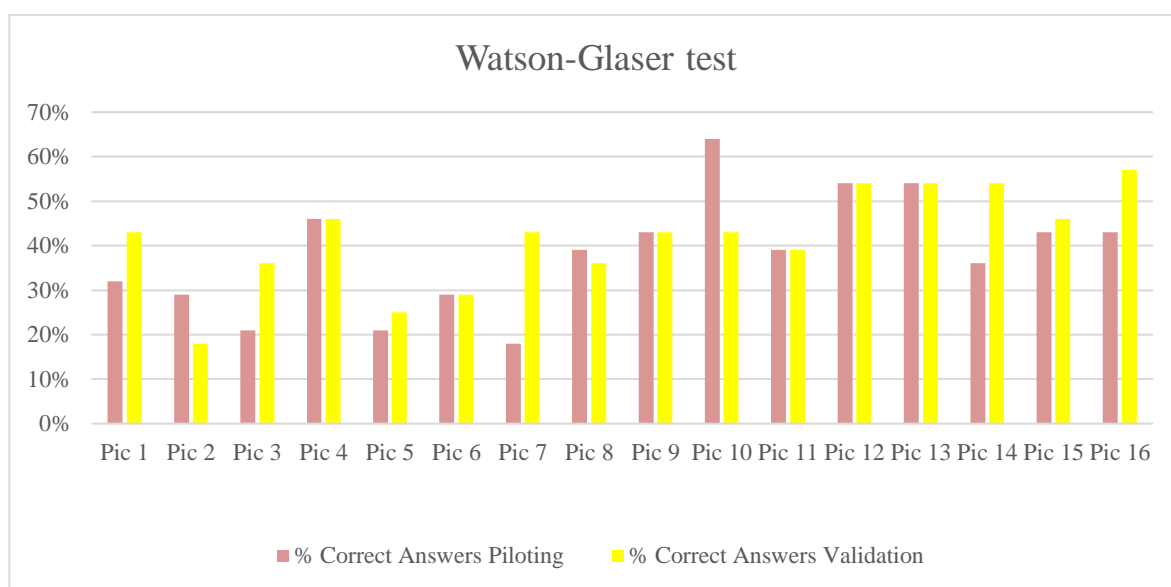


**Figure 29** *Percentage of modified version Watson-Glaser test*

Finally, qualitative data that later became the aforementioned categories were extracted from students' insights and the teacher's journal. Significant hints were key aspects to consider while administering the tests and tasks. Participants acknowledged that the new approach has somehow influenced their listening skills. Furthermore, being a diversified group has given them the ability to learn how to deal with triggering factors through cooperative work as a means to overcome such constraints.

Figures 30 and 31 show a heterogeneous group supported by differentiated instruction, social skills, and scaffolding according to learners' needs. Using the sequence of critical thinking

tasks proved to be a successful strategy that accomplished the researcher's objective. In this

study, when both methods were combined, they granted both an element of authentication, and

the possibility to relate and examine the world from participants' perspectives.



**Figure 30** *Students insights*



**Figure 31** *Teacher's journal*

### 5.3.3   Core category

After scrutinizing and reducing qualitative data collected throughout the coding process,

the researcher identified: "*Observation skills foster the development of inferential listening in L2*

*English language learners*" as the main category which answered the research question of this study. Findings show that by implementing observation skills through visual aids, participants were able to make sound inferences, the researcher could also raise participants' awareness about their listening approach through the regular implementation of inferential abilities. Similarly, the participants acknowledged that inferencing skills imply both instruction and application into their listening process during the focus on the students' world stage and beyond. The fact that students applied inferencing strategies along with cooperative work, scaffolding, and peer-feedback encouraged them to develop different levels of competence in some of the higher-order thinking skills through inferential listening, analysis, and generation of ideas supported by visual aids to improve inferencing routine even in other settings.

## 5.4    Conclusion

The present chapter highlighted the results of the data analysis process, such outcomes were carried out following a quantitative statistical report supported by the grounded theory method. This procedure enabled the researcher to classify, analyze, code-collected data that were subsequently divided into segments for further color-coding during the open coding process, afterward, group the codes into categories during the axial coding phase, to finally consolidate them to draw the core category which answered the research question. Findings showed that Numrich's sequence of critical thinking tasks benefited seventh-grade L2 learners to increase specific skills, since it fostered observation and inferring situations during the pre-listening stage, based upon visual aids.

The participants also became aware of the relevance of paying keen attention during the listening process. Likewise, cooperative work and differentiated instructions were decisive

components to overcome the aforementioned triggering factors, which were the source of the

preliminary listening skills outcomes. The next chapter focuses on the interpretation and

applicability of the results, the limitations identified in the present study, along with suggestions

for further research.

**Chapter 6: Conclusions and Pedagogical Implications**

**6.1    Introduction**

The preceding chapter described how data analysis and findings emerged from data collection instruments. This study examined the role that observation skills of Numrich's sequence of critical thinking tasks for inferential listening played in benefiting L2 seventh-graders during the focus on the students' world stage. Findings evidenced that the sequence of critical thinking tasks approach improved most the participants listening comprehension ability based upon their needs and proficiency levels, for they realized there is a listening process in which they can use a set of strategies to achieve inferential listening goals. Participants also acknowledged the importance of paying particular attention during the listening process. Finally, the contribution of cooperative work and differentiated instruction through scaffolding were necessary due to participants' academic heterogeneity.

Findings in this study are connected to the results of other Colombian researchers (Benavides et al., 2018; Gómez-Rodríguez, 2018) since the use of Numrich's sequence of critical thinking tasks in such studies also contributed to increasing participants' critical thinking skills. This chapter focuses on the pedagogical implications that this research brought to the academic community, its limitations, and any further study.

**6.2    Comparison of results with previous studies' results**

The current research study aimed at examining the influence of Numrich's sequence of critical thinking tasks and inferential listening in a group of 28 participants with different needs and levels of English language proficiency. The results of this study revealed that there was a

positive correlation between critical thinking tasks and inferential listening skills. Findings

suggested that the use of visual aids, critical thinking listening activities, cooperative learning,

differentiated instruction, and scaffolding had an impact on participants' academic and social

achievements through the implementation of critical thinking tasks to make sound inferences.

This conclusion supports findings from different studies in which critical thinking tasks helped

learners to increase listening comprehension (Chang-in, 2008; Nour Mohammadi & Zare, 2015).

Looking for specific clues using visual aids, interpreting relevant details of information to

make inferences, and analyzing and evaluating to make logical conclusions during the discussion

group task, critical thinking listening task, and the appraisal test helped participants with their

inferential listening skills during the three perspectives described by Beaumont (2010) namely

focus on the students' world, focus on the text, and focus beyond the text.

During the first perspective (observing task), participants used visual aids to help them

generate background experiences and infer possible situations. This finding supports previous

research in which background experience was found to be effective in oral language

comprehension that encouraged inference making (Neuman, Kaefer, & Pinkham, 2014). Other

studies have stressed the importance of visual aids before listening to a passage. Bransford and

Johnson (1972) supported the significance of using pictures that provided information about the

context underlying the stimulus passage.

Omaggio (1979) also acknowledged that learners who were provided with appropriate

contextual illustrations during the pre-listening stage had significantly better comprehension and

recall scores than did learners who were not supplied with a context or who were provided with a

context after listening to the passage. Mueller (1980) found that visual aids before treatment

were more effective considering that they served as activators of background knowledge. What is

more, previewing the overall context provided learners to formulate not only accurate

hypotheses, but also heightened learners' interest to pay keen attention to the passage.

During the second perspective (interpreting to make inferences), cognitive processing that

included interpreting information from thought-provoking and brain teaser questions in

association with auditory input were carried with the aim of either challenging thinking, or

provoking thinking outside the box, to raise participants' higher-order thinking skills. Results

derived from this study are endorsed by the fact that listening as an interpretive skill, actively

construct understanding from information input (S.-P. Lee, Lee, Liao, & Wang, 2015). Other

studies have also believed that using brain teaser promote critical thinking (Özkan, 2010).

Participants were asked to join their assigned groups to cooperatively work on their tasks.

Differentiated instruction and scaffolding played an important role during this stage since the

one-size-fits-all approach no longer fits students' needs, preferences, and learning styles.

Landrum and McDuffie (2010), supported the growing emphasis on differentiated instruction as

a relevant variable in heterogeneous classrooms. Previous research in which teachers need to

differentiate instruction and provide students with different avenues of learning to maximize

their learning process is also supported by Beaumont (2010), Bondie and Zusho (2018), Moreno

(2015), Tomlinson (2014). Therefore, there is a good reason why group learning instead of

individualistic goal structure continues to be encouraged in schools across all ages and subject

areas (H. Lee et al., 2016)

During the third perspective (analyzing and evaluating to make logical conclusions), A

modified version of the Watson-Glaser appraisal test, the most popular measure of critical

thinking skills, was adapted to balance the difference between the English language level among participants. Results showed that participants improved their higher-order thinking skills regarding inferential listening. Previous studies conducted by Hassan and Madhum (2007) and Chukwuyenum (2013) also used the Watson Glaser appraisal test to measure learners' critical thinking skills. During this stage, participants were asked to provide peer feedback for reflective learning used in scaffolding. In this case, the presentation of feedback after a test is beneficial to learning because of the spaced presentation of information (Butler, Karpicke, & Roediger, 2007). Studies carried out by Finn and Metcalfe (2010) also support the fact that feedback with scaffolding can be dynamic and flexible, allowing an analysis of such assessment to the knowledge and skills of each student.

## 6.3    Significance of the results

This study contributed to the enhancement of academic and social skills, for it engaged most of the participants in the role of active listening accompanied by critical thinking tasks and cooperative learning with differentiated instruction. In this sense, participants became aware of the importance of aural input, note-taking, visual aids, concentration, and collaborative skills during the implementation of strategies used throughout the listening stages carried out as a focus on the student's world, focus on the text and focus beyond the text. Cho and Reinders (2013), also acknowledge the fact that aural input accompanied by the introduction of visual information such as pictures, highlight certain aspects of the text. This is a core aspect that gives a sense of transcendence to visual support in listening comprehension; helping learners with vocabulary acquisition (Labrie, 2000), especially if these visual aids were presented before listening to the recording (Lévesque, 2013).

**6.4    Pedagogical challenges and recommendations**

Regarding the use of the sequence of critical thinking tasks in inferential listening, the challenge lies in encouraging students to take into consideration its implementation not only in daily life, but also in an academic context. In the present study, this approach took approximately 28 hours to implement the strategy. Some participants were asked to work collaboratively to achieve learning goals along with differentiated instruction. It is suggested to develop a sense of tolerance and reflection upon timing during the task completion along the three stages of this approach. Regarding inferential listening, the challenge lies in scaffolding less advantaged learners to become aware of the hints found in visual aids to infer possible situations in an aural context.

One way that has developed critical thinking is through thought-provoking and brain teaser questions with the aim of either challenging thinking, or provoking thinking outside the box, since they activate background knowledge and connects it with interpretation and inferences between what is known and what is new. Participants of this study acknowledged that they were not acquainted to use visual aids, nor were they good listeners or note-takers. They were exposed to some input during the while-listening and post-listening stages, yet they were not exposed to activating their background knowledge to support listening comprehension tasks.

Results gathered in the present study demonstrated that the incorporation of observation as a support during the first stage described by Beaumont (2010) as the focus on the students' world of Numrich's sequence of critical thinking tasks, had a positive influence on participants' inferential listening. Furthermore, the researcher considered rigorous scaffolding, training, extra activities for differentiated instruction, and modeling processes in collaborative work to promote

the use of background knowledge on the vehicle language, more effective learning of new vocabulary, a more meaningful understanding of aural input, besides giving participants with special needs the possibility of looking at the script of the conversation as an aid for differentiated instruction.

These teaching processes have allowed learners to get acquainted with visual aids in aural input based upon individual preferences and needs. Thus, it is crucial to allow learners to interact and familiarize themselves with a given task to create an atmosphere of confidence and motivation before they embark on their listening comprehension task.

The exposure to group discussion implies developing a process of evaluation and feedback to guide the effectiveness of their usage. For example, if visual aids are intended to foster inferential listening, it is necessary to provide feedback on the information students have listened to. In addition, this process has to be accompanied by analyzing and evaluating; this means that learners need to have time to brainstorm and explore possible conversations situations and information to make sound inferences.

The development of observation skills can be supported by selecting familiar, realistic, and debatable topics which to think further. If the issue is engaging and perhaps personal to them or their interests, they will be more enthusiastic about finding information that is implied in an aural text, this aspect allows learners to hold and express different views of the same issue while having alternatives to consider. These aspects grant learners the possibility to be better able to present a standpoint and provide support from their point of view.

**6.5      Research limitations on the present study**

Throughout the study, the researcher was able to identify the main limitation that

interfered with the appropriate development of the research project. Although participants

benefited from the implemented strategies, two participants were reluctant to follow

differentiated instructions as they were discouraged when tested with a lower learning task, while

other B1 learners were unable to cooperate with supportive environments. To motivate

participants with differentiated instruction, the researcher monitored and scaffolded their tasks

regularly, so they could provide their modest opinion about their progress. These participants

were also included in the data analysis to encourage them to contribute to the study.

Lack of time was the second limitation. First of all, the implementation was carried out

during the final exams and beyond the end of the school year. This led to some discomfort

among students who were not asked to remain in school for academic reinforcement. Participants

had to make an extra effort to complete the administration of the validation tests. The strictness

of the curriculum and time management also challenged the researcher during the

implementation of the study.

Furthermore, the time invested in the pedagogical implementation lasted only two months

which was insufficient to enable the researcher to implement more listening strategies; thus, the

listening strategies: Observing, note-taking, making inferences from pictures, analyzing, making

logical conclusions along with differentiated instruction, were chosen given the heterogeneity of

the group, allowing them to approach the general idea and specific information of a given text

for a task completion based upon individual needs. Additionally, the researcher required more

work during lesson planning and differentiated lesson planning that required extra time in the schedule.

