The Effects of Classroom Type on Anxiety, Motivation, Interaction, and Vocabulary Development in a Novice Level TBLT Course for Young Learners

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THE EFFECTS OF CLASSROOM TYPE ON ANXIETY, MOTIVATION, INTERACTION, AND VOCABULARY DEVELOPMENT IN A NOVICE LEVEL TBLT COURSE FOR YOUNG LEARNERS

by

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Dedicated to

JT,

For always believing in me
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Abstract

Relatively little research has considered how tasks are performed and experienced by students in different types of classrooms. Research shows that innovative classroom designs can lead to higher levels of cognitive engagement, connections between form and meaning, and more diverse forms of input (Schmidt, 1990; Svalberg, 2012) and are particularly beneficial for young learners (Nunan 2013). While significant research has explored TBLT, very little has looked at its effectiveness with young learners, particularly in the foreign language classroom. (Butler & Zeng 2014, Ellis 2020).

The present quasi experimental mixed methods study examines the effects of the classroom setting on interaction processes and affective factors within the Spanish classroom with vocabulary as the target linguistic feature. Classroom comparisons are made between traditional and Montessori designs. Data was collected with a group of fifteen 4th and 5th grade novice language learners split into two TBLT Spanish classes during a one-month summer enrichment program. Each group of learners attended equal class time in a traditional classroom and in an age-appropriate Montessori classroom. Data on motivation, attitude, and anxiety was collected through uptake sheets given to learners at the end of the pre-task and the main task. Vocabulary data was collected through pre, post, and weekly vocabulary tests. Interaction data was collected through recording of pair task work, then transcribed and coded for total turns, off task turns, and vocabulary usage. Overall, the Montessori classroom design exceeded the traditional classroom in affective factors and vocabulary acquisition following previous research by Gurzinsky-Weiss et al. (2015) on innovative classroom design. Opinion gap tasks were most effective in terms of affective factors for young learners as well as rate of learning, while
information gap tasks promoted the highest levels of target language usage. Findings of this study allow for deeper understanding of how TBLT can be more effective for young learners in terms of classroom type and task type to increase interaction and vocabulary acquisition as well as promote positive effects on affective factors.
List of Tables

3.1 Participant Demographics
3.2 Information Gap Tasks
3.3 Opinion Gap Tasks
3.4 Classroom schedule
4.1 Descriptive Statistics for Spanish Vocabulary
4.2 Spanish Vocabulary ANOVA Results
4.3 Descriptive Statistics for English Vocabulary
4.4 English Vocabulary ANOVA Results
4.5 Descriptive Statistics for Off Task Talk
4.6 Off Task Talk ANOVA Results
4.7 Descriptive Statistics for Total Turns
4.8 Total Turns ANOVA Results
4.9 Descriptive Statistics for Test Data
4.10 Test Data ANOVA Results
4.11 Frequencies for Attitude in Information Gap Tasks
4.12 Frequencies for Attitude in Opinion Gap Tasks
4.11 Frequencies for Attitude in Opinion Gap Tasks
List of Figures

3.1. Montessori classroom design
3.2. Traditional classroom design
3.3. Research schedule
3.4 Task and Classroom Schedule
4.1 Spanish Vocabulary Use
4.2 English Vocabulary Use
4.3 Off Task Talk
4.4 Vocabulary Development by Task Type
4.5 Frequencies for Anxiety in Information Gap Tasks
4.6 Frequencies for Anxiety in Opinion Gap Tasks
4.7 Anxiety Frequencies Based on Task Type
4.8 Frequencies for Motivation in Information Gap Tasks
4.9 Frequencies for Motivation in Opinion Gap Tasks
4.10 Frequencies for Attitude in Information Gap Tasks
## List of Abbreviations and Key terms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBLT</td>
<td>Task Based Language Teaching</td>
</tr>
<tr>
<td>SLA</td>
<td>Second Language Acquisition</td>
</tr>
<tr>
<td>TSI</td>
<td>Task Supported Instruction</td>
</tr>
<tr>
<td>TBI</td>
<td>Task Based Instruction</td>
</tr>
<tr>
<td>Uptake sheets</td>
<td>Motivation, anxiety, and attitude data</td>
</tr>
<tr>
<td>Pre and Post-test</td>
<td>Repeated test for target vocabulary</td>
</tr>
<tr>
<td>TRJ</td>
<td>Teacher Reflection Journals</td>
</tr>
</tbody>
</table>
Table of Contents

List of Figures......................................................................................................................... Error! Bookmark not defined.

List of Abbreviations and Key terms..........................................................................................x

Chapter 1: Introduction................................................................................................................1

Overview....................................................................................................................................1

Statement of the Problem .........................................................................................................1

Research Context......................................................................................................................3

Research Questions ..................................................................................................................4

Chapter 2: Literature Review.......................................................................................................6

Task-Based Language Teaching (TBLT)....................................................................................6

Historical Background..............................................................................................................6

Theoretical Underpinnings.........................................................................................................8

Cognitive Perspectives...............................................................................................................9

Educational Perspectives...........................................................................................................10

Sociocultural Perspectives.........................................................................................................12

Psycholinguistic Perspectives.................................................................................................16

What is a Task?..........................................................................................................................19

Task Types ................................................................................................................................20

The Task Cycle..........................................................................................................................23

Task Supported Instruction (TSI) and Task Based Instruction (TBI)........................................25

Interaction in SLA....................................................................................................................27

The Role of Input in Interaction..............................................................................................28
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Role of Output in Interaction</td>
<td>29</td>
</tr>
<tr>
<td>Noticing Hypothesis</td>
<td>30</td>
</tr>
<tr>
<td>Empirical Interaction Research</td>
<td>31</td>
</tr>
<tr>
<td>Task-Based Learner Performance Studies</td>
<td>31</td>
</tr>
<tr>
<td>Task as Treatment Studies</td>
<td>32</td>
</tr>
<tr>
<td>Interactional Modifications</td>
<td>32</td>
</tr>
<tr>
<td>Negotiation for Meaning</td>
<td>35</td>
</tr>
<tr>
<td>Corrective Feedback</td>
<td>36</td>
</tr>
<tr>
<td>Individual Differences</td>
<td>37</td>
</tr>
<tr>
<td>Motivation</td>
<td>38</td>
</tr>
<tr>
<td>Anxiety</td>
<td>42</td>
</tr>
<tr>
<td>Task Complexity</td>
<td>42</td>
</tr>
<tr>
<td>Task Modality</td>
<td>43</td>
</tr>
<tr>
<td>Interaction with Young Learners</td>
<td>45</td>
</tr>
<tr>
<td>On and Off Task Talk with Young Learners</td>
<td>45</td>
</tr>
<tr>
<td>Considerations for Young Learners</td>
<td>46</td>
</tr>
<tr>
<td>Cognitive Functioning with Young Learners</td>
<td>46</td>
</tr>
<tr>
<td>Classroom types</td>
<td>47</td>
</tr>
<tr>
<td>Language Learning Research</td>
<td>57</td>
</tr>
<tr>
<td>Innovative Classroom Design in Educational Research</td>
<td>48</td>
</tr>
<tr>
<td>The Specifics of Innovative Classroom Design</td>
<td>49</td>
</tr>
<tr>
<td>Furniture Arrangement</td>
<td>50</td>
</tr>
<tr>
<td>Desk clusters</td>
<td>50</td>
</tr>
</tbody>
</table>
Uptake Sheets .......................................................................................................................... 82
Procedure ................................................................................................................................. 83
Coding and Analysis ................................................................................................................ 85
  Motivation, Attitude, and Anxiety ......................................................................................... 85
  Teacher Reflection Journals ................................................................................................. 85
  Vocabulary ............................................................................................................................. 86
  Interaction ............................................................................................................................. 87

Chapter 4: Results .................................................................................................................... 89

Introduction ............................................................................................................................. 89

Effect of Classroom Type and Task Type on Interaction Processes ................................. 89
  Spanish Vocabulary Interaction .......................................................................................... 91
  English Vocabulary Interaction .......................................................................................... 93
  Off Task Talk ...................................................................................................................... 96
  Total Turns ......................................................................................................................... 98

Effect of Classroom Type and Task Type on Vocabulary Development ....................... 99

Effect of Classroom Type and Task Type on Affective Factors ...................................... 103
  Anxiety ............................................................................................................................... 103
  Motivation ........................................................................................................................ 106
  Attitude ............................................................................................................................. 109

Summary ................................................................................................................................ 112

Chapter 5: Discussion ........................................................................................................... 115
Introduction .................................................................................................................. 115

Montessori vs Traditional ............................................................................................. 116

Interaction Findings ...................................................................................................... 116
  Vocabulary Usage ......................................................................................................... 117
  Turns .............................................................................................................................. 117

Vocabulary Acquisition .................................................................................................. 118

Affective Findings ........................................................................................................... 118
  Anxiety ........................................................................................................................... 118
  Motivation ...................................................................................................................... 120
  Attitude ........................................................................................................................ 121

Summary ......................................................................................................................... 122

Opinion vs Information Gap ........................................................................................... 123

Interaction Findings ...................................................................................................... 123
  Vocabulary Usage ......................................................................................................... 123
  Turns .............................................................................................................................. 124

Vocabulary Acquisition .................................................................................................. 124

Affective Factors ............................................................................................................. 126
  Attitude ........................................................................................................................ 126
  Motivation ...................................................................................................................... 127
  Anxiety .......................................................................................................................... 128

Summary ......................................................................................................................... 129

Conceptual Connections .................................................................................................. 130

Autonomy ......................................................................................................................... 130
THE EFFECTS OF CLASSROOM TYPE ON ANXIETY, MOTIVATION, INTERACTION, AND VOCABULARY DEVELOPMENT IN A NOVICE LEVEL TBLT COURSE FOR YOUNG LEARNERS

Chapter 1: Introduction

Overview

Research on task-based language teaching (TBLT) has become increasingly popular in second language acquisition (SLA) research (Skehan 1998a, Ellis, 2003, Bygate and Samuda 2008) as well as in educational research (Prabhu 1987, Willis 1996, Nunan 1989; 2004). While SLA methods continually evolve, the physical classroom design has remained relatively traditional (Weiss et al. 2015). Weiss et al. (2015) states that differing classroom designs can promote student centered learning, learner interaction, motivation, and positive attitudes which have all been a prominent theme in SLA research (Richards & Rogers 2014). The current study examines student interaction, learning, and affective states in two different types of tasks performed in traditional and Montessori classrooms with young novice level learners of Spanish.

Statement of the Problem

Significant research has contributed to SLA methodology, but very little has considered the physical classroom (Weiss et al. 2015), particularly for young learners. Nevertheless, research in both education and applied linguistics shows that innovative classrooms can lead to higher levels of cognitive engagement, student centered learning, and positive effects on affective factors (Schmidt 1990; Svalberg 2012, Richards & Rogers 2014). In SLA research,
innovative classroom designs have been shown to lead to more uptake in interaction and positive effects on motivation and attitudes (Gurzinsky-Weiss et al. 2015).

This study fills an important gap by providing a concrete example of an innovative classroom type based on the Montessori methodology which has significant alignment with TBLT. The present research provides an extensive look at pair interaction and individual vocabulary acquisition, anxiety, motivation, and attitude through both quantitative and qualitative data in different classroom settings with different task types. An analysis of affective factors builds on and integrates research within TBLT, innovative classroom design, and interaction between young learners. Qualitative data from teacher reflection journals provides a further explanation of data on interaction, vocabulary acquisition, and affective factors.

No research has been done integrating TBLT with the Montessori classroom design, nor considering the general effects of classroom design on motivation, anxiety, or vocabulary within TBLT in elementary foreign language classes. This study also fills a research gap by combining classroom design, a growing conversation within SLA, with TBLT. The dependent variables in this study (interactional processes, specifically with vocabulary development as the target linguistic feature (Shintani, 2016), motivation, and attitudes) are based on prior TBLT research and have been shown to be important factors in task-based learning. This study builds on prior research to see if classroom designs of the spaces where task-based interactions take place also impact these variables.
Research Context

This study took place in a Spanish as a foreign language class for 4th and 5th grade learners that was taught by the researcher in a public Montessori elementary charter school. The Montessori classroom is defined by Lillard (2007), as a “large, open space with low shelves, different sizes of tables that comfortably seat one to four children, and chairs that are appropriately sized for the children in the classroom.” The areas of the classroom are divided by low shelving. There are no seating assignments and students work at the workstations throughout the classroom alone or in groups. The classroom design is simple and clean without clutter to ease distraction. All task materials are at the center of the worktable. The charter school for the present study closely followed the description by Lillard (2007). The Montessori classroom had six tables divided by low shelving. They used only raw wood and natural colors to create a simple and clutter-free design. There was no front or back of the classroom. Alternatively, the traditional classroom included five double seater desks rather than round tables. There was a designated front and back of the classroom. At the front of the classroom there was a white board and a teacher’s desk was at the back of the classroom. Students sat in groups of two facing the front of the room with nothing physical to separate the groups. For both classroom types, task materials were given in a folder to each pair.

The present research situates TBLT within an innovative classroom design in order to explore its effects on affective factors, interaction, and vocabulary development. Two groups of elementary age learners attended a TBLT-style Spanish as a foreign language class in both Montessori and traditional classroom settings. Data was collected to assess learners’ vocabulary
development, interaction, motivation, anxiety, and attitude between the two classroom types. Differences based on task types were also analyzed.

A vocabulary knowledge scale adapted for children by (Koolstra & Beentjes, 1999, Kahn-Horwitz & Shimron, 2005, Cunningham & Graham, 2000, Jean & Geva, 2009) was used as a pre- and post-test at the beginning and end of the study to track learner progress. Vocabulary was the target linguistic feature for this group because they were novice speakers of Spanish in a non-immersion program.

This study replicated a Montessori-style classroom design for the innovative classroom type. As stated, research is continuing to find positive effects of innovative classroom design (Weiss et al. 2015; Schmidt, 1990; Svalberg, 2012; Richards & Rogers 2014). For example, research shows that innovative classroom design can lead to higher levels of cognitive engagement (Schmidt 1990; Svalberg, 2012) which is essential in creating connections between form and meaning. There are many parallels between the intentions behind Montessori classroom design and TBLT, namely, higher levels of learner motivation, autonomy, and task work. This will be further explored in the following chapter.

Research Questions

To address the research gaps presented in this section, this quasi-experimental research study uses mixed methods to explore the effects of classroom type on interaction processes, vocabulary development, and affective factors by considering the following research questions:
1. Does classroom design impact peer interaction, vocabulary, development, and learner attitudes, motivation, and anxiety?

2. Does task type impact peer interaction, vocabulary, development, and learner attitudes, motivation, and anxiety?

This dissertation will begin with research that explains the importance of investigating the effects of classroom design in the elementary Spanish as a foreign language classroom on motivation, attitude, anxiety, and interaction as well as how this is a topic in need of further research. Beginning with an overview of TBLT, we will explore relevant theoretical perspectives. Research on different task types will be considered as well as an extensive overview of the task types that will be used in the study followed by empirical research examples. Background research on the interaction approach consider the role of input, output, negotiation for meaning, and noticing followed by an overview of interactional modifications and empirical methods of research in that area. Corrective feedback, motivation, and anxiety will be considered within the affective domain of individual differences. Interaction research with young learners will be discussed as well as linguistic and educational research on classroom design.

This study fills an important research gap by combining classroom design, a growing conversation within SLA with TBLT. The use of interaction—specifically with vocabulary development as the target linguistic feature (Shintani 2016)—motivation, and attitudes as independent variables is in line with many studies and has proven an effective and important consideration in task-based research studies.
Chapter 2: Literature Review

Task-Based Language Teaching (TBLT)

Task Based Language Teaching (TBLT) is an approach to second language acquisition (SLA) where students are given real world tasks that focus on meaning. It involves the use of language to solve nonlinguistic problems (Branden 2006). The first proposals of a task-based approach emerged in the late 80’s (Long 1985; Candlin 1987; Breen 1989). Each of these researchers provided an overview of how a task-based methodology might be implemented, each focusing on a different aspect of the rationale for task-based learning. Long (1985) critiqued the isolated presentation of linguistic concepts as they do not prepare students to create a “coherent whole.” He proposed TBLT as a solution to integrating methodology and syllabus. Candlin (1987) focused on a critique of previous approaches emphasizing the redefining of the role of teacher and student by stating that students should have a role in negotiating course content. Prabhu (1987) conducted a study based in India, using the structural-oral situational method which based language learning from a set of vocabularies and sentence patterns. He argued that in order to prepare students for real language use, real world contexts and conditions must be mirrored in the classroom. Nunan (1989) provided a practical approach to tasks for educators. Similar to Long, he emphasized the importance of a task-based approach blurring the lines between methodology and syllabus in favor of a more integrated approach.

Historical Background

TBLT is rooted in the Communicative Language Teaching (CLT) movement of the 70’s and 80’s as well as ongoing research in SLA (Ellis et al. 2019). TBLT stems from the question of
why one is seeking to learn a language, which is a question that isn’t often asked by learners or teachers (Branden 2006). Previous methods of language instruction focused on the synthetic approach which expected learners to acquire isolated grammar concepts in an additive linear manner; however, research began to show that learners could learn multiple structures simultaneously. Long and Crookes (1993) referred to this as a ‘complex mapping of form-function relationships.’ Researchers began to consider that learners had their own internal mapping system and ordering for L2 acquisition. Krashen (1985) proposed that this process followed the process children utilize in acquiring their first language. The natural approach (Krashen and Terrell 1983) was an attempt to apply these ideas with pedagogical practices and with a focus on meaning, what is now a central tenet of TBLT (Ellis et al. 2019).

CLT emphasized communicative competence with a focus on the functionality of language (Hymes 1971; Halliday 1973). It was a movement away from the synthetic method of teaching (Wilkins 1976). In the synthetic approach, linguistic elements were the basis of the syllabus. These elements were isolated, predefined, and taught separately. CLT emphasized communicative competence with a focus on the functionality of language (Hymes 1971; Halliday 1973), moving away from the synthetic method of teaching (Wilkins 1976).

In the synthetic approach, linguistic elements were the basis of the syllabus. Long and Crookes (1992, 1993) proposed three main problems with this approach. First, they explained how the language the learner is exposed to is artificial, and therefore, is unlikely to translate into any meaningful usage outside of the classroom. Secondly, they pointed out how previous research shows that learners do not learn grammar concepts in an isolated manner in an additive,
linear fashion, but rather as a “complex mapping of form-function relationships” (Long and Crookes 1993). The final problem they propose is the expectation of the synthetic approach for learners to reach mastery of a new form lesson by lesson. Previous SLA research (Prabhu 1984, 1987) shows that learners almost never move from no knowledge to a target mastery in just one step.

With these challenges arose a need for a more communicative way of teaching. Johnson (1982) proposed the need for a deep-end strategy which is placed in a real-world situation where they must use language that hasn’t necessarily been taught. Howatt (1984) developed a method in which content was defined by “linguistic realizations of notions and functions.” Unfortunately, these were both problematic and there never arose a method that was applicable and well defined (Ellis et al. 2019). This research, however, was a part of the basis for TBLT.

In contrast to some communicative methodologies, TBLT does not focus on meaning while excluding a focus on form, but rather integrates the two. Some researchers (Skehan 1998; Long and Norris 2000) have asserted the integration of focus on meaning and focus on form as a key feature of TBLT. After looking at an overview of TBLT, an extensive look at the theoretical underpinnings provides significant interdisciplinary support.

**Theoretical Underpinnings**

As a research-based pedagogy, task-based language teaching has a rich background of theoretical research. This chapter will begin by looking at cognitive, educational, sociocultural, and psycholinguistic underpinnings.
**Cognitive Perspectives**

Cognitive interactionist theories form a basis for the interaction approach and provide theoretical underpinnings for TBLT. As research has expanded, these theories have supported TBLT research by emphasizing implicit learning, incidental learning, and the role of attention. It has been found that L2 learning happens implicitly when the focus is on meaning. Implicit learning involves noticing while incidental learning happens without consciousness. Focus on form is still necessary, however, so that learners can attend to the linguistic forms that are receiving through input which illustrates the role of attention.


The noticing hypothesis stated that learners need to notice linguistic aspects of language through input in order to effectively acquire language. Schmidt (1990) stated that noticing happens when learners catch onto grammatical patterns such as plural or past markers and are then able to replicate this pattern.

While Schmidt originally claimed that this requires a focus on form, he later modified his stance to state that this can happen implicitly or explicitly. He claimed that understanding could be helpful but was not necessary for L2 learning. This was very relevant in the field of SLA as conscious and unconscious processes had been widely debated. This also had important
implications for TBLT research as the role of focus on form as well as implicit and explicit learning are central components. Schmidt’s (1990) concept of noticing led many TBLT researchers to begin advocating for the role of “consciousness raising” activities which included a focus on form (Robinson 1995, Fotos and Ellis 1991, Long 1991). This claim was particularly relevant as it contradicted Krashen’s (1981) claim that learning is primarily a subconscious process.

Cognitive perspectives provide an important basis in interaction research which is a key component of the present study. A more in-depth overview will be included in the section on the interaction approach. Another important basis for the present study which takes place in an elementary classroom setting are educational perspectives. Educational perspectives provide another significant theoretical basis for TBLT.

*Educational Perspectives*

Within the affective domain, which will be discussed in more detail in the section on individual differences, exist the less researched educational perspectives that form a basis for TBLT. These are based primarily on the research of Dewey (1913, 1938) on the theory of experience and follow up research by Maehr (1984) on the affective dimensions of learning.

The theory of experience by Dewey (1913, 1938) looked at learning as beginning with learner interest or impulse towards a certain theme or topic. In this stage, learners organize and negotiate their own means to achieve their purpose within a given context. He suggests that for this reason, teachers use ordinary experiences as the basis for creating materials in the classroom.
Long (1985) later described the need for real world materials as part of tasks in TBLT. While much of the research on TBLT has separated the cognitive and affective domains, Dewey (1913, 1938) saw them as integrated and inseparable.

The following stage in the theory of experience is that learner interest leads to intelligent effort. This is based on the idea that learner agency guides the learning process. This emerges in TBLT when discussing task complexity and builds off of more recent research previously mentioned by Althobaiti (2014) that states that language learning is an individual cognitive effort. The possibility of a learning occurrence is dependent on the learner's cognitive capacity as a result of input, interaction, noticing, and output.