## 6.6     Further research

The present study aims to analyze and report how seventh-grade participants' performance and attitudes towards listening comprehension are influenced after using a sequence of critical thinking tasks during the training and administration of the tasks related to listening material accompanied by group discussions, dictation, note-taking, and visual aids such as images, flashcards, and short silent videos. The implementation of these classroom materials was carried out to enhance and promote a better environment of listening comprehension despite classroom conditions described in the needs analysis where learners are exposed to several triggering factors that delay the progress in students with special needs.

The results of this study suggest that the researcher needs to conduct a longer study with more time devoted to the pedagogical implementation, especially when working with differentiated instruction and inferencing tasks. This study also needed a longer time to train students in peer-feedback when working collaboratively as it facilitates students' listening awareness. Likewise, it is recommended to carry out a study where participants can deepen critical thinking skills through different aural and visual texts and make their interventions more meaningful during classes. Even though the critical thinking task approach, scaffolded activities, and peer-feedback demonstrated to benefit students' L2 inferential listening comprehension, further research is needed to inquire into their outcome in other areas such as listening for gist or listening for specific information as a compound of higher-order thinking skills.

On the other hand, profusely illustrated aids with line drawings and diagrams were not considered, since participants with special needs found them extremely challenging to extract information and infer possible situations. The researcher needed extra time and effort to adapt different types of visual aids to use them effectively to cover special needs.

**6.7    Conclusion**

A heterogeneous group of twenty-eight participants has played an important role in this study. These twenty-first-century learners demand the ability to use higher-order thinking skills to listen in a target language and extract inferred information in oral language. In this sense, learners must have a competent level of listening comprehension to accomplish not only academic development, but also professional goals. Accordingly, the present research analyzed the contribution of a set of strategies and the impact on critical thinking tasks related to the implementation of visual aids, note-taking, cooperative learning, and differentiated instruction to improve inferential listening comprehension of seventh-graders of a Colombian bilingual school.

Furthermore, addressing learners' needs is one step toward overcoming boundaries of English oral communication among English language learners. Studies in differentiated instruction have shown that for an adequate language instruction, teachers should allow learners flexibility and enough time to implement strategies such as grouping students according to their learning needs (Y.-T. Yang et al., 2013). Similarly, the lack of authentic interaction in a second language, teacher-centered instruction, and learners' heterogeneity are three key obstacles found in traditional teaching.

Findings in this study, demonstrate that listening strategies enhance inferential skills through the observation of visual aids and information extracted from a text using a sequence of

critical thinking tasks. These strategies were useful to improve learners' listening comprehension, besides helping them to achieve soft skills such as collaborative work. Moreover, it was found that effective use of the differentiated instruction approach with short silent videos carefully selected promoted inferential skills through visual aids and other visual resources that granted learners with special needs the opportunity to get ready before the task. Therefore, the use of critical thinking tasks to supporting aural input, learner-centered pedagogy, and appropriate scaffolding of learners of a target language has received a great deal of attention from this research.

In sum, this study provided evidence of the contributions of learning inferential abilities in listening comprehension at a secondary level, through the implementation of Numrich´s sequence of critical thinking tasks as it trains learners' critical thinking so that they can have a better performance not only by the time they take the TOEFL exam as a requirement to graduate from high school, but also in their professional lives. The results of this study show an innovative approach that can be implemented in the classroom to improve inferential listening at any proficiency level from preschool to eleventh grade.

## References

Afifuddin, M. (2017). Engaging literary competence through critical literacy in an EFL setting. *Advances in Social Science, Education and Humanities Research*, *82*, 131–134. Retrieved from http://creativecommons.org/licenses/by-nc/4.0/

Aghaei, K., & Rad, E. M. (2018). On the interconnection between Bloom's critical thinking taxonomy & listening comprehension performance of Iranian EFL learners . *International Journal of English Language & Translation Studies*, *6*(3), 22–31. Retrieved from http://www.eltsjournal.org/archive/value6 issue3/3-6-3-18.pdf

Alonso, L. (1996). *Improving deficient listening skills in the language classroom*. Saint Xavier University. https://doi.org/ED419696

Alrawashdeh, A. I., & Al-zayed, N. N. (2017). Difficulties that English teachers encounter while teaching listening comprehension and their attitudes towards them. *English Language Teaching*, *10*(5), 167–178. https://doi.org/10.5539/elt.v10n5p167

Altricher, H., Posch, P., & Somekh, B. (2005). *Teachers investigate their work: An introduction to the methods of action research*. (Routledge, Ed.) (5th ed). New York, NY. https://doi.org/10.4324/9780203978979

Amer, A. (2006). Reflections on Bloom's revised taxonomy. *Electronic Journal of Research in Educational Psychology*, *4*(1), 213–230. Retrieved from https://www.researchgate.net/publication/252499155_Reflections_on_Bloom's_Revised_Taxonomy

Anderson, L. (2002). Curricular realignment: A re-examination. *Theory Into Practice*, *41*(4), 255–260. https://doi.org/https://doi.org/10.1207/s15430421tip4104_9

Anhalt, K., McNeil, C., & Bahl, A. (1998). The ADHD Classroom Kit: A whole-classroom

approach for managing disruptive behavior. *Psychology in the Schools*, *35*(1), 67–79.

https://doi.org/http://dx.doi.org/10.1002/(SICI)1520-6807(199801)35:1<67::AID-

PITS6>3.0.CO;2-R

Astleitner, H. (2002). Teaching critical thinking online. *Journal of Instructional Psychology*,

*29*(2), 53–76. Retrieved from

http://www.u.arizona.edu/~rgolden/teachingCriticalThinking.pdf

Avanzas, P., Bayes-Genis, A., Pérez de Isla, L., Sanchis, J., & Heras, M. (2011). Ethical

considerations in the publication of scientific articles. *Revista Española de Cardiología

(English Edition)*, *64*(5), 427–429. https://doi.org/10.1016/j.rec.2011.02.005

Avison, D., Lau, F., Myers, M., & Nielsen, P. (1999). Action research. *Communications of the

ACM*, *42*(1), 94–97. https://doi.org/10.1145/291469.291479

Azadi, A. A., Zare, Z., & Khorram, A. (2015). The relationship between the critical thinking

ability and the listening strategies of Iranian EFL learners. *International Journal of

Educational Investigations*, *2*(6), 32–47. Retrieved from

http://www.ijeionline.com/attachments/article/43/IJEI_Vol.2_No.6_2015-6-04.pdf

Babel, M., & Russell, J. (2015). Expectations and speech intelligibility. *The Journal of the

Acoustical Society of America*, *137*(5), 2823–2833. https://doi.org/10.1121/1.4919317

Bailey, K. (1990). The use of diary studies in teacher education programs. In J. Richards & D.

Nunan (Eds.), *Second language teacher education* (p. 370). Cambridge, UK: Cambridge

University Press.

Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999). Conceptualizing critical thinking.

*Journal of Curriculum Studies*, *31*(3), 285–302. https://doi.org/10.1080/002202799183133

Baker, C. (2011). *Foundations of bilingual education and bilingualism* (5th ed). New York, NY: Multilingual Matters.

Barjesteh, H., & Vaseghi, R. (2012). Critical thinking : A reading strategy in developing English reading comprehension performance. *Sheikhbahaee EFL Journal*, *1*(2), 21–34. Retrieved from http://shbu.ac.ir/efl/efl2/2.pdf

Barócsi, S. (2007). The role of observation in professional development in foreign language teacher education. *WoPaLP*, *1*, 125–144. Retrieved from http://langped.elte.hu/WoPaLParticles/W1Barocsi.pdf

Barr, L., Dittmar, M., Roberts, E., & Sheraden, M. (2002). *Enhancing student achievement through the improvement of listening skills*. Saint Xavier University. Retrieved from https://files.eric.ed.gov/fulltext/ED465999.pdf

Beaumont, J. (2008). *Northstar 1 Reading and writing*. (C. Numrich & F. Boyd, Eds.) (2nd ed). Upper Saddle River, NJ: Pearson Education.

Beaumont, J. (2010). A sequence of critical thinking tasks. *TESOL Journal*, *1*(4), 427–448. https://doi.org/10.5054/tj.2010.234763

Bell, J. (2005). *Doing your research project: A guide for first-time researchers in education, health and social science* (4th ed.). New York, NY: Open University Press. Retrieved from http://elearning.ufl.udn.vn/home/esp/pluginfile.php/3274/mod_resource/content/1/Judith Bell - Doing_Your_Research_Project.pdf

Benade, L. (2015). Teachers' critical reflective practice in the context of twenty-first century learning. *Open Review of Educational Research*, *2*(1), 42–54.

https://doi.org/10.1080/23265507.2014.998159

Benavides, N., Cantillo, E., & Mogollón, L. (2018). *A syllabus proposal to develop critical thinking skills through literature circles*. Corporación Universitaria Minuto de Dios. Retrieved from

https://repository.uniminuto.edu/bitstream/handle/10656/7602/TEXT_BenavidesHernandez NataliaAndrea_2018.pdf?sequence=1&isAllowed=y

Bennett, D. (2012). Cracks in Bloom's taxonomy at 60. In *2012 2nd International Conference on Arrangement and Artificial Intelligence* (pp. 109–114). Singapore: IACSIT Press. Retrieved from http://www.ipedr.com/vol35/022-ICMAI2012-M20050.pdf

Berends, M., & Garet, M. (2002). In (Re)search of evidence-based school practices: Possibilities for integrating nationally representative surveys and randomized field trials to inform educational policy. *Peabody Journal of Education*, *77*(4), 28–58. https://doi.org/10.1207/s15327930pje7704_3

Blazar, D., & Kraft, M. (2017). Teacher and teaching effects on students attitudes and behaviors. *Educational Evaluation and Policy Analysis*, *39*(1), 146–170. https://doi.org/10.3102/0162373716670260

Bloom, B., Engelhart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals*. (B. Bloom, Ed.) (Longmans). New York, NY: Green.

Bondie, R., & Zusho, A. (2018). *Differentiated instruction made practical*. *Differentiated Instruction Made Practical*. New York, NY: Routledge. https://doi.org/10.4324/9781351248471

Borg, S. (2001). The research journal: A tool for promoting and understanding researcher development. *Language Teaching Research*, *5*(2), 156–177. https://doi.org/https://doi.org/10.1177/136216880100500204

Bostrom, R. N., & Waldhart, E. S. (1988). Memory models and the measurement of listening. *Communication Education*, *37*(1), 1–13. https://doi.org/10.1080/03634528809378699

Bransford, J., & Johnson, M. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Verbal Behaviour*, *11*, 717–726. Retrieved from https://msu.edu/~ema/802/Ch6-Memory/2/BransfordJohnson72.pdf

Brown, G., & Yule, G. (1983). Introduction: Linguistic forms and functions. In *Discourse Analysis* (pp. 1–26). New York: Cambridge University Press.

Burns, A. (2015). Action research. In J. Brown & C. Coombe (Eds.), *The Cambridge Guide to Research in Language Teaching and Learning* (first ed). Cambridge, UK: Cambridge University Press. Retrieved from https://www.researchgate.net/publication/282199978_Action_research

Butler, A., Karpicke, J., & Roediger, H. (2007). The effect of type and timing of feedback on learning from multiple-choice tests. *Journal of Experimental Psychology: Applied*, *13*(4), 273–281. https://doi.org/10.1037/1076-898X.13.4.273

Butterworth, J., & Thwaites, G. (2013). *Thinking skills: Critical thinking and problem solving* (Second edi). New York, NY: Cambridge Univesity Press. Retrieved from http://assets.cambridge.org/97811076/06302/excerpt/9781107606302_excerpt.pdf

Cain, K., Lemmon, K., & Oakhill, J. (2004). Individual differences in the inference of word

meanings from context: The influence of reading comprehension, vocabulary knowledge,

and memory capacity. *Journal of Educational Psychology*, *96*(4), 671–681.

https://doi.org/10.1037/0022-0663.96.4.671

Carvajal, N., Poveda, F., & Rojas, A. (2012). Didactic unit design using critical thinking: A way

to improve your skills. *Enletawa Journal*, *5*, 7–20. Retrieved from

https://www.researchgate.net/publication/274312859_Didactic_Unit_Designed_Using_Criti

cal_Thinking_A_way_to_improve_your_skills

Çavdar, G., & Doe, S. (2012). Learning through writing: Teaching critical thinking skills in

writing assignments. *PS: Political Science and Politics*, *45*(2), 298–306. Retrieved from

http://www.jstor.org/stable/41433696

CEFR. (2011). *Common European framework of reference for language: Learning, teaching,*

*assessment*. Cambridge, UK: Cambridge University Press.

https://doi.org/10.1142/s0219498810003951

Chang-in, L. (2008). Inferencing strategy for vocabulary learning and listening comprehension.

*The Linguistic Association of Korea Journal*, *16*(4), 25–42.

https://doi.org/10.1017/CBO9781107415324.004

Cho, M., & Reinders, H. (2013). The effects of aural input enhancement on L2 acquisition. In J.

Bergsleithner, S. Frota, & J. Yoshioka (Eds.), *Noticing and second language acquisition:*

*Studies in honor of Richard Schmidt* (pp. 133–148). Honolulu: University of Hawaii,

National Foreign Language Resource Center. Retrieved from

http://130.217.226.8/bitstream/handle/10652/2393/book chapter - 2013 - Cho and Reinders

Input Enhancement.pdf?sequence=1

Chukwuyenum, A. (2013). Impact of critical thinking on performance in mathematics among

senior secondary school students in Lagos state. *Journal of Research & Method in

Education*, *3*(5), 18–25. https://doi.org/10.9790/7388-0351825

Clark, T. (1999). Sharing the importance of attentive listening skills. *Journal of Management

Education*, *23*(2), 216–223. https://doi.org/10.1177/105256299902300211

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). New

York, NY: Routledge. https://doi.org/10.1145/3202185.3205872

Corbin, J., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative

criteria. *Qualitative Sociology*, *13*(1), 3–21. Retrieved from https://med-fom-familymed-

research.sites.olt.ubc.ca/files/2012/03/W10-Corbin-and-Strauss-grounded-theory.pdf

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for

developing grounded theory* (4th ed). Thousand Oaks, CA: Sage Publications, Inc.