According to Dewey, intelligent effort of learners leads to a unified activity. In a unified activity, learners are immersed and motivated by completing the activity. He explains that the types of activity matters in initiating learner interest. Specifically, activities must draw on learners' self-identification as well as their social and emotional needs. Researchers in TBLT have built on and expanded Dewey’s theory. Long (2015) explained that meeting learners' needs is more important than their interest. He argued that interest follows when needs are met. Other researchers took a more general approach to engaging learner interest by choosing topics that are generally interesting to the learner population (Prabhu 1987; Ellis 2003).

Another key educational perspective that provides a theoretical basis for TBLT is Mahr’s theory of personal investment (Maehr 1984). He offers five main variables that determine the potential for meaning in activities for learners. This theory looks at motivation in the classroom
as well as learners’ previous experiences and sociocultural context. The goal in each activity or
task is for learners to find meaning which leads to investment. It states that when learners are
invested, the task is more beneficial, and learners succeed in completing it at higher levels.

Lambert (1998) built on Maehr’s theory and created the following adaptation of the five
variables for TBLT: personal experiences, sociocultural contest, task design, social expectations,
and information. Lambert advocated for learners' personal investment in L2 task performance.
He differentiated between learner generated content (LGC) and teacher generated content (TGC).
LGC tasks, he explains, lead to more learner investment as well as connection to their
sociocultural and emotional needs (Dewey, 1913, 1938). Sociocultural theories build off of
educational theories and provide another important theoretical basis for TBLT.

Sociocultural Perspectives

Sociocultural perspectives of SLA did not begin developing until the late 1900s. The
primary basis is research by Vygotsky (1978) and Leontiev (1981) with the activity theory.
Vygotsky’s work (Vygotsky 1978; Swain 2013) states that individuals are not isolated and
cannot be studied outside of their “history, culture, and society.” He explained that the cognitive
aspects of learners cannot be studied without also looking at how the learner engages with
others.

The main difference from cognitive theories that inform TBLT is how sociocultural
theories look at incidental and intentional language learning. TBLT research advocates for
implicit learning. Within cognitive research, Long (2014) explained that adults have reduced
ability to learn implicitly, therefore some facilitation and form focused learning is necessary. Nonetheless, he still rejects explicit language instruction, but rather advocates for focus on form within tasks. Alternatively, sociocultural approaches in SLA focus on various types of form focus (Swain 2013) such as explicit guidance and correction, imitation, and private speech. There is a specific focus on language related episodes (LRE) in which learners navigate explicit focus on form in various ways. The contrast between Long (2014) and other cognitive perspectives and SCT is incidental acquisition and focus on form versus explicit instruction.

Primary research in sociocultural perspectives by Thorne (2006) and Lantolf and Poehner (2014) state that SLA happens within social activity rather than as a mental activity as cognitive interactionist and psycholinguistic perspectives suggest. Much discussion has happened both for and against this perspective. Long (2014) argued that the core concepts, which will be discussed below, are “inadequate for experimentation.” Swain et al. (2011) disagreed by arguing that the construct of mediation provides a sufficient basis for experimentation by looking at not just how learning happens as cognitive theories address, but where it happens, within in social interactions.

The core constructs of SCT are inner speech, appropriation, mediation, self-regulation, and The Zone of Proximal Development (ZPD). ZPT is very specific to SCT. Within this construct, the learner is able to achieve more by working with others than might be possible working alone. While sometimes confused with Krashen (1981)’s concept of ‘i +1,’ ZPD differs in that the focus is on interaction and not necessarily on input. Swain et al. (2011) explained that a core component of ZPD is intersubjectivity. This looks at the role of the coparticipants of a task
and their shared understanding of their roles. The coparticipants include each learner as well as the teacher. Intersubjectivity happens when all of the participants work together to accomplish the same goal. The theoretical basis of SCT proposes that there is no universal route to L2 acquisition. Sociocultural research on TBLT utilizes focused dynamic assessment and concept-based language instruction.

Dynamic assessment integrates mediation into collaborative talk and assessment. Lantolf (2009) explains how this method shows not only what students know, but also their potential future learning based on what they can achieve with help. There are two main ways of implementing dynamic assessment: interventionist and interactionist. Both look at learners’ performance of tasks to see their potential. These provide some of the most foundational forms of scaffolding that leads researchers to task-based assessment and a more valid assessment that previous proposals of unmediated tasks (Norris, 2009).

Concept-based language instruction builds off the previous idea of learners building their own scientific concepts of language. This idea was general and problematic in the simplistic form. Research by Lantolf (2007) found that while explicit grammar instruction is important, traditional systemic principles of grammar do not provide learners with a conceptually organized grammatical knowledge.

Based on research by Gal’perin (1989) and Lantolf and Zhang (2017), concept-based language instruction has taken on five main phases. First, objective based teaching leads learners to connect everyday information to scientific knowledge. Secondly, a visual representation or
Schema for the Orienting Basis of Action (SCOBA) of this information is provided. Thirdly, the SCOBA is integrated into a task which involves social learning. The cycle finishes with more communicative activities for learners to put the information into practice.

Neguerela and Lantolf (2006) conducted a foundational study on concept-based language instruction that applied these five phases to a university level Spanish as a foreign language class. They analyzed learners' internalization of grammar concepts by collecting verbal explanations at the beginning and end of the course. The results showed that these phases produced higher levels of conceptual understanding and improved accuracy in task performance.

Concept based language instruction has been considered a part of task supported language teaching, which we will discuss later, but in general this categorization separates it from task-based language teaching. This is due to its omission of implicit and incidental learning.

Arguably, one of the most beneficial aspects of SCT as it relates to TBLT is its application to task implementation offered to teachers. Implementation within SCT is broken down into three areas: graduated feedback, collaborative dialogue, and dynamic assessment. However, SCT is not a highly applicable theory as it does not provide a structure for course creation in terms of task selection or sequencing. It puts significant responsibility on the teacher to create these sequences, assess student needs, design tasks, and create a syllabus. Dynamic assessment requires teachers to mediate tasks as a form of assessment which is not practical with larger class sizes.
SCT does offer teachers an overview of how implementation of tasks affects SLA. Ellis et al. (2019) argues that this perspective feeds directly into TBLT by showing that “participation is learning.” While many researchers have argued that sociocultural and cognitive perspectives are incompatible, Ellis (2000) proposed that both could be beneficial by citing research by Lier (1996) on dual visions for teachers that look at both long term pedagogy as well as moment by moment teaching decisions. The theoretical basis that there is no universal route to L2 acquisition as well as the analysis of dynamic assessment and concept-based language instruction is limited as research has been done primarily on adult or university level learners. This leads to a final theoretical consideration. Psycholinguistic perspectives, like SCT, have significant connections to cognitive theories.

**Psycholinguistic Perspectives**

At the basis of psycholinguistic perspectives of TBLT are the Limited Attentional Capacity (LAC) approach (Skehan 2014) and the Cognition Hypothesis (CH) (Robinson 2015). Cognitive focused research on TBLT has focused mostly on complexity, accuracy, and fluency (CAF) (Ellis 1987; Ellis et al. 2019). There are three main areas of analysis within the psycholinguistic perspectives. The first is complexity which includes lexical diversity and lexical sophistication. Lexical diversity refers to the ratio of different unique word stems or types, to the total number of words or tokens. It is analyzed by looking at type-token ratios (Ellis et al. 2019). Lexical diversity provides distinction between native and nonnative speakers. The focus of lexical diversity is on the linguistic abilities of the speaker (Skehan and Shum 2017). Lexical sophistication defines difficulty on the basis of frequency and presence of difficult words. Unlike
lexical diversity, there is no distinction between native and nonnative speakers. The second area of analysis is accuracy. Foster et al. (2000) broke this down into three prominent categories: proportion of error free clauses, errors per 100 words, and error gravity. Proportion of error free clauses has the highest amount of research. Error gravity considers all errors as weighted differently depending on their effect on communication. Foster et al. (2000) argued that, for this reason, error gravity has the most construct validity. The final area of analysis is fluency which has been broken down into three dimensions: breakdown linked fluency, repair linked fluency, and speed. The distinctions and definitions of these have changed over time. Fluency plays an important role in the research on Limited Attentional Capacity approach (Skehan 2014).

The focus of the Limited Attentional Capacity (LAC) is primarily on structure and working with learners' structural repertoire (Skehan 2014). This approach uses the CAF framework. These studies, particularly the one by Foster and Skehan (1996) tended to focus primarily on either structure or accuracy. One factor usually suffered while the other took the primary role. This supported research about learner limitations as using all of ones working memory on accuracy for example, allows little space for structure. This approach has continued with some changes to its original limitations. Foster and Tavakoli (2009) as well as Skehan (2015, 2018) explained how this approach brings light to the limitations of the working memory so that they can be overcome.

While there is an extensive research base on CH which is detailed below, the research on LAC is more minimal. The focus has been on predictions rather than empirical studies. Overall, many of these predictions have been proved weak (Robinson 2007a). CH was developed by
Robinson (2011) and uses the CAF framework. While CH considers structure primary, the focus is on the amount of input that learners can receive to build internal structures (Foster et al. 2000). CH developed over time and eventually was renamed to the SSARC Model (stabilize, simplify, automatize, reconstruct, and complexify).

CH has a stronger focus on linguistic analysis including task sequencing, the role of feedback, syllabus design, and SLA (Given 1985; Ellis and Robinson 2008). Like LAC, CH also acknowledges the presence of the working memory, Robinson explains that it differentiates the role of attentional resources. Attentional resources have the potential to expand. For this reason, Robinson calls them “resource pools.” This creates a separation between different modalities such as those included in the CAF framework (complexity, accuracy, and fluency). Drawing on structure, therefore, doesn’t necessarily deplete the accuracy resource. This has significant implications for tasks since learners could draw on multiple modalities in order to make use of the resource pool.

Task difficulty is thus determined by the learner rather than the task itself. Ellis et al. (2019, 80) explains that CH distinguishes the cognitive demands of a task as either resource directing variables and resource dispersing variables. Thus, the basis of CH looks at task complexity. As CH moved into SSARC, these variables were looked at in more detail. According to Robinson (2015) two main principles exist. First, task variables do not influence sequencing, and secondly, resource-dispersing variables should increase before resource-directing variables. This is in order to better guide learners through the mind mapping process and help them to create their own autonomy of thought.
Theoretical underpinnings provide a basis for TBLT as a research-based pedagogy, but TBLT research provides specifications for implementation beginning with a definition of task, the central unit of TBLT.

What is a Task?