Retrieved from http://www.ghbook.ir/index.php?name=&lang=fa

Córdoba, E. (2016). Implementing task-based language teaching to integrate language skills in

an EFL program at a Colombian university. *Profile*, *18*(2), 13–27.

https://doi.org/10.15446/profile.v18n2.49754

Council of Europe. (2011). *Common European framework of reference for languages: Learning,

teaching, assessment*. Strasbourg, France: Cambridge University Press.

https://doi.org/10.1093/elt/cci105

Creswell, J. (2002). *Educational research: Planning, conducting, and evaluating quantitative*.

Upper Saddle River, NJ: Prentice Hall.

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*.

(V. Knight, Ed.) (4th ed.). Thousand Oaks, CA: Sage Publications, Inc. Retrieved from

https://www.researchgate.net/file.PostFileLoader.html?id...assetKey...

Creswell, J., Klassen, A., Plano, V., & Clegg, K. (2011). *Best practices for mixed methods*

*research in the health science*. *National Institutes of Health 2013*. Bethesda, Maryland.

Retrieved from

http://www2.jabsom.hawaii.edu/native/docs/tsudocs/Best_Practices_for_Mixed_Methods_

Research_Aug2011.pdf

Creswell, J., & Plano, V. (2011). *Designing and conducting mixed methods research* (2nd ed).

Los Angeles: Sage Publications, Inc.

Darti, & Asmawati, A. (2017). Analyzing students' difficulties toward listening comprehension.

*ETERNAL (English, Teaching, Learning and Research Journal)*, *3*(2), 206–220.

https://doi.org/10.24252/eternal.v32.2017.a9

de Leon-Abao, E. (2014). Teachers' instructional competence on students' comprehension skills

and critical thinking ability. *Open Journal of Social Sciences*, *2*, 334–339.

https://doi.org/10.4236/jss.2014.24037

Den Brok, P., Brekelmans, M., & Wubbels, T. (2006). Multilevel issues in research using

students' perceptions of learning environments: The case of the questionnaire on teacher

interaction. *Learning Environments Research*, *9*(3), 199–213.

https://doi.org/10.1007/s10984-006-9013-9

Desimone, L., & Le Floch, K. (2007). Are we asking the right questions? Using cognitive

interviews to improve surveys in education research. *Educational Evaluation and Policy*

*Analysis*, *26*(1), 1–22. https://doi.org/10.3102/01623737026001001

Devine, T. (1962). Critical thinking in the English class. *Peabody Journal of Education*, *39*(6), 359–365. Retrieved from http://www.jstor.org/stable/40033091.

Dirven, R., & Oakeshott-Taylor, J. (1984). Listening comprehension (Part I). *Language Teaching*, *17*, 326–343. https://doi.org/10.1017/S026144480001082X

Dörnyei, Z., & Csizér, K. (2011). How to design and analyze surveys in second language acquisition research. In A. Mackay & S. Gass (Eds.), *Research methods in second language acquisition: A practical guide* (pp. 74–94). Malden, MA: Wiley-Blackwell. Retrieved from https://docs.wixstatic.com/ugd/ba734f_15befe78b7d14cc1b78b2e1b64585378.pdf?index=true

Doyle, L., Brady, A. M., & Byrne, G. (2016). An overview of mixed methods research. *Journal of Research in Nursing*, *21*(8), 623–635. https://doi.org/10.1177/1744987116674257

Dunkel, P. (1991). Listening in the native and second/foreign language: Toward an integration of research and practice. *TESOL Quarterly*, *25*(3), 431–457. https://doi.org/10.2307/3586979

DuPaul, G., & Weyandt, L. (2006). School-based intervention for children with attention deficit hyperactivity disorder: Effects on academic, social, and behavioural functioning. *International Journal of Disability, Development and Education*, *53*(2), 161–176. https://doi.org/10.1080/10349120600716141

Economic and Social Research Council (ESRC). (2015). *ESRC framework for research ethics*. *Economics and Social Research Council*. https://doi.org/10.1109/ROBIO.2016.7866465

Elekaei, A., Faramarzi, S., & Tabrizi, H. (2016). Autonomy, critical thinking and listening comprehension ability of Iranian EFL learners. *International Journal of Applied Linguistics and English Literature*, *5*(2), 47–59. https://doi.org/10.7575/aiac.ijalel.v.5n.2p.40

Ellickson, P., & Hawes, J. (1989). An assessment of active versus passive methods for obtaining

parental consent. *Evaluation Review*, *13*(1), 45–55. Retrieved from

https://journals.sagepub.com/doi/abs/10.1177/0193841X8901300104

Engin, M. (2011). Research diary: A tool for scaffolding. *International Journal of Qualitative

Methods*, *10*(3), 296–306. https://doi.org/10.1177/160940691101000308

Ennis, R. H. (1993). Critical thinking assessment. *Theory Into Practice*, *32*(3), 179–186.

https://doi.org/10.1080/00405849309543594

Faragher, L. (2014). Exploring evidence of higher order thinking skills in the writing of first year

undergraduates. *The International Journal of the First Year in Higher Education*, *5*(2), 33–

44. https://doi.org/10.5204/intjfyhe.v5i2.230

Feyten, C. (1991). Listening ability: An overlooked dimension of foreign language acquisition.

*The Modern Language Journal*, *75*(2), 173–180. https://doi.org/DOI: 10.2307/328825

Field, J. (1998). Skills and strategies: Towards a new methodology for listening. *ELT Journal*,

*52*, 110–118. https://doi.org/10.1093/elt/52.2.110

Field, J. (2000). 'Not waving but drowing': A reply to Tony Ridgway. *ELT Journal*, *54*(2), 186–

195. https://doi.org/10.1093/elt/54.2.186

Fink, A. S. (2000). The role of the researcher in the qualitative research process. A potential

barrier to archiving qualitative data. *Forum: Qualitative Social Research*, *1*(3), 1–11.

Retrieved from https://tidsskrift.dk/outlines/article/view/2098/1862

Finn, B., & Metcalfe, J. (2010). Scaffolding feedback to maximize long-term error correction.

*Memory and Cognition*, *38*(7), 951–961. https://doi.org/10.3758/MC.38.7.951

Fisher, D., Fraser, B., & Cresswell, J. (1995). Using the "questionnaire on teacher interaction" in

the professional development of teachers. *Australian Journal of Teacher Education*, *20*(1), 8–18. https://doi.org/http://dx.doi.org/10.14221/ajte.1995v20n1.2

Florit, E., Roch, M., & Levorato, M. C. (2011). Listening text comprehension of explicit and implicit information in preschoolers: The role of verbal and inferential skills. *Discourse Processes*, *48*(2), 119–138.

https://doi.org/http://dx.doi.org/10.1080/0163853X.2010.494244

Fogarty, R. (1991). Ten ways to integrate curriculum. *Educational Leadership*, 61–65. Retrieved from http://webmedia.jcu.edu/cas/files/2014/09/Fogarty-Ten-Ways-to-Integrate-Curriculum.pdf

Freeman, D. (1998). *Doing teacher research: From inquiry to understanding*. New York, NY: Heinle & Heinle Publishers.

Funk, H. D., & Funk, G. D. (1989). Guidelines for developing listening skills. *The Reading Teacher*, *42*(9), 660–663. Retrieved from http://www.jstor.org/stable/20200270

Furst, E. (1994). Bloom's taxonomy: Philosophical and educational issues. In L. Anderson & L. Sosniak (Eds.), *Bloom's taxonomy: A forty-year Retrospective* (pp. 28–40). Chicago, IL: The National Society for the Study of Education.

Garcia, E., Gómez, Y., & Molina, M. (2013). *Critical thinking skills training following Bloom`s taxonomy*. Universidad de la Sabana. https://doi.org/10.1590/S0124-00642012000800004

Garrett, R., & Steinberg, M. (2015). Examining teacher effectiveness using classroom observation scores: Evidence from the randomization of teachers to students. *Educational Evaluation and Policy Analysis*, *37*(2), 224–242. https://doi.org/10.3102/0162373714537551

Garzón, E., & Acuña, L. (2016). Integración de los proyectos transversales al currículo: Una propuesta para enseñar ciudadanía en ciclo inicial. *Actualidades Investigativas En Educación*, *16*(3), 1–26. https://doi.org/10.15517/aie.v16i3.26065

Geertsen, H. (2003). Rethinking thinking about higher-level thinking. *Teaching Sociology*, *31*(1), 1–19. Retrieved from https://www.jstor.org/stable/3211421

Gelder, T. (2005). Teaching critical thinking: Some lessons from cognitive science. *College Teaching*, *53*(1), 41–48. https://doi.org/10.3200/CTCH.53.1.41-48

Gilakjani, A. P., & Sabouri, N. B. (2016). Learners' listening comprehension difficulties in English language learning: A literature review. *English Language Teaching*, *9*(6), 123–133. https://doi.org/10.5539/elt.v9n6p123

Gilbert, M. B. (1988). Listening in school: I know you can hear me-but are you listening? *The International Journal of Listening*, *2*(1), 121–132. https://doi.org/10.1080/10904018.1988.10499102

Gokhale, A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*, *7*(1), 22–30. https://doi.org/10.21061/jte.v7i1.a.2

Gómez-Rodríguez, L. F. (2018). Implementing critical thinking tasks to fostering English learners' intercultural communicative competence in a genre-based learning environment. *English Language Teaching*, *11*(12), 154–165. https://doi.org/10.5539/elt.v11n12p154

Graham, S. (2006). Listening comprehension: The learners' perspective. *System*, *34*(2), 165–182. https://doi.org/10.1016/j.system.2005.11.001

Graham, S. (2011). Self-efficacy and academic listening. *Journal of English for Academic Purposes*, *10*, 113–117. https://doi.org/10.1016/j.jeap.2011.04.001

Graham, S. (2017). Research into practice: Listening strategies in an instructed classroom

setting. *Language Teaching*, *50*(1), 107–119. https://doi.org/10.1017/S0261444816000306

Graham, S., & Macaro, E. (2008). Strategy instruction in listening for lower-intermediate

learners of French. *Language Learning*, *58*(4), 747–783. https://doi.org/10.1111/j.1467-

9922.2008.00478.x

Greenbank, P. (2003). The role of values in educational research: The case for reflexivity. *British

Educational Research Journal*, *29*(6), 791–801.

https://doi.org/10.1080/0141192032000137303

Greene, J., & Lee, Y.-J. (2007). The predictive validity of an ESL placement test: A mixed

methods approach. *Journal of Mixed Methods Research*, *1*(4), 366–389.

https://doi.org/10.1177/1558689807306148

Guo, J. (2015). Inference-making and linguistic skills in listening comprehension: An

observation of French students learning Chinese. *Electronic Journal of Foreign Language

Teaching*, *12*(1), 318–331. Retrieved from http://e-flt.nus.edu.sg/v12s12015/guo.pdf

Guthrie, J. ., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P.

D. Mosenthal, Pearson, & B. R. (Eds.), *Handbook of reading research*. New York, NY:

Longman.

Halpern, D. F. (1999). Teaching for critical thinking: Helping college students develop the skills

and dispositions of a critical thinker. *New Directions for Teaching and Learning*, *80*, 69–75.

https://doi.org/https://doi.org/10.1002/tl.8005

Hambleton, R., & Kanjee, A. (1995). Increasing the validity of cross-cultural assessments: Use

of improved methods for test adaptations. *European Journal of Psychological Assessment*,

*11*(3), 147–157. https://doi.org/10.1027/1015-5759.11.3.147

Hamouda, A. (2013). An investigation of listening comprehension problems encountered by

Saudi students in the EL listening classroom. *International Journal of Academic Research*

*in Progressive Education and Development*, *2*(2), 113–155. Retrieved from

hrmars.com/admin/pics/1882.pdf

Han, S., & Brown, T. (2013). Effects of critical thinking intervention for early childhood teacher

candidates. *The Teacher Educator*, *48*, 110–127.

https://doi.org/10.1080/08878730.2012.760699

Hassan, K., & Madhum, G. (2007). Validating the Watson Glaser critical thinking appraisal.

*Higher Education*, *54*(3), 361–383. https://doi.org/10.1007/s10734-006-9002-z

Heale, R., & Forbes, D. (2013). Understanding triangulation in research. *Evidence-Based*

*Nursing*, *16*(4), 98. https://doi.org/10.1136/eb-2013-101494

Henao, C. (2013). *The inclusion of bottom up and top down strategies in listening*

*comprehension tasks for second semester students from an English licenciatura programa*.

Universidad tecnológica de Pereira. Retrieved from

repositorio.utp.edu.co/dspace/handle/11059/3637

Hine, G. (2013). The importance of action research in teacher education programs. *Issues in*

*Educational Research*, *23*(2), 151–163. https://doi.org/10.1519/JSC.0b013e3181b3f91e

Honebein, P. (1996). Seven goals for the design of constructivist learning environments. In B. G.