The definition of a task is pivotal in understanding TBLT. Long (1985) first defined a task as things that people do in everyday life such as “painting a fence, dressing a child, or filling out a form.” He said that these tasks are undertaken freely and regularly for the sake of others or a personal reward. Crookes (1986) and Carroll (1993) further elaborated on this idea by stating that a task includes a ‘specified objective.’ Bygate et al. (2001) combined and built on these ideas by defining a task as “an activity which requires learners to use language, with an emphasis on meaning, to attain an objective.” Van Braden (2006) added to that, by defining a task as “an activity in which a person engages in order to attain an objective, and which necessitates the use of language.” An important part of task-based language learning is that the tasks are not linguistic in nature. Bachman and Palmer (1996) and Bygate et al. (2001) both stressed that the learner’s goal is not linguistic, but rather driven by the real world, meaningful reward that Long (1985) originally proposed. For example, a linguistic goal means that learners successfully complete the task when they have used the correct forms of words for a particular activity. Alternatively, a real-world goal means that learners complete the task itself such as navigating to a certain part of the classroom based only on oral directions from another learner. In tasks, language must be necessary for performance and fulfillment of the task.
The definition of task has continued to evolve into ‘task-as-a-workplan,’ defined by Ellis (2003). Task as a work plan focused on the outcome and evaluation of the task, which Ellis states is achieved when the “correct or appropriate content has been conveyed (Ellis 2003 p. 16).” He explains how learners must lean on their linguistic resources to solve the task. This also means that the task can be created to predispose specific forms yet is still reflective of and built on real world language use. Ellis explained that a task can be oral or written, and productive or receptive; there is the flexibility for the task to engage various cognitive processes. According to Ellis and Shintani (2014) there are four main criteria for a task as a work plan. First, the focus is on meaning, as discussed previously. Secondly, there is some sort of gap. A gap requires learners to either convey information, reason, or express an opinion. Therefore, tasks can be organized into the following three categories: information gap, reasoning gap and opinion gap. Thirdly, a task requires learners to draw on their own internal resources. They may use both their L1 and L2 as well as nonlinguistic resources. Finally, a task must have a communicative outcome that is clear. This means that successful completion of the task is not linguistic, but rather communicative. For example, a task might require learners to identify a person based on a written description. Successful completion of this task means that the student is able to identify the correct person, not whether or not they used certain linguistic forms in the process or presentation. TBLT and task research have continued to drive a significant amount of research on SLA and pedagogy as has been written about in books by Long (2015), Branden (2006), Ellis et al. (2020), and Mackey (2020).

**Task Types**

Many researchers have offered categorizations and types of tasks. For example, Willis (1996) offered six main types: listening, ordering and sequencing, comparing, problem solving,
sharing personal experiences, and creative. Ellis et al. (2019) described some of the most common task features. First tasks can be one-way or two-way. In a one-way task, one learner has the needed information that the other must figure out. In two-way tasks, both learners have information to exchange. Secondly, there are monologic and dialogic tasks.

In a study on conversational adjustments in tasks, Slimani-Rolls (2005) analyzed three task types: dyadic set-up in a one-way information task, a two-way information task and a decision-making task. She found that two-way communication tasks led to the most conversational adjustments. These task types were adapted and simplified into two-way information gap tasks and opinion gap decision making tasks for the present study.

Monologic tasks require a longer turn for one learner to perform the task in contrast with dialogic where learners take shorter turns. Dialogic tasks require more interaction. Thirdly, there are closed and open tasks. In closed tasks, there is a limited set of possible outcomes (usually an information gap) while in an open task the outcomes are essentially limitless (usually an opinion gap). Fourthly, there are convergent and divergent tasks. Convergent tasks are opinion gap tasks in which learners must come together on an agreed solution while divergent tasks allow them to reach their own various outcomes with possibly more than one goal. Finally, rhetorical mode tasks are those that include rhetorical presentation, argument or description. Ellis et al. (2019) added to this the importance of differentiating between real world and pedagogic tasks. Real world tasks have situational authenticity while pedagogic tasks do not; however pedagogic tasks still provide interactional authenticity.
Prabhu (1987) described tasks as input- or output-based. Input-based tasks focus more on learners' internal processing and production while output-based tasks require spoken or written output from the learner. Ellis (2003) presented the distinction between unfocused and focused tasks. Unfocused tasks aim to generally expose learners to language while focused tasks direct learners towards a specific use of language. Loschkey and Bley-Vroman (1993) distinguished different levels of form focus in tasks: tasks where the linguistic form is natural, useful, and essential. If the form is natural in a task, the task provides a context where competent speakers would often use the linguistic form. If it is useful, using the linguistic form can help the learners achieve the task outcome more efficiently (note that these categories overlap—if the structure is useful, it is generally also natural). Finally, tasks where the linguistic focus is essential are those in which it is not possible to communicate as required to achieve the task outcome without using the linguistic form.

Tasks can differ in the ways that learners focus on language more generally. This is often quantified in terms of the global fluency, accuracy, and complexity of language use (rather than the use of a particular linguistic target). In a study on the influence of planning on task type, Foster and Skehan (1996) analyzed three task types to determine how they promoted learners focus on different aspects of linguistic production. The three tasks used were as follows: a personal information exchange, a narrative based on pictures, and a decision-making task. The personal narrative involved one learner describing to another how to navigate to their house. The narrative task required learners to sequence and construct a story from 5 pictures. The decision-making task placed the highest cognitive load on learners according to Foster and Skehan (1996). In this task, learners had to act as judges and assign new sentences for a list of offenders. They gave examples of other decision-making tasks such as identifying, selecting, matching, sorting,
ranking, and sequencing. After considering task types, it is important to consider how the task is situated within the class. The following section will explore the three-phase task cycle and where the task is situated within the class structure in TBLT.

*The Task Cycle*

While task is the central unit of TBLT, the methodology follows a three-phase system. It begins with a pre-task in which some sort of presentation of the material is offered to the learners. This can include alternative focus on form strategies such as modeling. There is significant space here for the learner agency. The main task is the central part of the lesson and follows the criteria above. The lesson finishes with a post-task stage in which there is some sort of reflection and/or repetition of the material. According to Ellis et al. (2019), the pre-task has three main purposes: arouse learner interest, prepare learners for the task, and provide learning opportunities. Willis and Willis (2007) offered a specific example of how teachers can raise learner motivation in the pre-task preceding comprehension tasks. They suggested having students make predictions about the text or visual. This engages learners and provides them with implicit motivation for the main task. The second aim is to prepare learners for the task. Learners should have a clear understanding of the procedure and outcome of the tasks as well as provided with the necessary linguistic knowledge. It is important to clarify that while this can be form focused, it is not grammatical. In the pre-task, it is best to provide learners with lexical and vocabulary knowledge. According to Ellis et al. (2019) the goal is to scaffold, not stipulate. The final aim is to provide learning opportunities. This can take many forms such as allowing learners to brainstorm in groups, teacher modeling, or filling out a pre-survey. The goal is to allow students space to focus this attention on form and allow more cognitive space during the main task.
As discussed in the previous section, the main task is the central part of the lesson. The entire lesson revolves around the main task. In the most general sense, pre-task prepares for it and the post-task reflects or follows up on it. Success in tasks is primarily assessed by the successful completion of each task rather than the mastery of particular linguistic forms or vocabulary. Rather than asking students to demonstrate their linguistic knowledge, TBLT assesses learners by looking at their ability to accomplish the target task (Long and Norris, 2000).

The lesson finishes with a post-task stage which focuses on at least one of the following: repetition, focus on forms, or reflection. Post tasks that focus on repetition can be procedural which means the process is repeated with different content. They can also use content repetition in which the content is repeated, but with a different procedure. Within focus on form, there are a few options. This can be a place where there is some grammar instruction if necessary. This might be helpful as learners see the need for it after struggling with these structures during the task. Another way is for teachers to provide general corrective feedback by focusing on typical errors they observed during the tasks. Finally, a model can be provided. The teacher or a competent learner can model how the task and learners can consider the gap between this and their own performance. Within reflection, there are two main types: reflective accounts and transcription. Reflective accounts allow learners to consider what they learned, their own performance, and their perception of the task itself, and/or their attitude. The open-ended nature of this method can be very beneficial. Secondly, the post task could take the form of
transcription in which learners reproduce theirs or a peers’ performance. This provides opportunities for both self-correction as well as corrective feedback from the teacher.

An important aspect of the task cycle is the role of the teacher. According to (Van Braden 2006), the learner occupies the central role in the classroom with agency to determine use of linguistic forms, course content, and evaluation of task outcomes (Benson 2001, Breen and Candlin 1980, Nunan 1996, Shohamy, 2001). The role of the teacher in TBLT is pivotal. Van Avermaet et al. (2006) argue that the teacher is the learners most privileged interlocutor. Prabhu (1987) argued that in order to prepare students for real language use, real world contexts and conditions must be mirrored in the classroom. It is the role of the teacher to create and mediate these. With so many variations of task type and both the simplicity and complexity of the task cycle, it is inevitable that there would be debate within research circles about which aspects can fall into which parts of the task cycle. There are some debates and distinctions amongst researchers regarding minor aspects of TBLT methodology. The following section will explore task supported instruction (TSI) and task based instruction (TBI), two fields of research within TBLT.

Task Supported Instruction (TSI) and Task Based Instruction (TBI)

There exists debate between task-supported instruction (TSI) (Ellis 2017) and task-based instruction (TBI) (Long 2016). Li et al. (2016, 2018) conducted two foundational studies comparing the two. According to Li et al. (2016), in TBI, there is no prior explicit instruction as there is in TSI. Alternatively, TBLT or TBI focuses on addressing mistakes as they arise and not primarily before (Long 2016). Task-supported instruction follows the presentation-practice-
production (PPP) structure as well as the structural syllabus. According to (Loschky & Bley-Vroman 1993), PPP has three main parts. First, learners are presented with the target feature, in this case, the vocabulary. Secondly, they have time to practice in controlled production activities. Finally, learners use the linguistic feature that they have been given in structure-based production tasks.

TSI is based on and supported by skill acquisition theory (DeKeyser 1998, 2003, 2007, 2015). Conversely, TBI is based on the interaction hypothesis and research in which no pretask instruction was included (Kim 2012; Révész, 2009). In arguing for TBI, Willis and Willis (2007) offer the benefits of grammar instruction in the post task cycle. They offer three main reasons for this. First, more contextualization of the grammar is likely based on the task. Secondly, learners will see the need for learning the specific forms after having difficulty communicating in the task. Finally, in criticism of TSI, learners may focus too much on form, then continue that into the task rather than focusing on meaning. It is also important to note that other focus on form exist and can be integrated into the pre task such as modelling (Kim & McDonough, 2011) and guided planning (Forster & Skehan, 1999).

Li et al. (2016) conducted an experimental study in which they looked at the effectiveness of TSI in comparison to TBI on learners' English passive construction. Their results showed that the group that received explicit pre-task instruction along with feedback, combining TBI and TSI, had the highest scores on the grammaticality judgment test (GJT). No differences were shown on the elicited imitation test (EIT) for either TBI or TSI instruction.
In their follow up study, Li et al. (2018), examined the impact of explicit grammar instruction as a pretask on learners' explicit and implicit learning of the objective. In congruence with their previous study, the GJT showed that learners learned more when explicit pre-task instruction was used. They found that TSI leads to higher levels of explicit knowledge, but more research is needed to determine its effects on implicit knowledge.

In a study on TBLT compared to production-based learning, Shintani (2011) used present-practice-produce (PPP). She found that they both led to different interactional processes. The learners in the TBLT lessons seemed to show more authenticity in their interactions while learners from the PPP activity seemed to use more “classroom discourse.” Generally, advocates of PPP have been critical of TBLT. For example, Swain (2005) stated that TBLT is limited in it’s focus on vocabulary teaching. Before Shintani (2011), the only study on TBLT and PPP together was Sheen (2006) who separated and compared the two approaches.