Wilson (Ed.), *Constructivist learning environments: Case studies in instructional design*

(pp. 11–24). Englewood Cliffs: Educational Technology Publication. Retrieved from

http://studentcenteredlearning.pbworks.com/f/DesignConstructivistHonebein.pdf

Ingvalson, E. M., Lansford, K. L., Federova, V., & Fernandez, G. (2017). Listeners' attitudes toward accented talkers uniquely predicts accented speech perception. *The Journal of the Acoustical Society of America*, *141*, 234–238. https://doi.org/10.1121/1.4977583

Irvine, J. (2017). A comparison of revised Bloom and Marzano's new taxonomy of learning. *Research in Higher Education Journal*, *33*, 1–16. Retrieved from http://www.aabri.com/rhej.html

Ivankova, N., & Wingo, N. (2018). Applying mixed methods in action research: Methodological potentials and advantages. *American Behavioral Scientist*, *62*(7), 1–20. https://doi.org/10.1177/0002764218772673

Jeevanantham, L. S. (2005). Why teach critical thinking? *African Education Review*, *2*(1), 118–129. https://doi.org/http://dx.doi.org/10.1080/18146620508566295

Johnson, A. (2012). *Introduction to action research* (4th ed.). Boston,MA: Minnesota State University. https://doi.org/10.7748/paed2009.03.21.2.30.c6916

Kaiser, K. (2009). Protecting respondent confidentiality in qualitative research. *Qualitative Health Research*, *19*(11), 1632–1641. https://doi.org/10.1177/1049732309350879

Kakavand, M. (2013). The relationship between Iranian intermediate EFL learners' listening comprehension ability and their critical thinking skills. *Journal of Teaching English Language Studies*, *1*(4), 38–61. Retrieved from http://journals.iau.ir/article_533268_10170740d1eab2ece8cfc49adaf2e0bc.pdf

Karbalaei, A. (2012). Critical thinking and academic achievement. *Ikala, Revista de Lenguaje y Cultura*, *17*(2), 121–128. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/0022027900220103

Kato, Sawako. (2005). How language learning strategies affect English proficiency in Japanese
university students. *Journal of the Faculty of Human Studies Bunkyo Gakuin University*,
*7*(1), 239–262. Retrieved from https://www.u-
bunkyo.ac.jp/center/library/image/kyukiyo7_kato.pdf

Kato, Shigeo, & Tanaka, K. (2015). Reading aloud performance and listening ability in an L2 :
The case of college-level Japanese EFL users. *Open Journal of Modern Linguistics*, *5*, 187–
206. https://doi.org/http://dx.doi.org/10.4236/ojml.2015.52015

Khuziakhmetov, A., & Porchesku, G. (2016). Teaching listening comprehension: Bottom-up
approach. *International Journal of Environmental and Science Education*, *11*(8), 1989–
2001. https://doi.org/10.12973/ijese.2016.572a

Kim, Y. S. G. (2016). Direct and mediated effects of language and cognitive skills on
comprehension of oral narrative texts (listening comprehension) for children. *Journal of
Experimental Child Psychology*, *141*, 101–120. https://doi.org/10.1016/j.jecp.2015.08.003

Kivunja, C. (2015). Using De Bono's six thinking hats model to teach critical thinking and
problem solving skills essential for success in the 21st century economy. *Creative
Education*, *6*, 380–391. https://doi.org/10.4236/ce.2015.63037

Koul, R. B., & Fisher, D. (2005). Cultural background and students' perceptions of science
classroom learning environment and teacher interpersonal behaviour in Jammu, India.
*Learning Environments Research*, *8*(2), 195–211. https://doi.org/10.1007/s10984-005-7252-
9

Koulouriotis, J. (2011). Ethical Considerations in Conducting Research with Non-native
Speakers of English. *TESL Canada Journal*, *28*(5), 1.

https://doi.org/10.18806/tesl.v28i0.1078

Krathwohl, D. (2002). A revision of Bloom's taxonomy : An overview. *Theory Into Practice*,

*41*(4), 212–218. https://doi.org/10.1207/s15430421tip4104_2

Kruger, J., & Van Der Merwe, L. (2012). Learning about the world: Developing higher order

thinking in music education. *The Journal of Transdisciplinary Research in South Africa*,

*8*(1), 63–80. Retrieved from https://td-sa.net/index.php/td/article/download/6/204

Ku, K. (2009). Assessing students' critical thinking performance: Urging for measurements

using multi-response format. *Thinking Skills and Creativity*, *4*(1), 70–76.

https://doi.org/10.1016/j.tsc.2009.02.001

Kumaravadivelu, B. (2006). Understanding language teaching: From method to postmethod. In

*ESL & applied linguistic professional series* (p. 277). Mahwah, New Jersey: Lawrence

Erlbaum Associates. Retrieved from

https://livelongday.files.wordpress.com/2011/08/kumaraposmethod.pdf

Labrie, G. (2000). A French vocabulary tutor for the web. *CALICO Journal*, *17*(3), 475–499.

https://doi.org/10.1558/cj.v17i3.475-499

Lala, D., Milhorat, P., Inoue, K., Ishida, M., Takanashi, K., & Kawahara, T. (2017). *Attentive*

*listening system with backchanneling, response generation and flexible turn-taking*.

Saarbrucken, Germany. https://doi.org/10.18653/v1/w17-5516

Lamb, S., Maire, Q., & Doeke, E. (2017). *Key skills for the 21st century: An evidence-based*

*review*. Melbourne, Australia. https://doi.org/10.1093/nar/gku1327

Lampert, M. (2015). *Deeper teaching*. Boston, MA. Retrieved from https://jfforg-prod-

prime.s3.amazonaws.com/media/documents/Deeper-Teaching-120315.pdf

Landrum, T. J., & McDuffie, K. A. (2010). Learning styles in the age of differentiated

instruction. *Exceptionality: A Special Education Journal*, *18*(1), 6–17.

https://doi.org/10.1080/09362830903462441

Lang, Q., Wong, A., & Fraser, B. (2005). Teacher-student interaction and gifted students'

attitudes toward chemistry in laboratory classrooms in Singapore. *The Journal of Classroom

Interaction*, *40*(1), 18–28. https://doi.org/10.1189/jlb.1003465

Lee, H., Parsons, D., Kwon, G., Kim, J., Petrova, K., Jeong, E., & Ryu, H. (2016). Cooperation

begins: Encouraging critical thinking skills through cooperative reciprocity using a mobile

learning game. *Computers and Education*, *97*, 97–115.

https://doi.org/10.1016/j.compedu.2016.03.006

Lee, S.-P., Lee, S.-D., Liao, Y.-L., & Wang, A.-C. (2015). Effects of audio-visual aids on foreign

language test anxiety, reading and listening comprehension, and retention in EFL learners.

*Perceptual and Motor Skills*, *120*(2), 576–590. https://doi.org/10.2466/24.PMS.120v14x2

Lervåg, A., Hulme, C., & Melby-Lervåg, M. (2018). Unpicking the developmental relationship

between oral language skills and reading comprehension: It's simple, but complex. *Child

Development*, *89*(5), 1821–1838. https://doi.org/10.1111/cdev.12861

Lévesque, M. (2013). *Incidental vocabulary acquisition through aural means: What do

television programs have to offer?* Concordia University. Retrieved from

https://pdfs.semanticscholar.org/1cab/8205cbfc49b0c90dc56c1a70744966a6c206.pdf

Lewis, A., & Smith, D. (1993). Defining higher order thinking. *Theory Into Practice*, *32*(3),

131–137. Retrieved from http://www.jstor.org/stable/1476693 .

Lu, D. H., & Baker, C. (2006). Foundations of bilingual education and bilingualism. *TESOL*

*Quarterly*, *31*(2), 378. https://doi.org/10.2307/3588060

Lunenburg, F. C. (2011). Critical thinking and constructivism techniques for improving student achievement. *National Forum of Teacher Education*, *21*(3), 1–9. Retrieved from http://www.nationalforum.com/Electronic Journal Volumes/Lunenburg, Fred C. Critical Thinking & Constructivism V21 N3 2011 NFTJ.pdf

Lynch, T. (2011). Academic listening in the 21st century: Reviewing a decade of research. *Journal of English for Academic Purposes*, *10*, 79–88. https://doi.org/10.1016/j.jeap.2011.03.001

Marin, M. A., & de la Pava, L. (2017). Conceptions of critical thinking from university EFL teachers. *English Language Teaching*, *10*(7), 78–88. https://doi.org/10.5539/elt.v10n7p78

Marzano, R. J., & Kendall, J. S. (2007). *The new taxonomy of educational objectives*. *Coaching* (Second Ed). Thousand Oaks, CA: Corwin Press. https://doi.org/10.1016/B978-1-85617-816-7.10013-X

McGarrity, D. N. (2013). *A Model for developing improvements to critical thinking skills across the community college curriculum*. (Doctoral dissertation). Retrieved from https://eric.ed.gov/?id=ED562886

Medina, P. (2008). Aproximaciones a la flexibilidad curricular en la educación superior en Colombia. *Guillermo de Ockham: Revista Científica*, *6*(1), 79–89. https://doi.org/10.21500/22563202.516

Melo, J. (2015). A baseline study of strategies to promote critical thinking in the preschool classroom. *Gist Education and Learning Research Journal*, *10*, 113–127. Retrieved from https://files.eric.ed.gov/fulltext/EJ1070503.pdf

MEN. (2006). Estándares básicos de competencias en lenguas extranjeras: Ingles. Formar en

lenguas extranjeras: ¡El reto! lo que necesitamos saber y saber hacer (Serie Guias #22).

Bogotá, Colombia: Imprenta Nacional. Retrieved from

https://www.mineducacion.gov.co/1759/articles-115174_archivo_pdf1.pdf

Merdinger, P., & Barton, L. (2014). *Northstar 1 listening and speaking*. (F. Boyd & C. Numrich,

Eds.) (3rd ed). Upper Saddle River, NJ: Pearson Education.

Michaelsen, L., Fink, L. D., & Knight, A. (1997). Designing effective group activities: Lessons

for classroom teaching and faculty development. In D. DeZure (Ed.), *To Improve the*

*Academy* (Vol. 16, pp. 373–397). Stillwater, Ok. https://doi.org/10.1002/j.2334-

4822.1997.tb00335.x

Mizbani, M., & Chalak, A. (2017). Analyzing listening and speaking activities of Iranian EFL

textbook Prospect 3 through Bloom's revised taxonomy. *Advances in Language and*

*Literary Studies*, *8*(3), 38–43. https://doi.org/10.7575/aiac.alls.v.8n.3p.38

Mohd, S. R. (2018). Ethical considerations in qualitative research. *International Journal of Care*

*Scholars*, *1*(2), 30–33. https://doi.org/10.1177/019394598801000204

Moore, K. (2009). *Effective instructional strategies: From theory to practice*. Thousand Oaks,

CA: Sage Publications, Inc.

Moreno, S. (2015). *Differentiated instruction: Strategies for English language learners listening*

*comprehension development*. *Master's theses and projects, Bridgewater State University*.

Bridgewater State University. Retrieved from

http://vc.bridgew.edu/cgi/viewcontent.cgi?article=1015&context=theses

Morgan, H. (2014). Maximizing student success with differentiated learning. *The Clearing*

*House: A Journal of Educational Strategies, Issues and Ideas*, *87*(1), 34–38.

https://doi.org/10.1080/00098655.2013.832130

Mueller, G. (1980). Visual contextual cues and listening Comprehension: An experiment. *The*

*Modern Language Journal*, *64*(3), 335–340. https://doi.org/10.1111/j.1540-

4781.1980.tb05202.x

Murawski, L. M. (2014). Critical thinking in the classroom... and beyond. *Journal of Learning in*

*Higher Education*, *10*(1), 25–30. https://doi.org/10.1021/acs.jchemed.6b00406

Myers, B. E., & Dyer, J. E. (2006). The influence of students learning style on critical thinking

skills. *Journal of Agricultural Education*, *47*(1), 43–52. Retrieved from

https://pdfs.semanticscholar.org/164e/e5803a31946f03960f46d407eb7035b8cb11.pdf

Naderi, S., & Ashraf, H. (2014). The relationship between EFL learners' self-regulation and their

listening comprehension ability. *International Journal of Learning, Teaching and*

*Educational Research*, *6*(1), 71–80. https://doi.org/10.7575/aiac.alls.v.5n.4p.198

Naranjo, D. (2006). Salvando las dificultades del uso de la encuesta en la investigación contable

de gestión: Una aplicación empírica. *Revista Española de Financiacion y Contabilidad*,

*35*(129), 361–385. https://doi.org/10.1080/02102412.2006.10779583

Neuman, S. B., Kaefer, T., & Pinkham, A. (2014). Building background knowledge. *The*

*Reading Teacher*, *68*(2), 145–148. https://doi.org/10.1002/trtr.1314

Newmann, F. M. (1990). Higher order thinking in teaching social studies: A rationale for the

assessment of classroom thoughtfulness. *Journal of Curriculum Studies*, *22*(1), 41–56.

https://doi.org/10.1080/0022027900220103

Nguyen, T. (2016). Critical thinking's effect on Vietnamese students' writing attitude and

performance: Action research. *IOSR Journal of Research & Method in Education*, *6*(6), 38–

48. https://doi.org/10.9790/7388-0606023848

Nour Mohammadi, E., Heidari, F., & Niry, N. (2012). The relationship between critical thinking

ability and reading strategies used by Iranian EFL learners. *English Language Teaching*,

*5*(10), 192–201. https://doi.org/10.5539/elt.v5n10p192

Nour Mohammadi, E., & Zare, Z. (2015). The relationship between the critical thinkinga ability

and the listening strategies of Iranian EFL learners. *International Journal of Research in

Language Learning*, *4*(3), 47–59. https://doi.org/10.5861/ijrsll.2014.903

Numrich, C. (1996). On becoming a language teacher: Insights from diary studies. *TESOL

Quarterly*, *30*(1), 131. https://doi.org/10.2307/3587610

Numrich, C. (2001). Theme- based instruction: Fieldwork in a small Connecticut town. In J.

Murphy & P. Byrd (Eds.), *Understanding the courses we teach: Local perspectives on

English language teaching* (pp. 390–408). Ann Arbor, MI: The University of Michigan

Press.

Numrich, C. (2009). *Raise the issues: An integrated approach to critical thinking* (3rd ed.).

Upper Saddle River, NJ: Pearson.

Numrich, C., & Kennedy, A. S. (2016). Providing guided practice in discourse synthesis. *TESOL

Journal*, *8*(1), 28–43. https://doi.org/10.1002/tesj.258

Nunan, D. (1999). *Second language teaching and learning*. Boston: Heinle & Heinle Publishers.

Nunan, D., & Bailey, K. (2009). *Exploring second language classroom research: A

comprehensive guide* (Heinle Cen). Boston, MA: Sherrise Roehr.