The present study analyzes classroom type, vocabulary development, and affective factors during task-based interactions between low proficiency, child foreign language learners. A key component of this study is learner interaction. Based in cognitive theories, the interaction approach has been studied extensively within TBLT and will be explored in the following section.

**Interaction in SLA**

As discussed in the section on theoretical underpinnings, cognitive interactionist theories provide an important basis for TBLT. They support two main tenets: L2 learning happens
implicitly while learners communicate and focus on meaning, and interactional modifications including feedback, negotiation of meaning, and focus on form allow learners to become aware of linguistic form during meaning focused communication, which can help learners develop new form-meaning connections. The present study will consider the role of interaction in the TBLT classroom.

The interaction hypothesis (IH) as defined by Long (1996) looked at learners’ negotiation of meaning when working with others. Long’s work began to look at the relationship between interaction and cognition. Mackey and Gass (2007) expanded on Long’s work through the development of the interaction approach. They defined this as the process that happens when learners ‘are involved in interaction, receive feedback, and produce output (Mackey and Gass 2007, p. 176). This provided an important basis for TBLT as tasks could be created specifically to provide input which would lead to various types of interaction.

This section will consider the extensive research foundations for the interaction approach and their role as theoretical underpinnings of TBLT beginning with an exploration of input, output, negotiation for meaning and noticing. The theoretical overview will be followed by empirical interaction research that looks at individual differences, interactional modifications, and interaction research specifically with young learners.

**The Role of Input in Interaction**

Interaction research began with the input hypothesis as proposed by Krashen (1977, 1980). The input hypothesis, which presented the concept of ‘i+1’ which means that learners
have better language development when input is slightly higher than their current level. Krashen’s (1978) research on the input hypothesis looked at adult second language acquisition and stated that learning required significant amounts of comprehensible input. He viewed input as primary and output as a reflection of learning. This concept has since been refuted in research. Brown (2000) stated that it was oversimplified, and McLaughlin (1978) questioned its lack of basis in empirical research. Mackey (2007) stated that comprehensible input alone is not sufficient for learning. Mackey (2007) cited Swain’s (1985) research in support of this rebuttal. Swain’s (1985) research on output will be discussed in more detail in the next section.

Long provided a modification of the input hypothesis with the proposal of comprehensible input (Long 1980, 1983, 1985). He stated that interaction is an integral part of input and learners negotiate meaning through interaction with others. His work looked at the importance of environment in facilitating interaction and explained that the learners processing capacity played an important role in negotiation of meaning through interaction which includes receiving corrections. Longs modifications combined input, interaction, and output.

The Role of Output in Interaction

A focus on output was introduced by Swain (1985) with the output hypothesis which proposed that in order to acquire language, learners also have to produce it. This was followed by her work on modified output. In 2005, Swain presented the concept of modified output, when a learner rephrases their utterance in the L2 in response to feedback. She stated that this is positive for language development because it is a sign of learner uptake.
Swain’s (2005) article provided a foundation for output and discussed three main functions: noticing, hypothesis testing, and metalinguistic reflection. Swain explained that through output, a learner might notice gaps in their language and, therefore, draw on other resources to fill that gap. This is referred to as noticing. Hypothesis testing happens when a learner produces output and refers to cues and feedback from their interlocuter to determine errors. Metalinguistic reflection refers to learners’ ability to internalize linguistic knowledge through output. Output, then, can lead to modified output which encourages processing of language and noticing of linguistic deficiencies. In an empirical study with Spanish learners in a foreign language class, Gurzynski-Weiss and Baralt (2015) found that modified output was a strong predictor of accurate noticing of feedback. Another empirical study by Mackey (2006) found positive relationships between interactional feedback in the classroom and noticing.

**Noticing Hypothesis**

The noticing hypothesis was put forth by Schmidt (1990). It built on previous research but stated that learners need to notice linguistic aspects of language through input in order to effectively acquire language. Schmidt’s (1990, 1994) research focused on the idea of attention which he separated into two types: noticing and understanding. Noticing happens when learners catch onto grammatical patterns such as plural or past markers and are then able to replicate this pattern. While Schmidt originally claimed that this requires a focus on form, he later modified his stance to state that this can happen implicitly or explicitly. He claimed that understanding could be helpful but was not necessary for L2 learning.
This section has provided an overview of foundational research that supports the interaction approach to SLA. Cognitive interactionist theories form a basis for the interaction approach. As research has expanded, these theories have supported TBLT research by emphasizing implicit learning, incidental learning, and the role of attention. It has been found that L2 learning happens implicitly when the focus is on meaning. Implicit learning involves noticing while incidental learning happens without consciousness. Focus on form is still necessary, however, so that learners can attend to the linguistic forms that are receiving through input which illustrates the role of attention.

**Empirical Interaction Research**

Beginning with the input hypothesis as put forth by Krashen (1977), interaction research expanded to explore the role of output (Swain 1985, 2005), negotiation for meaning (Carroll and Swain 1993, Lon 1980, 1996, Gass 1997, Pica 1994), as well as noticing (Schmidt 1990). In recent years, significant empirical research has contributed to this approach to SLA. There are two key strands of research that look at interaction in task studies: task-based learner performance studies and task as treatment studies.

**Task-Based Learner Performance Studies**

Task-based learner performance studies (Plonsky and Kim 2016) change and adapt various aspects of TBLT to study its effects on interaction. Plonsky and Gass (2011) cited this as the first phase of interactionist research. This research looks at what specific types of tasks are most effective in producing L2 acquisition. Foundational studies by Ellis (2003, 2012) found that negotiation of meaning was most likely to occur in information gap tasks rather than opinion gap
tasks. Other research has found that it is also more likely in two-way, closed tasks (Long 1989) relating to unfamiliar topics (Gass and Varonis 1984). The more required of the learner in order to complete the task in terms of speaking and information exchange, the more interaction that takes place (Gass and Varonis 1984).

**Task as Treatment Studies**

Task as treatment studies look more specifically at the tasks themselves to analyze their effect on acquisition processes. These studies build off of noticing as discussed previously in the research by Schmidt (1990, 1994). This research looks at how learners notice input by differentiating between two types: pre-modified input and interactionally modified input. Pre-modified input occurs when a specific form is emphasized during input possibly due to oral intonation or other clues. This type is less likely to bring about noticing (Lee and Huang, 2008). Interactionally modified input is often analyzed by focus on form episodes (FFE) and was done in a study by Ellis et al. (2001). They analyzed FFE’s and whether they led to successful learner uptake. The results showed that noticing occurs frequently, but success depends on the type of FFE learners experience.

**Interactional Modifications**

Interactional modifications build off of Long’s (1996) proposal that learners obtain more comprehensible input through interaction. They include confirmation check, clarification request, comprehension check, reformulation, and repetition (William et al. 2014), which have been described in the section on corrective feedback.
Long (1983) differentiated between interactions between native and nonnative speakers in terms of clarification requests, confirmation requests and comprehension checks. According to Lantolf (2000), interaction is a complex concept that is “shaped by participants ‘expectations, experiences, and beliefs about the communication and their interlocutor (Lantolf, 2000).” In a study on learners' perceptions about the interactional process, Mackey (2002) built off of this idea by looking at learners' introspection and perspectives to better understand the role that interaction plays. They found that these were most commonly found in learner-to-learner conversations. For interaction to provide the necessary comprehensible input for L2 learning, they proposed two main reasons for the connection between interaction and acquisition: comprehension promotes acquisition and conversational modifications lead to higher levels of comprehension. While support already existed for the first point (Larsen-Freeman & Long 1991), more research conducted throughout the 80’s provided support for the second by Blau (1982), Gass and Varonis (1985a, 1985b), Johnson (1981), and Pica, Young, and Doughty (1987). Interactional modifications are a way of making changes to “anticipate or perceive” learners’ difficulties in comprehensibility within interactions (Pica 1994). According to Long (1996), this allows learners to better focus on their own output as well as focus on their form. It leads to a more comprehensible output (Swain 1985).

Another study by Mackey (2002) looked at ESL learners with various L1 backgrounds at low intermediate levels. Using stimulated recall, learners were watched video recordings of their task interactions with native speakers and were asked to consider their thoughts during the interactions. Their results supported Long’s (1996) research. Modifications that learners used to obtain input included repetition, rephrasing, and elaboration. Overall, this study found that when
learners are aware of their own interactional modifications as well as feedback, it led to higher levels of learning.

The most common interactional modification devices are clarification, confirmation, comprehension checks and recasts (Long 1996, Varonis and Gass, 1985). Blau (1982) and others concluded that interactional modifications are not sufficient in and of themselves for L2 acquisition. Research on interactional modifications and their lack of sufficiency in and of themselves for L2 acquisition was continually found to be more complex (Gass et al. 1998, Sato, 1986). Sato’s research found that learners were leaning heavily on their interlocutors’ language for specific linguistic features such as past tense markings. This led to Swain (1985) proposing the idea of comprehensible output as was discussed above.

Holliday (1995) and Linnell (1995) have looked at interaction in computer mediated tasks which has been a critical topic in interactional research. They both found that negotiation let to target language use. Pica (1994, 1996) explained how interactional modifications led to “reformulations and segmentations” as well as provided learners with lexical and grammatical information. They also served to build their own inner language. While previous research touched on the possibility of negotiation leading to long term stabilization of the L2, Nobuyoshi and Ellis (1993) conducted a study to examine it further. They looked specifically at the idea that we previously discussed of comprehensible output, which they referred to as pushed output. The study was relatively small-scale but found that learners did retain information from negotiations that they produced in pushed feedback one week later. LaPierre (1994) and Donato (1994), conducted further studies and confirmed these results.
**Negotiation for Meaning**

Interaction research found that as learners interacted, they elicited input for the specific interaction (Oliver 1998, Long 1981, 1983). This is referred to as negotiation for meaning, a term first used by Long (1980). Negotiation for meaning has also been foundational in research on interaction and is an integral part of the interaction hypothesis which has been looked at extensively (Long 1980, 1996, Gass 1997, Pica 1994, Mackey 1999). The interaction hypothesis formed from Krashen’s (1985) work as well as Hatch’s (1978) research on the use of conversation to develop grammatical competency. In the interaction hypothesis, Long (1983) states that interaction is essential for language acquisition because of the adjustments that occur within conversation. These modifications and adjustments provide learners with essential input. This process allows learners to navigate and negotiate for meaning in incomprehensible input.

The interaction hypothesis was updated by Long (1996) to add that interaction is effective and holds the ability to create more opportunities for learners to “receive comprehensible input and negative feedback, modify their own output, test hypotheses, and notice gaps in their interlanguage.”

Another key component of negotiation for meaning is corrective feedback (CF) which was introduced by Carroll and Swain (1993). They presented corrective feedback as explicit correction, recast, metalinguistic feedback, elicitation, repetition, and clarification request. If the desired outcome is to prompt output, the teacher might consider repetition which is implicit, but
could lead the learner to resolve the problem on their own (Lyster, 1998). A clarification request might also lead to output, because it puts the burden of solving the problem on the learner (Ellis et al., 2019, #37). Other types of feedback that could lead to output include offering a metalinguistic clue since they do not provide the entire solution, but rather lead the learner in the right direction, or elicitation which is more explicit and brings attention to form. If the goal is to provide input, explicit correction might be provided by a teacher, or a recast can be given using intonation to show which part of the utterance needs to be reconsidered. One final type of feedback is a confirmation check, in which the utterance is repeated with stress focused on the problem to allow the learner to consider the issue from an outside perspective (Ellis et al., 2019).