O'Malley, M. J., Chamot, A., & Küpper, L. (1989). Listening comprehension strategies in

second language acquisition. *Applied Linguistics*, *10*(4), 418–437.

https://doi.org/10.1093/applin/10.4.418

Omaggio, A. (1979). Pictures and second language comprehension: Do they help? *Foreign*

*Language Annals*, *12*(2), 107–116. https://doi.org/10.1111/j.1944-9720.1979.tb00153.x

Ordem, E. (2016). Developing critical thinking dispositions in a listening/speaking class. *English*

*Language Teaching*, *10*(1), 50. https://doi.org/10.5539/elt.v10n1p50

Ozfidan, B., & Aydin, H. (2017). Curriculum related issues in bilingual education. *Higher*

*Education Studies*, *7*(4), 5–34. https://doi.org/10.5539/hes.v7n4p25

Özkan, I. (2010). A path to critical thinking. *Procedia - Social and Behavioral Sciences*, *3*, 210–

212. https://doi.org/10.1016/j.sbspro.2010.07.034

Pearson. (2016). Placement test information booklet 08. Retrieved from

https://www.pearson.com/content/dam/one-dot-com/one-dot-

com/english/SampleMaterials/Digital/Placement-test-information.pdf

Peavey, B. (1954). Critical reading and listening. *The English Journal*, *43*(9), 506–512.

https://doi.org/10.2307/809682

Pianta, R., & Hamre, B. (2009). Conceptualization, measurement, and improvement of

classroom processes: Standardized observation can leverage capacity. *Educational*

*Researcher*, *38*(2), 109–119. https://doi.org/10.3102/0013189X09332374

Pineda Báez, C. (2004). Critical thinking in the EFL classroom: The search for a pedagogical

alternative to improve English learning. *Íkala, Revista de Lenguaje y Cultura*, *9*(15), 45–80.

Retrieved from

https://www.researchgate.net/publication/277834572_Critical_Thinking_in_the_EFL_Class

room_The_Search_for_a_Pedagogical_Alternative_to_Improve_English_Learning

Plano, V., & Creswell, J. (2010). *Understanding research. A consumer's guide* (2nd ed.).

Boston, MA: Pearson, Longman.

Pohl, M. (2011). Developing a classroom culture of thinking: A whole school approach. *TEACH Journal of Chriatian Education*, *5*(1), 8–9. Retrieved from

https://research.avondale.edu.au/cgi/viewcontent.cgi?article=1051&context=teach

Poussard, C. (2003). Guider des stratégies de compréhension de l ' oral en ALAO: Le cas de l '

inférence. *Apprentissage Des Langues et Systemes d'information et de Communication*,

*6*(1), 143–150. https://doi.org/10.4000/alsic.2132

Presseisen, B. Z. (1986). *Critical thinking and skills: State of the art definition and practice in public schools*. Retrieved from https://files.eric.ed.gov/fulltext/ED268536.pdf [Accessed:

02 Oct 2018]

Radulović, L., & Stančić, M. (2017). What is needed to develop critical thinking in schools?

*C.E.P.S Journal*, *7*(3), 9–27. Retrieved from https://files.eric.ed.gov/fulltext/EJ1156618.pdf

Rashid, A. A., & Majid, A. (2014). The effect of using authentic materials in teaching.

*International Journal of Scientific & Technology Research*, *3*(10), 249–254. Retrieved from

http://www.ijstr.org/final-print/oct2014/The-Effect-Of-Using-Authentic-Materials-In-

Teaching.pdf

Reeve, J. (2006). Teachers as facilitators: What teachers do and why their students benefit. *The Elementary School Journal*, *106*(3), 225–236. Retrieved from

http://www.jstor.org/stable/10.1086/501484

Richards, J. (1983). Listening comprehension: Approach, design, procedure. *TESOL Journal*,

*17*(2), 219–240. https://doi.org/https://doi.org/10.2307/3586651

Richards, J. (2005). Second thoughts on teaching listening. *RELC Journal*, *36*(1), 85–92.

https://doi.org/10.1177/0033688205053484

Richards, J., & Schmidt, R. (2013). *Longman dictionary of language teaching and applied*

*linguistics* (3rd ed.). London, England: Pearson Education. Retrieved from

https://library.aceondo.net/ebooks/English_Language/dictionary_of_language_teaching_and

_applied_linguistics.pdf

Ridgway, T. (2000). Listening strategies-I beg your pardon? *ELT Journal*, *54*(2), 179–185.

https://doi.org/10.1093/elt/54.2.179

Rost, M. (1990). *Listening in Language Learning*. (Taylor and Francis, Ed.). New York:

Routledge.

Rost, M. (2011). *Teaching and researching listening*. (C. Candlin & D. Hall, Eds.) (Second Ed).

United Kingdom: Pearson. Retrieved from

http://linkinghub.elsevier.com/retrieve/pii/S1475158512000604

Rubin, J. (1994). A review of second language listening comprehension research. *The Modern*

*Language*, *78*(2), 199–221. https://doi.org/10.1111/j.1540-4781.1994.tb02034.x

Rudd, R. (2007). Defining critical thinking. *Techniques*, *82*(7), 46–49. Retrieved from

https://www.questia.com/magazine/1G1-170157748/defining-critical-thinking

Samuels, S. J. (1984). Factors influencing listening: Inside and outside the head. *Theory Into*

*Practice*, *23*(3), 183–189. https://doi.org/10.1080/00405848409543112

Sawyer, R. K. (2004). Creative teaching: Collaborative discussion as disciplined improvisation.

*Educational Researcher*, *33*(2), 12–20. https://doi.org/10.3102/0013189x033002012

Schmaltz, R. M., Jansen, E., & Wenckowski, N. (2017). Redefining critical thinking: Teaching

students to think like scientists. *Frontiers in Psychology*, *8*(459), 1–4.

https://doi.org/10.3389/fpsyg.2017.00459

Schwartz, A. M. (1998). *Listening in a foreign language.* (In Out of class learning experience

and students' perception of their impact on English). Washington D.C. Retrieved from

http://eric.ed.gov/?id=ED433723

Shabani, K., Khatib, M., & Ebadi, S. (2010). Vygotsky's zone of proximal development:

Instructional implications and teachers' professional development. *English Language

Teaching*, *3*(4), 237–248. https://doi.org/10.5539/elt.v3n4p237

Sideridis, G. (1998). Direct classroom observation. *Research in Education*, (59), 19. Retrieved

from https://search-proquest-

com.queens.ezp1.qub.ac.uk/docview/213127815?accountid=13374

Smith, V. G., & Szymanski, A. (2013). *Critical thinking: More than test scores*. *NCPEA

International Journal of Educational Leadership Preparation* (Vol. 8). Retrieved from

https://files.eric.ed.gov/fulltext/EJ1016160.pdf

Solano-Flores, G. (2008). Who is given tests in what language by whom, when, and where? The

need for probabilistic views of language in the testing of Englishl language learners.

*Educational Researcher*, *37*(4), 189–199. https://doi.org/10.3102/0013189X08319569

Soodmand, A. H., & Rahimi, M. (2014). The relationship among critical thinking, emotional

intelligence, and speaking abilities of Iranian EFL learners. *Procedia - Social and

Behavioral Sciences*, *136*, 75–79. https://doi.org/10.1016/j.sbspro.2014.05.291

Stephens, K. (2007). Parenting requires attentive , consistent listening skills. Retrieved from

www.ParentingExchange.com

Strauss, D. (2016). How critical is "critical thinking"? *South African Journal of Philosophy*, *35*(3), 261–271. https://doi.org/10.1080/02580136.2016.1191853

Thomlison, D. (1984). *Relational listening: Theoretical and practical considerations* (Paper presented at the annual meeting of the international listening association). Scottsdale,AZ. Retrieved from https://eric.ed.gov/?id=ED257165

Tomlinson, C. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd editio). Alexandria, VA: ASCD.

Tudor, I. (2001). *The dynamics of the language classroom.* Cambridge, UK: Cambridge University Press.

Ueda, M. (2007). The role of inferential ability in listening comprehension in English as a foreign language. Retrieved from www.ritsumei.ac.jp/acd/.../RitsIILCS_19.1pp.287-302Ueda.pdf

Uribe, O. L., Uribe, D. S., & Vargas, M. del P. (2017). Critical thinking and its importance in education : Some reflections. *Rastros Rostros*, *19*(34), 1–17. https://doi.org/10.16925/ra.v19i34.2144

Vandergrift, L. (1999). Facilitating second language listening comprehension: Acquiring successful strategies. *ELT Journal*, *53*(3), 168–176. https://doi.org/10.1093/elt/53.3.168

Vandergrift, L. (2004). Listening to learn or learning to listen? *Annual Review of Applied Linguistics*, *24*, 3–25. https://doi.org/10.1017/S0267190504000017

Vandergrift, L. (2006). Second language listening: Listening ability or language proficiency? *Modern Language Journal*, *90*(1), 6–18. https://doi.org/10.1111/j.1540-4781.2006.00381.x

Vandergrift, L. (2007). Recent developments in second and foreign language listening

comprehension research. *Language Teaching*, *40*(3), 191–210.

https://doi.org/10.1017/S0261444807004338

Vygotsky, L. (1978). *Mind in Society: The development of higher psychological processes*.

Cambridge, MA: Harvard University Press.

Waine, J. (2010). *An analysis of convergent and divergent teaching on high school students'*

*understanding of selected lighting principles*. University of Wisconsin-Stout,

Menomonie,WI. https://doi.org/10.1016/0165-0327(96)00013-4

Wall, D., Clapham, C., & Alderson, J. C. (1994). Evaluating a placement test. *Language Testing*,

*11*(3), 321–344. https://doi.org/10.1177/026553229401100305

Wang, H. (2014). Learner autonomy based on constructivism learning theory. *International*

*Journal of Social, Behavioral, Educational, Economic, Business and Industrial*

*Engineering*, *8*(5), 1552–1554.

Wang, Y., & Treffers-Daller, J. (2017). Explaining listening comprehension among L2 learners

of English: The contribution of general language proficiency, vocabulary knowledge and

metacognitive awareness. *System*, *65*, 139–150.

https://doi.org/10.1016/j.system.2016.12.013

Wetzels, S., Kester, L., van Merriënboer, J., & Broers, N. (2011). The influence of prior

knowledge on the retrieval-directed function of note taking in prior knowledge activation.

*British Journal of Educational Psychology*, *81*(2), 274–291.

https://doi.org/10.1348/000709910X517425

White, M. (2018). Rater performance standards for classroom observation instruments.

*Educational Researcher*, *20*, 1–10. https://doi.org/10.3102/0013189X18785623

Willis, D., & Willis, J. (2008). *Doing task -based teaching*.

Witkin, B. (1990). Listening theory and research: The state of the art. *International Journal of Listening*, *4*(1), 7–32. https://doi.org/10.1207/s1932586xijl0401

Wolvin, A. (2010). *Listening and human communication in the 21st century*. (A. Wolvin, Ed.). Malden, MA: Blackwell Publishing Ltd. Retrieved from https://epdf.tips/listening-and-human-communication-in-the-21st-century.html

Wong, B. (2016). *Using critical thinking strategies to develop academic reading skills among Saudi IEP students*. Hamline University. Retrieved from https://digitalcommons.hamline.edu/hse_all/1116

Wubbels, T., Créton, H., & Hooymayers, H. (1985). *Discipline problems of beginning teachers, interactional teacher behaviour mapped out.* Chicago, IL. Retrieved from https://files.eric.ed.gov/fulltext/ED260040.pdf

Yagang, F. (1994). *Listening: Problems and solutions*. (T. Kral, Ed.), *Teacher development: Making the right moves*. Washington, D.C: English Language Program Division USIA.

Yang, S., & Chung, T. (2009). Experimental study of teaching critical thinking in civic education in Taiwanese junior high school. *British Journal of Educational Psychology*, *79*, 29–55. https://doi.org/10.1348/000709907X238771

Yang, Y.-T., Chuang, Y.-C., Li, L.-Y., & Tseng, S.-S. (2013). A blended learning environment for individualized English listening and speaking integrating critical thinking. *Computers and Education*, *63*, 285–305. https://doi.org/10.1016/j.compedu.2012.12.012

Yuan, X., & Che, L. (2012). How to deal with student misbehaviour in the classroom? *Journal of*

*Educational and Developmental Psychology*, *2*(1), 143–150.

https://doi.org/10.5539/jedp.v2n1p143

Zaare, M. (2013). An investigation into the effect of classroom observation on teaching

methodology. *Procedia - Social and Behavioral Sciences*, *70*, 605–614.

https://doi.org/10.1016/j.sbspro.2013.01.099

Zare, M., Behjat, F., Abdollrahimzadeh, S., & Izadi, M. (2013). Critical thinking and Iranian

EFL students' listening comprehension. *International Journal of Linguistics*, *5*(6), 12–21.

https://doi.org/10.5296/ijl.v5i6.4253

Zulfugarova, S. (2018). The importance of teaching listening and speaking skills. *World Science*,

*7*(6), 52–55. https://doi.org/10.31435/rsglobal_ws/12062018/5881

## Appendix

## Appendix A: Ethical considerations

| **Universidad de La Sabana** | **Consent form** |
|---|---|
| | **Student/Parents** |

**TITLE OF RESEARCH:**

**HEAD RESEARCHER**: Tania Castro Nuñez (taniacanu@unisabana.edu.co)

Dear participant,

You have been selected to be part of this project because I am interested in improving your language skills as well as the classroom working environment, In order to do so I will need to collect data from you in the forms of interviews questionnaires, and reports. The research will last for a period of two years.

The Universidad de La Sabana requires the informed consent of any person involved in a study conducted by researchers at the university.

This project will examine classroom routines, English language performance, socio affective relations, motivation and behavior. Project-related objective includes: To direct unfavorable experiences that have hampered communication affecting self- confidence, motivation, behavior, social affective relations, instruction and/or school performance through classroom routines and behavior to establish a good performance and a healthier classroom environment among Sixth grade students at this school in Montería.

If you agree to participate in this study, a number of data collection instruments will be used to gather information about your participation throughout the project.

**Participant Consent**

The participant has been given a signed copy of this form to keep.

I agree to participate in this research.

**Name:** _____**Date:** _____

The Universidad de La Sabana has approved the ethical aspects of this study. All data will be kept confidential and all information will be utilized only for educational and research purposes.

The researcher has:

    A.    Provided me with a detailed explanation of the procedures to be followed in the project, including an identification of those. I understand I will be asked to participate in the data collection process.

    B.    Answered any questions that I have regarding the study.

I understand that:

    A.    My participation is voluntary, and I may withdraw my consent and discontinue participation in the project at any time. My refusal to participate will not result in any penalty.

    B.    By signing this agreement, I do not waive any legal rights or release you from liability for negligence.

I hereby give my consent to be the subject of your research.