**Corrective Feedback**

Another important aspect of interaction is corrective feedback which represents a large body of research in cognitive interactionalist theories. While both input and output prompting CF have been shown to be effective, research shows CF that prompts output leads to higher levels of acquisition (Lyster 2004; Ammar and Spada, 2006, Yang and Lyster 2010). Another important component of CF is whether it is immediate or delayed, a topic which has been debated amongst researchers. Willis and Willis (2007) are proponents for delayed CF. This can be efficient as the teacher has time to determine which type of CF to use and create more introspective reflection in the learners after the activity is finished. Others such as Doughty (2001), argue for CF within a “window of opportunity.” According to Ellis et al. (2019), further empirical research must be done to determine the relative effects of each.
Significant research has looked at the relationships between corrective feedback and interaction. In a study on interactional input and the incorporation of feedback, Mackey et al. (2003) explored conversations between native and non-native learners to assess the different effects on amount of feedback, opportunities for modified output, and immediate incorporation of feedback. Their results found significant differences in groups. Thirty percent of errors led to feedback which prompted modified output. Other studies have built on this such as Garcia and Martinez-Arbelaitz (2014) who looked at what opportunities arose for feedback and uptake in study abroad conversations between native and non-native speakers of Spanish. Part of their results showed that an identity as language learners positively affected interaction.

**Individual Differences**

To look at interaction in the task-based classroom, it is pivotal to consider learners’ individual differences. The present study will consider individual differences, specifically, motivation, attitude, and anxiety. These fall under the affective domain of individual differences. Individual differences play an important role in empirical TBLT research. They provide a theoretical basis of TBLT through the lens of what is required to prepare the learning conditions (Snow 1991). Many of these variables in learning conditions are what we refer to as individual differences. There are two main domains: the cognitive and the affective. Within the affective domain exist anxiety and motivation, and within the cognitive domain there is aptitude and working memory. The present study will focus only on the affective domain by looking at motivation and anxiety.
In the Cognition Hypothesis, Robinson (2011) makes three main predictions about how these variables interact. First, the affective domain comes into play when tasks are performed in different conditions as the role of interpersonal relationships could affect motivation and anxiety differently, thus changing the outcome of the task. Secondly, Robinson discusses the role of the cognitive domain. This brings up the individual differences of aptitude based on research by Caroll (1981). Finally, task complexity brings up the role of individual differences in cognitive resources or the ‘resource pool’ available to each learner to work through each task. The sections that follow will explore the various aspects of individual differences including motivation and anxiety.

**Motivation**

One of the most extensively studied variables in research on individual differences is motivation which falls within the affective domain. According to Dörnyei (2005), motivation is one of the most important determiners of L2 success.

Maehr’s (1984) theory of personal investment was an early educational perspective that provided a theoretical basis for TBLT and looked specifically at motivation. He key variables that determine the potential for meaning in activities for learners. This theory looks at motivation in the classroom as well as learners’ previous experiences and the sociocultural context. The goal in each activity or task is for learners to find meaning which leads to investment. It states that when learners are invested, the task is more beneficial, and learners succeed in completing it at higher levels. Lambert (1998) built on Maehr’s theory and created the following adaptation of his key variables for TBLT: personal experiences, sociocultural context, task design, social
expectations, and information. Lambert advocated for learners' personal investment in L2 task performance. He differentiated between learner generated content (LGC) and teacher generated content (TGC). LGC tasks. He said that LGC leads to more learner investment as well as connection to their sociocultural and emotional needs (Dewey, 1913, 1938).

According to Gardner’s (2001) motivation theory, there are three main elements of motivation: the effort, desire, and positive effect of learning a language. Two foundational aspects of motivation are intrinsic and extrinsic motivation (Ng and Ng 2015). They state that in intrinsic motivation comes from within the learner and builds off their overall identity and well-being. Gardner (1985) defined it as the extent to which a learner will work towards language acquisition and the satisfaction that follows that. Therefore, tasks that are intrinsically motivating will likely be interesting and challenging for the learner. Ng and Ng (2015) define extrinsic motivation as that which comes from outside of the learner. This could include rewards or praise. Walqui (2000) found that extrinsic motivation is less likely to lead to L2 success than intrinsic motivation. While intrinsic and extrinsic motivation are frequently discussed, Gardner and Smythe (1975) stated that the distinction between the two does not play a significant role in explaining how motivation relates to second language learning.

Another framework for motivation is the tripartite framework which looks at a dynamic and situated motivation (Csizér and Dörnyei 2005). This model is unique because it looks at motivation as correlating with the final learning objectives. Within this model, Csizér and Dörnyei (2005) says that motivation is influenced mostly by factors such as the school, the course, the class, and the target language. This is relevant to the present study as we are
considering the effects of the situational context on motivation. Csizér and Dörnyei (2005) proposed the prominent idea of the L2 self in motivation research. It states that self has three main parts: ideal L2 self, ought-to L2 self, and L2 learning experience. The ideal self refers to the learner’s desire to lessen the gap between their current state and future state related to their L2. The ought-to L2 self has to do with avoiding negative consequences of not learning the language. Finally, the L2 learning experience refers to the motives related to the actual learning experience such as the language learning classroom.

Ellis (2015) offers three main components of motivation. The first is the reason one wants to learn which builds off of Gardeners (1985) model by referring to how the learner views speakers of the language they are seeking to learn. It also includes how they desire to identify and integrate within that community. The second component is the effort put into language learning and how it is affected by context. The third is how the process of learning affects the learner’s future behavior.

In a study on motivation of young language learners in foreign language classes Olga-Baldwin et al. (2017) assessed motivation of learners ages 10-11 through surveys periodically throughout the school year. They found that task engagement facilitates increased student engagement and promotes learning. Carreira et al. (2013) conducted a study on motivation with elementary age English learners in Japan. They used the self-determination theory (SDT) model and found that creating autonomy in the classroom both for the teacher and learners leads to intrinsic motivation in learners and perceptions of competence and relatedness.
Two foundational studies on motivation and tasks have been done by Dembovskaya (2009) and Jauregi et al (2013). Dembovskaya (2009) looked at the effects of different pre-tasks to lead to higher levels of learner motivation in French university learners. One group was informed about the value of the task, told about other learners' positive experiences, and were encouraged that they had the necessary skills. The other group was just given clear directions and materials. Results showed that the first group was more motivated and had more positive perceptions of the task. Jauregi et al (2013) looked at how learner motivation could be improved through computer mediated communication. Both of these studies found that learner motivation was much easier to influence at earlier stages in their L2. This is important for the present study as all learners are both young and at novice levels of Spanish proficiency with no previous L2 experience.

As has been stated, significant research has been done in the field of classroom motivation. A study by Dörnyei & Kormos (2000) looked at the multiple social variables that affect oral task performance including group cohesiveness, intermember relationships, varying levels of language proficiency and willingness to communicate in the L1. They collected data on quality of speech and number of turns. Their results showed that multiple variables are at play in affecting learners' L2 use during task performance, many of which build on each other suggesting a multilevel construct. Data collection on anxiety and motivation has often been done using uptake sheets which allow learners to report their own anxiety levels as was done in a study by Baralt and Gurzynski-Weiss (2011) in which learners report state anxiety across modality. The present study will also use uptake sheets to collect data on motivation, anxiety, and attitude.
Anxiety

In addition to motivation, the other variable within the affective domain of individual differences is anxiety. Research shows three main types of anxiety in the learning environment: trait, state, and situational (Ellis 2015). Trait anxiety is the more generalized personal anxiety, while state and situational anxiety tend to ebb and flow due to outside variables. Anxiety with language learning falls into the situational category. According to Horwitz et al. (1986), this anxiety arises from three main situations in the language classroom: spontaneous communication, negative feedback, and testing. Understandably, situational anxiety has negative effects on almost all academic performances (Eswald 2007). Research on the effects of anxiety on TBLT has looked at three main topics: task complexity and task modality.

Task Complexity

Task complexity can be determined by resource dispersing and resource directing dimensions. Resource directing variables look at the demand on learners reasoning. Robinson (2011) stated that examples of these are: the number and space of various elements and the need to make perspectives and reasoning explicit. Recourse dispersing variables pull from learners’ prior knowledge. Examples of these are the steps in a task, clarity of the relationship between steps, task time and structure, and the learner’s general familiarity with the task.

Robinson (2011) stated that an increase in resource dispersing or directing dimensions raises the likelihood of learner anxiety. Most studies have looked at the relationship between anxiety and resource directing variables. In a study on university level EFL learners of Japanese,
Robinson (2007) found that syntactic complexity of tasks led to higher levels of anxiety, but successful and accurate production of simple tasks led to lower anxiety. A study that looked at the resource dispersing variable was done by Trebits (2014) which had similar results to Robinson. In both studies anxiety had negative impacts on task performance and was correlated with more complex tasks. Alternatively, Kim and Tracy-Ventura (2011) found that regardless of anxiety, more complex tasks increased L2 acquisition overall. Ellis et al. (2019) stated that this research brings into question how much weight should be put on the variable of anxiety.

**Task Modality**

Task modality looks at the different modes of communication used to complete a task. A prominent theme in research on anxiety, specifically within task modality, is computer mediated (CM) communication and its ability to ease learners’ nerves associated with oral output in the L2 classroom. While some exceptions exist (Gurzynski-Weiss 2011), most research (Cote and Gaffney 2018) affirms that anxiety levels are lower for learners due to CMC. Many of the exceptions exist because the research is done in a laboratory setting which evades the classroom where most anxiety exists; therefore more empirical research is needed.

Research on task modality and pair work in the TBLT classroom is growing (Mayo and Agirre 2019). In a study on the effects of task modality for 11–12-year-old Spanish EFL learners with an elementary proficiency level, they found that there was significant collaboration in both oral tasks and an oral and written task.
Within the psychological perspectives of TBLT as well as research on individual differences, variables within both the cognitive and affective domain play important roles in what has been L2 acquisition. As has been discussed, tasks allow for significant learner flexibility. It is inescapable, therefore, that learners will approach them in different ways, and this will be affected by learners' individual differences. Ellis et al. (2019) calls for more research on the specific roles of individual differences on task performance. In addition to research on individual differences on task performance, an important and under-researched variable to consider is classroom design.

Previous research shows that individual differences have a significant impact on task performance and L2 acquisition. This section provided an overview of motivation and anxiety. Various motivational frameworks including Ellis’s (2015) three main components of motivation as well as Csizér and Dörnyei (2005) with the tripartite framework and the concept of the L2 self were explored. Various empirical studies were discussed including two foundational studies (Jauregi et al. 2013) and (Dembovskaya 2009) both found that learner motivation was much easier to influence at earlier stages in their L2. Anxiety was looked at in terms of task complexity, task modality, and corrective feedback. As has been stated, research is continuing to find positive effects of innovative classroom design particularly on affective factors (Weiss et al. 2015, Schmidt 1990; Svalberg 2012, Richards & Rogers 2014). In addition to innovative classroom design, TBLT with young novice level learners is an under-researched field. The present study will build off prominent studies on interaction with young learners which will be discussed in the next section.
Interaction with Young Learners

While significant research has explored TBLT, very little has looked at its effectiveness with young learners, particularly in the foreign language classroom. Butler & Zeng (2014) looked at interaction in the TBLT foreign language classroom with 4th and 6th grade learners. They found that the dyads of younger learners were less successful in terms of topic development, authentic turn-taking, and consideration of the partner's perspective. They called for future research to consider the roles of interaction in young learners in the TBLT classroom. Shintani (2016) explored the success of input-based tasks with young foreign language learners. Ellis (2020) responded to critiques of TBLT for beginner level learners (Littlewood 2007, Swan, 2005) stating that many of the criticisms stem from a misconception of TBLT and an excessive focus on oral tasks.

On and Off Task Talk with Young Learners

Research on using tasks with beginner level child learners is growing. A study by Oliver et al. (2017) compared interaction in a TBLT class of younger and older learners. This research looked specifically at intermediate learners. Younger learners were 5–8 years and older learners were 9–12 years. One of the key differences observed was on and off task talk which both presented the potential for language learning even if not in the target language as learners were leaning on and expanding their linguistic resources. They found that older learners were more able to reflect on language use than younger learners. In their analysis of off task turns, they found that overall learners were generally on task; 95 percent of the time. They could not determine if off task turns were due to lack of interest or engagement in the task or general distraction. The older learners were more on task overall than younger learners. The preset
research will build expand on study by Oliver et al. (2017) by counting turns during peer interaction and analyzing them for on and off task talk

**Considerations for Young Learners**

Research has shown that certain considerations must be made when working with young, beginner learners. A study by Pinter (2006) on child versus adult task interactions supported the findings by Oliver et. al (2017) that children’s ability to stay on task and interact continues to grow with age. This study looked at low level learners in the EFL classroom. They found that while learners were able to interact and negotiate the task, they had a “looser approach to handling referential conflicts” and had lower levels of listening strategies as compared to the adult learners. Challenges also arose in how learners interpreted tasks. Child learners often interpreted directions differently from adult learners. They found that this could be positive in developing “cognitive and metacognitive skills in addition to linguistic and social skills by (Pinter 2006).”

**Cognitive Functioning with Young Learners**

In study on tasks with child learners, Mayo & Ibarrola (2015) looked at how they negotiate for meaning within task-based interaction. This study closely relates to the participants and focus of the present study as the participants were 8–11-year-old learners in the foreign language classroom. They found that older learners negotiated less and used the L1 more in interaction. They found that generally, the number of turns for learners continues to increase with learner age. Interestingly, they found that turns in the L1 did serve the metacognitive function to organize information, check goals and check for comprehension. This supports the research from
Pinter (2006) that off-task talk and L1 turns during a task serve an important metacognitive role and contribute to overall collaboration. We took these findings into consideration by looking at data even if there were high numbers of off task turns. We also chose tasks with minimal cognitive complexity.

Research on TBLT and interaction with young learners is continually growing. Previous studies show that younger learners have more off task talk as well as less target language usage. Both presented the potential for language learning even if not in the target language as learners were leaning on and expanding their linguistic resources (Oliver et al. 2017). Task freedom is important with young learners as previous studies show that they often interpret directions differently. Pinter (2006) found that this could be positive in developing cognitive and metacognitive skills. Another important component of classroom research, particularly with young learners is classroom design. While it is under researched, there are some prominent findings in educational, psychological, language learning research.

Classroom types

The foreign language classroom often lacks real world authenticity and accessibility to the language outside of the classroom (Collentine 2009). Researchers (Blake et al. 2008; Chenoweth & Murday 2003) have found that context has pivotal effects on both L2 acquisition and student attitudes. This leads us to the importance of considering the contextual factors within the classroom, namely classroom space design. While this topic has been considered in the past (Weinstein 1981), it is only beginning to enter the mainstream SLA conversation. Educational
research on classroom design began growing in the 1970’s. In the 2000’s, research on innovative classroom design was primarily conducted within psychological and behavioral sciences. Present SLA research on classroom design is growing but is primarily being done in university settings.

Innovative Classroom Design in Educational Research

A foundational study on innovative classroom design by Weinstein (1981) stated that teachers, specifically grade-school teachers, often diminish the effectiveness of their lessons by failing to consider the physical setting of the classroom. She explained that while physical design comes second to instructional methods and curriculum, it can facilitate or hinder learning. She defines classroom design as including three main dimensions of classroom design: furniture arrangement, seating position and aesthetic quality. She proposed that there is no universally effective classroom design; rather, it must be determined by the instructional context and goals. The classroom environment must be planned in line with the teaching methodology (Gagne 1977; Gagne & Briggs 1974). Weinstein offers some basic guidelines for classroom design based on educational research. First, the teacher must decide to set up the classroom in terms of personal territories or functions. Personal territories allow for the space to be divided into interest areas or work centers with fluid availability to learners. This is the function that will be used in the present study.

In a study on two third-grade classes, Zifferblatt (1972) found that in the classroom with more traditional seating and the teacher’s desk in the front, there were shorter attention spans, more time with learners off task, and more unrelated conversation. In contrast, the classroom
with clearly defined work areas and the teacher’s desk to the side resulted in more focused group work.

Other studies have looked at innovative classroom designs at the university level in a general sense with no indication of the specific courses being studied. Harvey and Kenyon (2013) looked at 5 key seating styles and found that mobile chairs and trapezoid tables were rated highest by students and professors for mobility, flexibility, and focus. Sanders (2013) looked at traditional forward-facing desks versus group table seating and found positive results on environmental and behavioral factors that led to student engagement. Siegel and Claydon (2016) looked at flexible design of space, furniture, and technology and found that these led to higher levels of motivation and enthusiasm.

One educational study on classroom design by Julian (2013) looked at the use of mobile seating in place of a traditional lecture-style classroom at a university. The classroom was available for booking from teachers of various courses. The study found that classes were overall more student-centered. After the change in seating, teachers began creating lessons that provided more opportunities for learner interaction. Based on surveys, students expressed desire for more time to explore in groups and less lecture-style teaching. There was also a positive effect on student attendance.

**The Specifics of Innovative Classroom Design**

Research has shown the positive role of student-centered approaches, yet research on various classroom and seating designs that facilitate that are lacking (Norazman et al. 2019). The most common innovative seating design is desk clusters (Gremmen et al. 2016), but there are three key aspects of innovative classroom design across the various fields of research. The
following sections will explore empirical studies on furniture arrangement, seating position, and aesthetic quality within various types of classrooms.

**Furniture Arrangement**

Early educational research on innovative classrooms considered the aspects and effects of furniture arrangement. Aspects of furniture arrangement that have led to positive empirical results include desk clusters, privacy, and individual density.

**Desk clusters**

Steinzor (1950) found that small group cluster seating led learners to make comments immediately after the person sitting across from them in the circle indicating that this seating arrangement encouraged the flow of communication particularly with younger learners. Zifferblatt (1972) found less off-task talk and movement as well as longer attention spans in an innovative classroom in which desks clusters were placed in groups of 2-3 and spread out around the room to create some privacy. In the traditional classroom, they found more conversation between groups and shorter attention spans overall.

**Privacy**

A foundational article on spatial definition, Moore (1986) explored examples of individual group privacy through the use of loft seating, texture differences such as rugs, and low shelving. This study found particularly positive results on behavior and engagement for learning when stations were separated by low shelving. Privacy also impacted the role of the teacher. In classrooms with designated workspaces, the teacher circulated without interfering.
Density

Maxwell (2003) conducted a study to explore the role of individual density on elementary aged learners. She found that space per child was equally as important as the number of children per classroom. This study considered academic achievement, social behavior, and psychological stress. Results showed that individual student space or “micro-environments” led to positive effects on all factors.

Seating Position

Another key aspect of innovative classroom design is seating position. Weinstein (1981) defined seating position as functional arrangement or personal territory. Most early education would be considered a functional arrangement. This seating design includes interest areas or work centers and facilities student-centered learning. Personal territory allows each learner to own their space. This would describe the traditional classroom through the use of individual desks. Personal territory seating is ideal for teacher fronted and instruction and individual work.

Similar to furniture arrangement, research shows that seating position also has a significant impact on the role of the teacher. Gremmen et al. (2016) conducted a study with teachers of 4-6th grade learners in primary schools in Israel. They interviewed 50 teachers regarding their goals for seating arrangements which were mostly related to academic achievement and student cooperation. They found that that teachers perceived seating position to play a significant role. While this study didn’t specify specific types of seating positions, they found that more experienced teachers used innovative seating positions to reach their classroom
goals for learners behaviorally, socially, and physically. As previously discussed, Harvey and Kenyon (2013) examined 5 different types of seating for university level learners and found that mobile chairs and trapezoid tables rated highest for mobility, flexibility, and focus.

Tobia et al (2022) looked at the effects of classroom design on primary school students. They considered seating positioning factors such as clusters vs. single desks and the effects on logical reasoning, creativity, and theory of mind. They also considered individual characteristics such as gender, loneliness, and popularity. Their findings suggested that the success of seating design is highly dependent on the type of task and the needs of individual learners. Individual cognitive tasks were more effective in the traditional classroom design while interactive tasks had positive effects with seating clusters. Overall, studies show that the most successful seating positions provide flexibility to adapt to varying student needs and tasks (Gremmen et al. 2016, Tobia et al. 2022, Harvey & Kenyon 2013).

**Aesthetic Quality**

The final aspect of innovative classroom design is aesthetic quality which includes comfortable seating, desk alternatives, light, sound, color, complexity or simplicity, and designated zones. Early educational research showed that more comfortable seating with cushions and desk alternatives (Sommer and Olsen 1980) as well as attractive colors (Horowitz and Otto 1973) both led to more learner interaction and enthusiasm.

A key study by Barrett et al. (2015) was conducted in low-income primary schools in England. They looked at three different aspects of classroom design: naturalness, individuality,
and stimulation and found that naturalness had the highest effect on learning. Naturalness included light, sound, temperature, air quality, and links to nature. Natural lighting had the highest impact overall. While the results were not significant, they did find that carpeting positively affected sound. Overall noise did have a significant effect. Individualization included ownership flexibility and connection. The highest in this category was student-centered workspaces and breakout zones which led to better behavior. Stimulation also considered aesthetics in terms of complexity and color. Results showed that simple aesthetic quality is the most effective. The design of the classroom should be aimed at limiting distractions, not adding to them.

Kumar (2008) looked at the relationship between aesthetics and behavior of 8th to 12th grade students. He considered the role of classroom environment on students overall affective states both in and outside of the classroom. The primary applicable finding from the study was that the clean and simple classroom facilitated learning and better behavior overall.

**Montessori Classroom Design**

The Montessori classroom design is made up of multiple research based aspects of innovative classroom design including functional arrangement and flexibility of seating position, a furniture arrangement that includes small groups and privacy, and aesthetic quality through the use of natural lighting, natural colors, designated zones, desk alternatives, and simplicity.

The Montessori method is based on research by Maria Montessori who opened a school for children with special needs in Rome in 1907. She used a hands-on methodology, a stark
contrast to teaching methods at the time. Learners were encouraged to think deeply on independent or small group tasks. The teacher served as a guide and moderator as children of varying ages worked together (Kramer, 1976).