Participant's name: _____

Signature_____ Contact details_____

**Signature of parent/Guardian if Participant is a minor.**

_____ Date: _____

**THIS PAGE IS PROVIDED TO THE SUBJECT**

**Appendix B***: Placement tests*

Pearson English Placement Test Report
Students 6th Level A1-A2
Teacher: Tania Castro
5th February 5, 2018

Estudiante ID: 20237
Nombres:
Apellidos:
Identificación: ELT2MMPP
Genero: 1
Nombre de usuario: ELT2MMPP

| Area: Evaluación de Inglés | C | I | Σ | Calificacion | Nivel |
|---|---|---|---|---|---|
| | 29 | 31 | 60 | 29.00 | Nivel A1 |

**Competencias de Área: Evaluación de Inglés**

| | C | I | Σ | |
|---|---|---|---|---|
| Grammar | 10 | 5 | 15 | Medio |

Identifica la estructura general del idioma, aunque le hace falta reconocer con mayor especificidad los usos de todas las estructuras, tanto simples como perfectas, activas o pasivas sobre las cuales funciona del idioma.

Reconoce las estructuras, pero se le dificulta identificar el contexto apropiado para ponerlas en práctica.

| Listening | 5 | 10 | 15 | Medio |
|---|---|---|---|---|

Comprende con suficiencia la información concreta en discursos que manejan una lengua estándar.

Puede identificar tanto las ideas generales como las específicas de dichos discursos, especialmente cuando están relacionados a temas que le son familiares y cuando se refieren a narraciones de diferentes eventos.

| Reading | 7 | 8 | 15 | Medio |
|---|---|---|---|---|

Posee un nivel de compresión de lectura satisfactorio.

Es capaz de identificar ideas generales y específicas de textos de mediana dificultad que se refieren a temas que son de su interés especialmente, aunque logra comprender parcialmente algunos textos acerca de temas más estructurados.

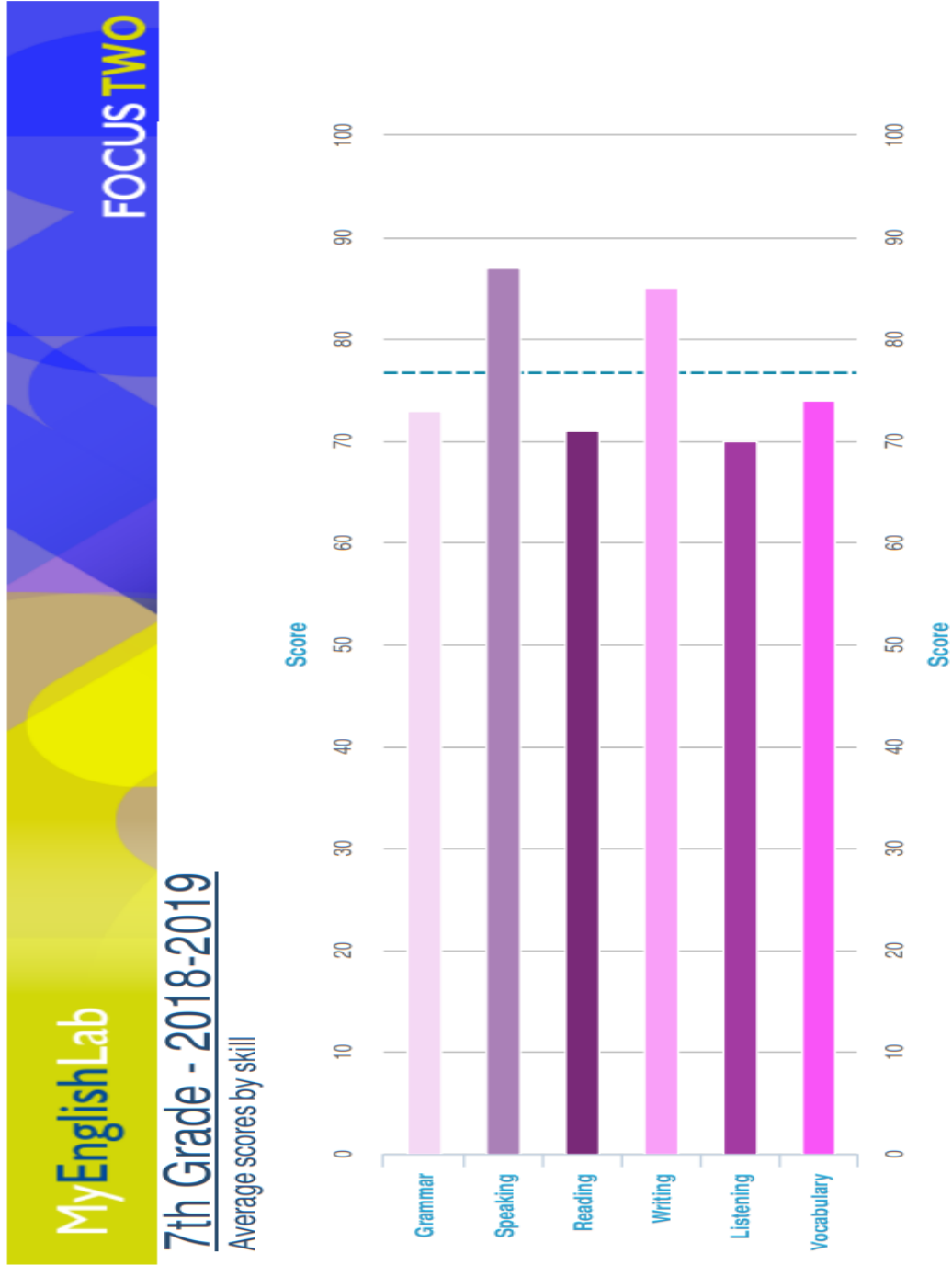| Vocabulary | 7 | 8 | 15 | Medio |
|---|---|---|---|---|

Tiene suficiente vocabulario para entender y responder acerca de temas que son cotidianos y de su interés. Sin embargo, aún muestra errores en el uso del vocabulario que encuentra en contextos complejos y contenidos especializados.

General: 29 correctas y 31 incorrectas de 60 en total.

**Appendix C: MyEnglishLab**

**Appendix D**: *Questionnaire on teachers' interaction in the professional development of teachers*

Universidad de
La Sabana

Castro, Tania                                        Data collection instruments

*(Instrument #4)*

*Questionnaire on teachers' interaction in the professional development of teachers*

Subject: _____  Date: _____  # _____ Grade: _____

*Instructions:* This questionnaire asks you to describe the behavior of your teacher. If you want to change your answer, cross it out and tick a new number. Thank you for your cooperation. This questionnaire has 12 sentences about the teacher. For each sentence, tick (✔) the space below the number corresponding to your response. Never 0 / Seldom 1 / Often 2 / Usually 3 / Always 4

| | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| **Question 1** | | | | | |
| This teacher trusts us | | | | | |
| **Question 2** | | | | | |
| This teacher explains things clearly | | | | | |
| **Question 3** | | | | | |
| If we don't agree with this teacher, we can talk about it | | | | | |
| **Question 4** | | | | | |
| This teacher knows everything that goes in the classroom | | | | | |
| **Question 5** | | | | | |
| This teacher lets us boss him/her around | | | | | |
| **Question 6** | | | | | |
| It is easy to pick a fight with this teacher | | | | | |
| **Question 7** | | | | | |
| The teacher acts confidently | | | | | |
| **Question 8** | | | | | |
| We can decide somethings in this teacher's class | | | | | |
| **Question 9** | | | | | |
| This teacher is strict | | | | | |
| **Question 10** | | | | | |
| This teacher is friendly | | | | | |
| **Question 11** | | | | | |
| This teacher puts us down | | | | | |
| **Question 12** | | | | | |
| The teacher is permissive | | | | | |

Adapted from: Fisher, D., Fraser, B., & Cresswell, J. (1995). Using the "questionnaire on teacher interaction" in the professional development of teachers. *Australian Journal of Teacher Education*, 20(1), 8–18. https://doi.org/http://dx.doi.org/10.14221/ajte.1995v20n1.2

**Appendix E***: Researcher's journal*

Universidad de
La Sabana

Castro, Tania

Data collection instruments

*Researcher's Journal*

(Instrument #3 )

Date: _____ Time: _____

| Subject | What happened? | Why did it happen? | Positive factors (According to the language skill) | Negative factors (According to the language skill) |
|---------|----------------|--------------------|----------------------------------------------------|----------------------------------------------------|
| English |                |                    |                                                    |                                                    |
| Maths   |                |                    |                                                    |                                                    |
| Technology |             |                    |                                                    |                                                    |
| Science |                |                    |                                                    |                                                    |
| Arts    |                |                    |                                                    |                                                    |

Remarks:

_____

_____

**Appendix F***: Researcher's journal and classroom observation*

SANTILLANA
**compartir**

Student #21    (-A,)   A.M.M.

Special needs.
Does not recognized Commands.
instructions.  Keeps asking how
to solve problems.
Collaborative work with S28.
grammar, vocabulary, reading, and
Writing issues.
Spanish: reading Comprehension (-)
Listening Comprehension activity.
(Jan 24).
He needs more time to complete
the task.
• The video ran 3 times.
• Too many unknown words.

Other Subjects:
• Science: Doesn't recognize cells.
works with a partner.

• Maths: Gets discouraged because the
teacher talks too fast and he doesn't
understand.
• Arts: Good painter (instructions
are given in Spanish and English.
• Technology: works with assistant
teacher and S9 (best friend).
• Tests are carried out with the
assistance of the school Counselor.

**Appendix G**: *Classroom observation*

Universidad de
**La Sabana**

Castro, Tania — Data collection instruments

| Question 8 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Maintained students' attention. | | | | |
| **Question 9** | 1 | 2 | 3 | 4 |
| Provided group tasks that promoted higher-level thinking. | | | | |
| **Question 10** | 1 | 2 | 3 | 4 |
| Provided clear tasks for student groups. | | | | |
| **Question 11** | 1 | 2 | 3 | 4 |
| Asked students to generate their own explanations and justify their thinking. | | | | |
| **Question 12** | 1 | 2 | 3 | 4 |
| Supported the lesson with useful classroom discussions and exercises. | | | | |
| **Question 13** | 1 | 2 | 3 | 4 |
| Students were eager to ask questions. | | | | |
| **Question 14** | 1 | 2 | 3 | 4 |
| Most students were engaged in the lesson throughout the class time. | | | | |
| **Question 15** | 1 | 2 | 3 | 4 |
| Students appeared to understand the lesson material. | | | | |
| **Question 16** | 1 | 2 | 3 | 4 |
| Students were eager to solve questions at the end of class. | | | | |

Adapted from: Classroom Observation Worksheet, Univ. of Minnesota Center for Teaching and Learning, http://www1.umn.edu/ohr/teachlearn/resources/peer/index.html

**Appendix H**: *English language skill rating of importance survey*

English language skill rating of importance survey

Universidad de
La Sabana

Instrument #5

Dear student,

By filling in this questionnaire you can share your views and experiences of how important English language sub-skills are according to your present situation*. This survey is carried out by students of the Master in English language teaching for self-directed learning at the Universidad de la Sabana, the survey is part of an English research project, aimed to providing new information about English language skill rating importance and functions of English. *Present situation refers to the respondents' proficiency level in the English language. Students results of Pearson English placement test was also analyzed to reveal the present situation in English.

Any questions about the study can be sent to the researcher via e-mail (taniacanu@unisabana.edu.co)

## Writing subskill importance

| Item | Sub skill | 5 | 4 | 3 | 2 |
|------|-----------|---|---|---|---|
| 1 | spelling | | | | |
| 2 | punctuation | | | | |
| 3 | Organizing writing | | | | |
| 4 | Well-structured paragraphs | | | | |
| 5 | Appropriate vocabulary | | | | |

## Reading subskill importance

| Item | Sub skill | 5 | 4 | 3 | 2 |
|------|-----------|---|---|---|---|
| 6 | Reading to get specific information | | | | |
| 7 | Reading to support a position | | | | |
| 8 | Understanding vocabulary | | | | |
| 9 | Reading critically | | | | |
| 10 | Taking notes | | | | |

# English language skill rating of importance survey

Universidad de
La Sabana

## Speaking subskill importance

| Item | Sub skill | 5 | 4 | 3 | 2 |
|------|-----------|---|---|---|---|
| 11 | Give oral presentations | | | | |
| 12 | Asking for information | | | | |
| 13 | Asking questions in class | | | | |
| 14 | Report results | | | | |
| 15 | Speaking in groups | | | | |

## Listening subskill importance

| Item | Sub skill | 5 | 4 | 3 | 2 |
|------|-----------|---|---|---|---|
| | | | | | |
| 16 | Listening to recorded speech | | | | |
| 17 | Following instructions | | | | |
| 18 | Listening to get specific information | | | | |
| 19 | Listening to make inferences | | | | |
| 20 | Note taking | | | | |

**Confidentiality**: All data will be treated as confidential. Any information that can be used to identify individual respondents will be removed. The data will be processed and analyzed statistically, and individual responses will not be identifiable from the results.

**Appendix I***: Critical thinking listening test*

Piloting

The purpose of the **critical thinking – listening activity** is to heighten awareness of the importance of both careful listening and thinking as an instrument to collect data from 28 participants attending seventh grade at a private school in Monteria, Colombia. The information collected will be treated confidentially, and will not be disclosed, nor will it be used for other purposes than this research. The estimated time of response for this test is expected to be completed in 20 minutes.
I appreciate your willingness to collaborate.

Sincerely,
Tania Castro N.
Student at Universidad de la Sabana Master's program in English language teaching for self-directed learning Universidad de la Sabana. Chía, Colombia

Procedure:
1. Each question will be stated only once
2. Check responses and discuss why simple questions might stump students

1. How many months have 28 days?
2. Albert the butcher is 6 feet tall and wears a size 12 shoe. What does he weigh?
3. You're driving a bus. At the first stop, 8 people get on. At the second stop, 3 people get off. At the last stop, 2 people get on. How old is the bus driver?
4. What word do the terms work, cook, and check have in common?
5. Which weighs more a pound of salt or a pound of iron?
6. A pen and diary together cost $3.50. The diary costs $3.00 more than the pen. How much does the pen cost?
7. What word do these words have in common: base, basket, and volley?
8. Beth's mother has three daughters. One is called Lara, the other one is called Sara. What is the third daughter's name?
9. Name a sport that is also the last name of an explorer.
10. How many animals did Moses take on the ark?
11. Does England have a 4th of July?
12. How many cookies can you eat on an empty stomach?
13. A doctor has a brother who is an attorney, but this same attorney does not have a brother who is a doctor. How can this be?
You have just built a new ranch and are choosing color schemes for your home. Since blue is your favorite color, you decide that you will use only blue throughout your house.
14. What color is the kitchen?
15. What color is the living room?
16. What color is the upstairs bathroom?

Adapted from: https://www2.cortland.edu/dotAsset/126578.pdf

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

**Piloting**

**Answer sheet**

Code: ___S 27___ Age: ___14___ Date: ___May 24|19.___

1. 12 months have 28 days ✓
2. 6 feet. ✗
3. 33 years ✗
4. they are verbs ✗
5. equal ✓
6. it cost 25 cents ✓
7. ball is the word. ✓
8. The name is Beth ✓
9. Colon ✗
10. none it was Noah. ✓
11. no ✓
12. I think that 6 are OK. ✗
13. the sister ✓
14. it is blue. ✓
15. it is blue ✓
16. blue ✗

Listening activities retrieved from: https://icebreakerideas.com/trick-questions/

## Critical thinking- Listening activity

The purpose of the **critical thinking – listening activity** is to heighten awareness of the importance of both careful listening and thinking as an instrument to collect data from 28 participants attending seventh grade at a private school in Monteria, Colombia. The information collected will be treated confidentially, and will not be disclosed, nor will it be used for other purposes than this research. The estimated time of response for this test is expected to be completed in 20 minutes.
I appreciate your willingness to collaborate.

Sincerely,
Tania Castro N.
Student at Universidad de la Sabana Master's program in English language teaching for self-directed learning Universidad de la Sabana. Chía, Colombia

Procedure:

1. Each question will be stated only once
2. Check responses and discuss why simple questions might stump students

1. Bob´s dad has four sons one is called Mark the other one is called Mike son and the third one is called Mindy. What is the fourth son´s name?
2. Is the word racecar is spelled the same backwards and forward?
3. How can a woman stay 8 days without sleeping?
4. Which animal starts with the last letter of the English alphabet and ends with the first one?
5. If an electric train travels from north to south, which is the direction of the smoke?
6. There´s an airplane crush between the boarder connecting the United States and Canada. Where will the survivors be buried?
7. Alex is Ana´s father, but Ana is not Alex son. How could this be?
8. Where do cocks lay eggs?
9. What is the first thing Andrews does in the morning?
10. If you are competing on a race and you surpass the one in in the second place; What is your new position?
11. Walking home from the store a dozen of crayons were spilled on the floor. You could only find half the dozen. How many crayons are missing?
12. Which is the longest day of the week?
13. Which color are aircrafts black boxes?
14. If Mrs. Pearson's attic is Pink, the walls are pink the ornaments are pink. What color are the stairs?
15. There are two important rooms in a house, one is filled with money, and the other one if filled with jewelry. One day the fire burnt the house. Which room will policemen extinguish first?
16. There are 10 birds on a tree. If a hunter shoots one bird; how many are left?

Adapted from: https://icebreakerideas.com/brain-teasers/

**Critical thinking- Listening activity**

Answer sheet

Code: 527    Age: 13    Gender: F

1. Bob ✓

2. yes, racecar ✓

3. she sleeps at night ✓

4. zebra. ✓

5. the Wind direction ✗

6. they survived. ✓

7. she is daughter ✓

8. it's a cock (male) ✓

9. eats breakfast. ✗

10. in second place. ✓

11. 6 ✓

12. Wednesday. ✓

13. it is orange. ✓

14. it is pink ✗

15. it is a policeman (no) ✓

16. One flies others don't. ✗

June 10/2019.

**Appendix J***: Group discussion*

1 clipboard.
Inference carousel answer sheet
8 images
Tape

STEP 1:
Before the students enter the class, post the pictures clockwise around the room in numerical order. Place some on the floor, windows, behind doors, on the sides of shelves.

STEP 2:
When it's time to begin the lesson, inform your students that you have posted several pictures throughout the room and explain that their job is to observe each illustration and make an inference based upon the images. They will record their responses on the worksheet provided as they walk around the room with their clipboards. They should not debate about the photos with each other until after the lesson. All answers should be original, and students should not be asking each other for their opinions on the pictures until they finish the carousel.
THIS IS A SILENT ACTIVITY. The goal is for students to make an inference using reasoning and background knowledge looking at the illustrations

STEP 3:
Individually call on students to begin the Inference Carousel. The first student you select should start at Picture #1, the next student should begin at the following picture and then continue walking clockwise around the room. Students should make sure the picture they are currently looking at corresponds to the correct number on their worksheet. If they begin at Picture #8, they should be recording their responses on the inference carousel answer sheet, "Picture #8". Stress the importance of paying attention to the "Picture number" when recording the answers.

STEP 4:
Once the students are finished with the carousel, they review each photo with the responses from around the room to generate a discussion about how and why they came up with their inferences. Ask them to include the word "because" in all of their responses as it will be much easier to explain the reasoning behind their conclusions and will give room for other students to argue their opinions when they didn't make the same inference.

**Piloting**

The purpose of the **group discussion** is to provide an insight into how the participants look for details to infer answers as an instrument to collect data from 28 participants attending seventh grade at a private school in Monteria, Colombia. The information collected will be treated confidentially, and will not be disclosed, nor will it be used for other purposes than this research. The estimated time of response for this test is expected to be completed in 20 minutes.
I appreciate your willingness to collaborate.

Sincerely,
Tania Castro N.
Student at Universidad de la Sabana Master's program in English language teaching for self-directed learning Universidad de la Sabana. Chía, Colombia

Making Inferences
Picture #1

Casey and Josie
are standing in front of
East Moore Middle School.

Making Inferences
Picture #2

Piloting

## Making Inferences Picture #3

Angela isn't going to school today.

## Making Inferences Picture #4

Cowboy Steve decided to have a much bigger breakfast than usual.

## Making Inferences Picture #5

## Making Inferences Picture #6

Mrs. Neddleson doesn't want to go to work today.

Piloting

## Making Inferences Picture #7

Ms. Doherty is crying.

## Making Inferences Picture #8

Allen is in a hurry.

Images retrieved from: https://co.pinterest.com/teachertreasury/

**Inference carousel answer sheet**

| Picture #1 | Picture #2 |
|---|---|
| ~~Is birthday party~~ Is high school ✓ | ~~Is day off~~ ✓ Is birthday party |
| **Picture #3** | **Picture #4** |
| Is day off ✓ | cowboy's eat a lot ✓ |
| **Picture #5** | **Picture #6** |
| she is late ✓ | she is upset ✗ |
| **Picture #7** | **Picture #8** |
| She is watching a romantic movie ✓ | He is alien ✗ |

Name: S1.

June 07/2019

# Group Discussion Activity

**Validation test**



Name _____  Date _____

## Making Inferences
### Picture #____



Name _____  Date _____

## Making Inferences
### Picture #____



Name _____  Date _____

## Making Inferences
### Picture #____



Name _____  Date _____

## Making Inferences
### Picture #____

# Group Discussion Activity

**Validation test**

| | |
|---|---|
| Picture #1 they laugh (reir) <br><br> ◡⊕◡ ✗ | Picture #2 he found kiss <br> he is happy ⌣ <br><br> ✗ |
| Picture #3 the girl have bully <br><br> ✓ | Picture #4 i don't know <br><br> ✗ |
| Picture #5 the dog is messy <br><br> ✓ | Picture #6 the man rescued the <br> koala <br> ✓ |
| Picture #7 the boy is blameing <br> with the girl <br><br> ✓ | Picture #8 the father is happy <br> because the sons go <br> to school ⌣ <br> ✓ |

S 17

June 12/2019.

**Appendix K***: Watson Glaser appraisal test*

**Watson-Glaser Critical thinking appraisal adapted to a Colombian context.**

**Piloting**

The purpose of the **Watson- Glaser critical thinking appraisal test is** designed to assess and understand critical thinking skills as an instrument to collect data from 28 participants attending seventh grade at a private school in Monteria, Colombia. The information collected will be treated confidentially, and will not be disclosed, nor will it be used for other purposes than this research. The estimated time of response for this test is expected to be completed in 20 minutes.

I appreciate your willingness to collaborate.

Sincerely,
Tania Castro N.
Student at Universidad de la Sabana Master's program in English language teaching for self-directed learning. Universidad de la Sabana. Chía, Colombia.

## Directions

- Read the instructions below, and then do the appraisal test.
- This questionnaire contains three types of tests designed to find out how well you are able to reason analytically and logically.
- Each test has separate directions that should be read carefully.
- All answers are to be marked on the **answer sheet form**. Use a sharp pencil. If you wish to change the answer, make sure that you erase your old answer completely.

## Test 1 Inference

An inference is a conclusion that a person can draw from certain observed or supposed facts.

In this test, each exercise begins with a statement of facts that you are to regard as true. After each statement of facts, you will find several possible inferences i.e., conclusions that some people might draw from the stated facts. Examine each inference separately and decide as to its degree of truth or falsity.

For each inference you will find spaces in the answer sheet labelled T, PT, ID, PF and F. For each inference put a cross on the answer sheet under the appropriate heading as follows:

T if you think the inference is definitely TRUE.
PT if you think the inference is PROBABLY TRUE.
ID if you decide that there are INSUFFICIENT DATA.
PF if you think the inference is PROBABLY FALSE.
F if you believe the inference is definitely FALS

**Watson-Glaser Critical thinking appraisal adapted to a Colombian context.**

**Piloting**

### Statement 1:

Two hundred school teenagers students voluntarily attended a recent weekend student MUN conference in Santa Marta, Colombia. At this conference, the topic of migration and its socioeconomic effects were discussed, since these were problems that the students selected as being most vital in Latin America

### Proposed Inferences:

1. As a group, the students who attended this conference showed some kind of interest in broad social problems than do most other people in their teen age.

2. The majority of the students had not previously discussed the conference topics in the schools.

3. The students came from a particular region of the country.

3. The students discussed mainly industrial relations problems.

4. Some teenage students felt it worthwhile to discuss problems of migration and ways of meeting basic needs.

### Statement 2:

Studies have shown that there is relatively much more heart disease among people living in the cold weather than people living in the hot weather. There is a difference due to high temperatures and the widening of blood vessels. The rate of heart disease between people from the Caribbean coast and people from the Andean region of Colombia is slightly lower due to smoking habits. The range income of the Andean region is considerably higher than the average income in the Caribbean coast.

### Proposed inferences:

5. The easiest way to eliminate heart disease in Colombia would be to raise the general standard of living.

6. People in high income are in a better position to avoid developing heart disease than people in low income.

7. There is a lower rate of heart disease among people living in the Caribbean coast with relatively low incomes than among the Andean region with higher incomes.

8. Whether smokers living in the Caribbean coast or living in the Andean region make no difference to the likelihood of their developing heart disease.

**Watson-Glaser Critical thinking appraisal adapted to a Colombian context.**

## Test 2 Recognition of assumptions

An assumption is something presupposed or taken for granted. When you say, 'I'll be a qualified solicitor in two months', you take it for granted that you will pass the relevant examinations. Below there is a statement followed by several proposed assumptions. You are to decide whether a person, in making the given statement, is really making that assumption.

If you think that the given assumption is taken for granted in the statement, mark 'YES' in the proper place on the answer sheet. If you think the assumption is not necessarily taken for granted in the statement, mark 'NO''. Remember to judge each assumption independently.

### Statement:

'We need to save time in getting there so we'd better go by plane.'

### Proposed assumptions:

9. Going by plane will take less time than going by some other means of transportation.

10. Traveling by other means of transportation will always be uncomfortable

11. There is a plane service available to us for at least part of the distance to the destination.

12. Traveling by plane is more convenient than traveling by car.

## Test 3 Deductions

In this test, the statement is followed by several suggested conclusions. For the purpose of this test, consider the statement as true without exception. Read the first conclusion beneath the statement.

If you think it necessarily follows from the statements given, mark 'YES' in the proper place on the answer sheet.

If you think it is not a necessary conclusion from the statements given mark 'NO', even though you may believe it to be true from your general knowledge. Similarly, read and judge each of the other conclusions.

### Statement:

No responsible leader can avoid making difficult decisions. Some responsible leaders dislike making difficult decisions. Therefore:

### Proposed conclusions:

13. Some difficult decisions are distasteful to some people.

14. Irresponsible leaders avoid things they dislike.

15. Some responsible leaders do things they dislike doing.

16. Responsible leaders must make difficult decisions

**Watson-Glaser Critical thinking appraisal adapted to a Colombian context.**

**Piloting**

Answer sheet

**Test 1 Inference**

| 1 | T | PT | ID | PF | F |
| 5 | T | PT | ID | PF | F |
| 2 | T | PT | ID | PF | F |
| 6 | T | PT | ID | PF | F |
| 3 | T | PT | ID | PF | F |
| 7 | T | PT | ID | PF | F |
| 4 | T | PT | ID | PF | F |
| 8 | T | PT | ID | PF | F |

**Test 2 Recognition of assumptions**

| 9 | YES | NO |
| 10 | YES | NO |
| 11 | YES | NO |
| 12 | YES | NO |

**Test 3 Deductions**

| 13 | YES | NO |
| 14 | YES | NO |
| 15 | YES | NO |
| 16 | YES | NO |

Code: 514     Date: May 31/2019     Score: 8/16.

**Pearson Watson-Glaser Critical thinking appraisal adapted to a Colombian context.**

**Validation**

The purpose of the **Watson- Glaser critical thinking appraisal is** designed to assess critical thinking skills as an instrument to collect data from 28 participants attending seventh grade at a private school in Monteria, Colombia. The information collected will be treated confidentially, and will not be disclosed, nor will it be used for other purposes than this research. The estimated time of response for this test is expected to be completed in 20 minutes.

I appreciate your willingness to collaborate.

Sincerely,
Tania Castro N.
Student at Universidad de la Sabana Master's program in English language teaching for self-directed learning. Universidad de la Sabana. Chía, Colombia.

## Directions

- Read the instructions below, and then do the appraisal test.
- This questionnaire contains three types of tests designed to find out how well you are able to reason analytically and logically.
- Each test has separate directions that should be read carefully.
- All answers are to be marked on the **answer sheet form**. Use a sharp pencil. If you wish to change the answer, make sure that you erase your old answer completely.

## Test 1 Inference

An inference is a conclusion that a person can draw from certain observed or supposed facts. In this test, each exercise begins with a statement of facts that you are to regard as true. After each statement of facts, you will find several possible inferences i.e., conclusions that some people might draw from the stated facts. Examine each inference separately and decide as to its degree of truth or falsity.

For each inference you will find spaces in the answer sheet labelled T, PT, ID, PF and F. For each inference put a cross on the answer sheet under the appropriate heading as follows:

T if you think the inference is definitely TRUE.
PT if you think the inference is PROBABLY TRUE.
ID if you decide that there are INSUFFICIENT DATA.
PF if you think the inference is PROBABLY FALSE.
F if you believe the inference is definitely FALSE

**Statement 1:**

500 hundred nationwide school teenager students were eager to attend a recent weekend conference in Colombia. At this conference, the topics of migration and its socioeconomic effects were discussed among other vital issues, since these were problems that the students selected as being most vital in Latin America.

**Proposed Inferences:**

1. As a group, the students who attended this conference showed some kind of interest in broad social problems than do most other people in their teen age.

2. The majority of the students had not previously discussed the conference topics in the schools.

3. The students came from a particular region of the country.

3. The students discussed migration from Latin America to North America and other related problems.

4. Some teenage students felt it worthwhile to discuss ways of meeting basic needs.

**Statement 2:**

Studies have shown that there is relatively much happiness among people living in rural areas in Colombia than people living in the cities. There is a difference due to the levels of stress people manage in urban areas. The rate of crime between people from the rural area is slightly lower due to isolation and the average income is relatively low compared to the average income in the city.

**Proposed inferences:**

5. The best way to promote happiness in urban areas would be raising the general standard of living in the cities

6. People in high income are in a better position to avoid developing stress than people in low income.

7. There is a lower rate of happiness among people living in the rural area with relatively low incomes than among people living in the city with higher incomes.

8. Whether living in the rural area or living in the city make no difference to the likelihood of their developing stress.

**Watson-Glaser Critical thinking appraisal adapted to a Colombian context.**

Validation

## Test 2 Recognition of assumptions

An assumption is something presupposed or taken for granted. When you say, 'I'll be a qualified solicitor in two months', you take it for granted that you will pass the relevant examinations. Below there is a statement followed by several proposed assumptions. You are to decide whether a person, in making the given statement, is really making that assumption.
 If you think that the given assumption is taken for granted in the statement, mark 'YES' in the proper place on the answer sheet. If you think the assumption is not necessarily taken for granted in the statement, mark 'NO''. Remember to judge each assumption independently.

**Statement:**
 'We need to save money to buy a new house, so we'd better keep our old furniture.

**Proposed assumptions:**
9. Saving money not buying new furniture will take less time to complete the goal.
10. People will always have a house if they save money
11. There is always affordable houses for all types of budget
12. Buying a house is more convenient than renting a place.

## Test 3 Deductions

In this test, the statement is followed by several suggested conclusions. For the purpose of this test, consider the statement as true without exception. Read the first conclusion beneath the statement.
 If you think it necessarily follows from the statements given, mark 'YES' in the proper place on the answer sheet.
If you think it is not a necessary conclusion from the statements given mark 'NO', even though you may believe it to be true from your general knowledge. Similarly, read and judge each of the other conclusions.

**Statement:**
Violence increases with the summer. Heat increases violence. Therefore:

**Proposed conclusions:**
13. People living in a hot weather tend to be more violent.
14. There is more violence during the summer.
15. Some people move to cold areas to avoid   because of violence
16. Responsible tourists don't spend vacations in a hot weather

**Watson-Glaser Critical thinking appraisal adapted to a Colombian context.**

**Validation**

Code: S 19     Age: 15     Date: June 11/2019

**Test 1 Inference**

| 1 | T PT ID PF F |
| 5 | T PT ID PF F |
| 2 | T PT ID PF F |
| 6 | T PT ID PF F |
| 3 | T PT ID PF F |
| 7 | T PT ID PF F |
| 4 | T PT ID PF F |
| 8 | T PT ID PF F |

**Test 2 Recognition of assumptions**

| 9 | YES NO |
| 10 | YES NO |
| 11 | YES NO |
| 12 | YES NO |

**Test 3 Deductions**

| 13 | YES NO |
| 14 | YES NO |
| 15 | YES NO |
| 16 | YES NO |

$$\frac{6}{16}$$

**Appendix L*:* Lesson planning**

Lesson plan #2

| Teacher | Tania Castro |
|---|---|
| **Implementation session date** | June 12 /2019 |
| **Event** | Group discussion (Inference carousel) |
| **Objective:** To use observation and background knowledge to interpret based upon reasoning what is happening in the illustration. | **Communicative**: To generate a discussion about the reasons why such inference is made<br>**Language:** To use *because to give reason* or cause of making inferences based upon an illustration.<br>**Learning**: To interpret relevant details to infer an illustration |

| Class activity |
|---|
| **Oral instructions**: The students listen to the oral instructions recorded by the teacher and apply listening skills strategies to monitor understanding<br>**Time:** 5 minutes |
| **Observation:** Eight pictures have been posted throughout the room in order to observe them and make an inference based upon the images. The students will record their responses on the worksheet provided by the teacher.<br>The silent activity allows students to walk around the room with their inference carousel answer sheet. All answers should be original, and students should not be asking each other for their opinions regarding the pictures until they finish the carousel.<br>**Time**: 15 minutes |
| **Communicative event:** Once the students are finished with the carousel, they review each illustration with the responses to generate a discussion about how and why they came up with such inferences. They need to use the word "because" in all of their responses as it will be much easier for them to explain the reasoning behind their inference, besides giving room for other students to debate their own responses when they didn't make the same inference.<br>**Time:** 30 minutes |
| **Reflection and feedback:** The students analyze how observation can be a helpful tool to make inferences using their background knowledge. The teacher gives oral feedback at the end of the session.<br>**Time:** 10 minutes |
| **Data collection instrument:** Group discussion validation |
| **Construct to tackle:** Inferential ability and observation skills |

**Appendix M***: Differentiated Lesson planning sample*

Subject: English (Differentiated instruction)               Teacher: Castro, Tania
Linking subject: Technology
Grade: 7th
Date: May 14th /2019
Topic: Communication timeline
Number of lessons (2)

Learning objectives:

| Know | Understand | Do |
|---|---|---|
| How technology has improved communication along the centuries | Causes of technological advances of communication during the 21st century | Analyze the speed and effectiveness of communication in modern world |

| Tools for differentiated instruction |
|---|
| Communication Chart |
| Visual aids: Video retrieved from: https://www.youtube.com/watch?v=oxTUC5I22LU |
| Listening task: From cave drawing to emojis: Communication comes full circle /Marcel Danesi TED X Toronto |

| classwork | Home assignment |
|---|---|
| Graphic organizer for main aspects in communication | Worksheets provided by the teacher |

| Instructions |
|---|
| 1. As a group, brainstorm situations in which people typically need to communicate. We, for example, make a phone call to ask for a service
2. Hand out drawing paper and say that you will be describing
an imaginary situation in which communication is needed. Then students draw a picture of what was listened.
3. Now ask questions about the type of communication they have drawn, such
as, "Why do you think this was the best way of communication?", "How well do you know about the topic?
4. Explain that while listening, students should make the same kinds of inferences using word clues that they make when picture clues are available.
5. Practice with some sentences similar to these:
As the car turned west, suddenly the driver was almost blinded by the light from the sun. What time of the day is it?
He could almost feel his ankle swelling as he sat and looked hopelessly down the long path to the bottom. What is his problem?
6. Discuss some examples of inferences that can be made based on information contained within classroom listening material. |

| Follow-Up |
|---|
| Review this skill again and again as students listen together in class. Ask them to find examples of inferences in their listening activities and to write them in a list or mark them with removable sticky notes. Put up a poster listing inferences students make or share during class. |

NUMRICH'S SEQUENCE OF CRITICAL THINKING TASKS AND LISTENING

COMPREHENSION

**Appendix N:** *Timeline Implementation*

Timeline Implementation

| Event | May | | | | June | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | 6 to 10 | 13 to 17 | 20 to 24 | 27 to 31 | 4 to 7 | 10 June | 11 june | 12 June | |
| | 6 hours | 3 hours | 5 hours | 5 hours | 3 hours | 2 hours | 2 hours | 2 hours | 28 hours |
| First phase Intervention Scaffolding of listening, and instrument piloting | | | | | | | | | |
| Listening strategies and scaffolded activities | 3 | 1 | 1 | | | | | | |
| Pre listening stage Focus on the students world Critical thinking task Observing. Skill practiced: looking | 2 | 1 | | | | | | | |
| piloting critical thinking listening activity | | | 1 | | | | | | |
| While listening stage Focus on the text. Critical thinking task interpreting. Skill practiced: making inferences | | | | | | | | | |
| Making inferences from pictures | | | 1 | 1 | | | | | |
| Piloting Watson Glasser appraisal test | | | | 1 | | | | | |
| Post listening stage Focus Beyond the text Critical thinking task Analysing and evaluating. Skill practiced: Making logical conclusions | | | 1 | 1 | | | | | |
| Piloting Group discussion | | | | | 1 | | | | |
| Second phase Implementation | | | | | | | | | |
| Written Teacher's Journal | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| validation critical thinking listening activity | | | | | | 1 | | | |
| validation Watson Glaser test | | | | | | | 1 | | |
| Validation Group discussion | | | | | 1 | | | 1 | |
| Group discussion question | | | | | | | | | |

## Appendix O: Data management procedures

| | Students´insights | |
|---|---|---|
| | Question: How have listening strategies improved your listening skills. (If not what do you think are the most common mistakes and the way to solve them) Answers can be written either in English or Spanish | |
| | | |
| s1 | Cuando estamos escuchando yo me distraigo por eso me pierdo. Tengo que estar enfocada en lo que estoy escuchando. Los ejercicios de actitud de escucha me sirven para esta clase y las demas. | Attention/use of strategies |
| s2 | yo tengo que tener un ambiente donde este libre de la bulla para concentrarme. No me cuesta concentrarme pero es mas facil en silencio. Me inquieto mucho cuando tengo que permanecer sentada un rato por mi problema de columna. | quiet environment, bothering/anxiety/ |
| s3 | Yo no soy tan organizado en mis estudios y me cuesta mucho concentrarme porque me da sueño cuando tengo que estar atento. La silla es incomoda y no me gusta estar todo el dia sentado. La bulla me molesta para concetrarme y no logro entender lo que estan diciendo en los videos porque van muy rapido. Tengo que ser mas atento a lo que dicen para que no se me olvide | attention/lack interest/bothering situation/intention/Uncofortable/ Knowledge issue/Lack knowledge/ |
| s4 | Yo no esscucho muy bien lo que dicen en los audios y por eso no respondo. Tal vez si lo repiten una vez mas yo puedo escuchar mejor lo que se dice. Las estrategias son buenas y las ayudas visuales me gustan mas porque no estoy tan perdido | listening issues /second chances/visual aids/lack of training/tries to focus |
| s5 | Yo no entiendo lo que dicen en ingles porque la pronunciacion es dificil y asi aplique la estrategia se me dificulta entender. Aunque ya entiendo mas | L2 issues /strategies have improved but not enough/more assistance |
| s6 | I think that the activities give us the chance to improve our listening skills, I learned to apply the strategies. The visual aids give us hints. I have used the skills to improve in other subjects as well | use of strategies/visual aids |

| | | |
|---|---|---|
| s10 | Yo tengo que concentrarme bien en lo que me estan diciendo porque apenas me distraigo empiezo a perderme de la conversacion y se me dificulta seguir el hilo de la conversacion. A veces **no me interesa mucho lo que dicen** los profesores y estar en el mismo sitio sentado me produce fastidio, yo se que debo mejjorar esto por eso cada vez que me acuerdo que despues me pierdo me esfuerzo por enfocarme otra vez, aunque me cuesta. | attention/lack interest/bothering situation/intention |
| s11 | Si yo prestara mas atencion me iria mejor. Trato de no interrumpir en clase cuando no entiendo una palabra aunque es dificil porque despues se me olvida la palabra. **Yo tengo que seguir trabajando en ambientes de bulla (Aunque yo aveces las fomente)** pero lo importante es que debemos estar preparados para presentar el toefl cuando estemos en 11 Ademas el listening lo tenemos que aplicar en todo. por eso yo estoy poniendo de mi parte para no perderme. No me gusta tomar notas pero puedo imaginar lo que la otra persona podria decir cuando veo los videos silenciosos que usted nos puso para tratar de predecir lo que iba a decir el personaje. | atttention/noisy environments/noise triggering?Further situation/intention/useful application/ visual aids |
| s12 | A mi me ha parecido que se puede escuchar mejor con las tecnicas que la profesora nos ha enseñado. Yo no sabia que al tomar notas podia retener mas informacion. Necesito escribir para llevar el hilo de lo que escucho en el audio. **EL problema es que hacen mucha bulla en el salon** y no me dejan escuchar, yo trato de ignorar la bulla y continuar con mis actividades de listening. | useful strategies/Note taking/ writing aid/noisy environment/listening disturbance? Intention |
| s13 | **Yo no entiendo cuando me hablan muy rapido y me desespero.** Me gusta mas ver el video con lo que dice el video en ingles; asi puedo ver como se escribe y como se dice esa palabra. Lo malo es que **la bulla me distrae** y no me gusta perder nada de la clase | listening issues/ anxiety/visual aid/ Noisy environment/attention |
| s14 | I tend to focus on the main ideas and try not to translate word by word. When people talk fast I can ask them to repeat slowly something that I did not understand. I also like to take notes to refresh my memory when I need to remember some information. The teacher asks us what do we know about the image or maybe if we have seen it elsewhere. | note taking/ recall info/background knowledge |