Minimal empirical research has been conducted on Montessori education. Lillard (2017) provides an overview of the Montessori classroom design and methodology. According to Lillard’s (2017) analysis of Montessori’s work, the teacher provides boundaries and structure for learners, within which learners are free to explore and work to achieve tasks in various ways. This relates to task research following the idea of open-ended tasks. The teacher circulates offering feedback and direction when needed. Within the Montessori model, learners are only implicitly motivated. This means that everything about the Montessori classroom design must be conducive to learner exploration and deep task work.

Lillard (2007) states that the Montessori classroom is set up as a “large, open space with low shelves, different sizes of tables that comfortably seat one to four children, and chairs that are appropriately sized for the children in the classroom.” The areas of the classroom are divided by low shelving. There are no seating assignments and students work at the work-stations throughout the classroom alone or in groups. The classroom design is simple and clean without clutter to ease distraction. All of the furniture is made of natural wood. All the materials that learners need are at eye level and available at their workstation to maintain focus and minimize distraction. The classroom is meticulously organized, and learners have roles and responsibilities for maintaining it.
There are eight main principles that make up the Montessori model of education. First, movement and cognition are closely related. It builds on the idea that children learn by doing. Second, learning is enhanced when learners feel a sense of control and autonomy over their work. Third, learners succeed when they are interested in the work that they are doing. This connects to early educational research by Dewey (1913, 1938) on the theory of experience and follow up research by Maehr (1984) on the affective dimensions of learning which both provide theoretical underpinnings for TBLT.

Further research on task content and sequencing has focused on considering what topics are generally interesting to the learner population (Prabhu, 1987; Ellis, 2003). Fourth, rather than extrinsic rewards such as prizes for completing an assignment, learners are intrinsically motivated. This compliments TBLT since successful completion is determined by completing the real-world task. Fifth, collaboration is beneficial to learning. This is central to TBLT and has been researched extensively by Long in particular (1976, 1985, 1989). Sixth, learning is best when situated in clear and meaningful contexts. Prabhu (1987) argued that in order to prepare students for real language use, real world contexts and conditions must be mirrored in the classroom. It is the role of the teacher in both TBLT and Montessori to mediate these contexts. Seventh, there are particular effective forms of adult interaction. There is significant focus on learners' socioemotional development (Montessori, 1976,1978) as well as the importance of learner freedom within boundaries to complete activities or tasks that don’t have one specific way of being solved. TBLT research considers these ideas within task types. As mentioned above, in closed tasks, there is a limited set of possible outcomes (usually an information gap) while in an open task the outcomes are essentially limitless (usually an opinion gap).
While the present study will include both information and opinion gap tasks, all will be open. Finally, order and organization is important for a beneficial and effective learning environment. As mentioned, an important part of the Montessori classroom design is the clean design with minimal distractions. The materials that learners need are easily accessible and other materials are hidden out of sight in cabinets or closets as opposed to the traditional classroom that typically has little hidden storage and displays of various information and materials around the room.

In addition to the eight tenants, motivation is an important topic in the Montessori classroom as well as in the present study. Batubara et al. (2020) examined the factors of the Montessori environment that lead to motivation. They found the following factors to have the highest influence on learner motivation: teacher presence, personal attitude, Montessori materials, classroom conditions and friends influence. While the present study will only use the Montessori model for the classroom and depend on TBLT for methodology, a brief understanding is important to better understand the purpose of the classroom design.

As has been shown in this section, the Montessori classroom design provides a promising innovative use of space for the TBLT classroom because it is created with many similar goals in mind such as a focus on creating real-world contexts for learners, emphasis on group and peer work, space, and accessibility for open-ended and focused tasks, as well as a design that is created in order to raise learner motivation. It is particularly suitable for the present study as it relates to interaction processes and learner motivation.
Language Learning Research

Language learning research within the field of linguistics on innovative classroom design is very limited and has focused primarily on the university level context. Research, specifically within TBLT, stems from a focus on the context of language learning, a central component of TBLT. Long (1996) stated that a context in which learners can interact with multiple interlocutors is a foundational aspect of the TBLT classroom. More recent studies have explored the different contexts for language learning for university-level learners including study abroad, at home, traditional, or online (Collentine and Freed 2004, Housen et al. 2011) Within the classroom context, researchers have examined simple adjustments on use of space and technology. Lord (2015) looked at learning context in the university level Spanish classroom by comparing a traditional course, an online course, and a hybrid course. She found that interaction during in person learning led to the highest levels of learning, motivation, and practical application.

A premise for the present study is Gurzinsky-Weiss et al. (2015) which is the only study that has considered innovative classroom type and TBLT. They looked at interaction and use of space in different physical classroom designs within intermediate TBLT Spanish classes in the university setting. Key comparisons were learner interaction, attitudes, and motivation between a traditional classroom and an innovative classroom. Data collection involved video and audio recordings of the class. Students were given a questionnaire at the beginning and end of the course to consider perceptions of the space and interaction. They recorded four days of classes in each context. They coded for the following factors: lesson focus, grammar, task type, activities,
input type, interaction opportunities, errors, and opportunities for modified output. Questionnaires were coded using a thematic analysis and descriptive statistics.

Their results showed no differences in input between the traditional and innovative classroom. There were higher levels of feedback in the innovative classroom. The innovative classroom had a slightly higher range of student-centered interaction as well as slightly higher levels of modified output. Within tasks, they found that in the innovative classrooms, teachers spent less time facilitating and explaining the task than in the traditional classroom. In the questionnaires, more than half of participants reported that interaction was different, and the majority stated that there were positive benefits to the group seating. They cited Ellis (2003) and Ellis (2009) to support their results that innovative classrooms lead to less set up time and quicker engagement into the pre-task phase which leads to more time and maximum efficiency in the main task phase.

**Summary**

This literature review provided an overview of the research that supports task-based language teaching. The definition of task and how that definition has evolved by key researchers as well as the key components of task as a work plan led to a discussion of the history of TBLT with its basis in CLT and the movement away from the synthetic approach as well as the rationale for the first proposals of the task-based approach in the late 80’s.
TBLT is described as a research-based pedagogy based on its extensive theoretical background, supported by research from cognitive, education, and sociocultural perspectives. A key aspect of learning in a TBLT context relates to the individual learner experience, which is shaped by the pedagogical tasks selected (Robinson, 2008), individual learner differences (Shintani, 2006), and the physical space where the interaction takes place (Gurzinsky-Weiss et al., 2015).

As shown in this literature review, significant research has contributed to SLA pedagogy, but very little has considered the physical classroom (Weiss et al., 2015), particularly for young learners. Research in both education, psychology, and language learning shows that innovative classrooms can lead to higher levels of cognitive engagement, student centered learning, and positive effects overall on affective factors (Schmidt, 1990; Svalberg, 2012, Richards & Rogers 2014). The Montessori classroom design includes many of research-based aspects of innovative classroom design including functional arrangement of seating position, a furniture arrangement that includes small groups and privacy, and aesthetic quality through the use of natural lighting, natural colors, designated zones, desk alternatives, and simplicity.

This study fills an important gap by providing a concrete example of an innovative classroom type based on the Montessori methodology which has significant alignment with TBLT. This study provides an extensive look at affective factors, interaction, and language acquisition for novice level young learners in multiple classroom types using a TBLT methodology through both quantitative and qualitative data.
Influence on the Current Study’s Methodology

This chapter has provided support for and background information on task-based language teaching, interaction research, and innovative classroom design. No research has been done integrating TBLT with the Montessori classroom design, nor considering the general effects of classroom design on motivation, attitude or vocabulary within TBLT in elementary Spanish language classes. This study fills an important research gap by combining classroom design, a growing conversation within SLA with TBLT. The use of interaction, specifically with vocabulary development as the target linguistic feature (Shintani 2006), and affective factors as independent variables follows many studies and has proven an effective and important consideration in task studies.
Chapter 3: Methodology

Research Design

This quasi-experimental research study uses mixed methods to explore the effects of classroom type on interaction processes, vocabulary development, motivation, anxiety, and attitude.

1. Does classroom design impact peer interaction, vocabulary, development, and learner attitudes, motivation, and anxiety?
2. Does task type impact peer interaction, vocabulary, development, and learner attitudes, motivation, and anxiety?

Study Site

The study site is a Montessori public charter school in a low-income area in the southeast US. There are approximately 475 students ranging from 6 weeks-old to 11-years-old. It is the only public Montessori school in the area. The school had been in operation for 7 years at the time of the data collection.

Data was collected with a group of fifteen 4th and 5th grade learners split into two classes. Data collection took place in Spanish classes during a one-month summer enrichment program. All learners were native speakers of English with novice levels of Spanish. Each group of learners attended Spanish class for five 45-minute sessions each week and had equal class time.
in a traditional classroom and in an age-appropriate Montessori classroom. All classes were taught by the same instructor who is also the researcher. None of the learners had any prior experience in Spanish classes and none of the participants were included in the pilot study (described below).

Within the Montessori model (Lillard 2017) as well as at the study site, the school day functions in work cycles which have many similarities to the task cycle. During the school year, learners begin the morning work cycle at 8 am and it lasts for three hours. Learners choose from their current activities and work in stations at age-appropriate tables or on mats on the floor with the teacher acting as a moderator. There is a pre-work time when the material and instructions are presented, and a post-work reflection at the end. The post-work reflection often happens on a rug in the center of the room. Learners work independently but must master the work or task before moving on. After the first work cycle, learners take a break for a community meeting in which they discuss virtue and character. Learners then transition to lunch and a 30-minute recess break. At 12:30 pm the afternoon work cycle begins. In this work cycle, learners work and cycle through more structured groups that include a language arts seminar, in which the teacher leads a small discussion about reading that integrates communication skills. They also have a math meeting in which a small group uses thinking skills to work together through a challenging math problem. Finally, there are classroom jobs in which learners help tend to the classroom by cleaning, watering plants, feeding pets, or organizing. After this work cycle, learners move to enrichment. Students attend music, gardening, physical education, or visual arts. After school dismissal, an aftercare program is available where students attend enrichment classes.
At the research site, all classes from nursery (beginning at 6-weeks old) to third grade are taught completely in the Montessori classroom following the Montessori methodology. Every two grades are combined. For example, Kindergarten and 1st, 2nd and 3rd, and 4th and 5th. Fourth and fifth grade learners attend transitional classes for math and English language arts in traditional classrooms. Since all learners attend traditional middle and high schools, the goal of these classes is to prepare them to succeed outside of the Montessori model and classroom design. The school has only had traditional classrooms for fourth and fifth grade for two academic years. There is little research on which to base decisions about classroom design differences especially between traditional and Montessori (Lillard 2007).

The research site school has never had a foreign language learning program and is collaborating with the researcher to build a Spanish language program following a TBLT methodology. Preceding the present study, the researcher conducted a 5-month pilot study of Spanish language classes twice weekly in the after-school program. The present study took place during a one-month summer intensive program where all students attended Spanish five days a week for 45-minute each day. Two task cycles and testing took place Monday through Friday. Classes alternated weekly between the Montessori classroom and the traditional classroom.

This study looked at an intensive 4-week program as opposed to a semester or year-long course. These courses were piloted as an after-school program for one semester preceding the present research. An intensive 4-week enrichment program was chosen because of the likelihood of higher attendance, the lack of grading, and the opportunity for more consistent classes. In an after-school program, learners are inconsistent and often checked out early. It also takes place
after a full school day when students are tired. A summer enrichment program allowed the
opportunity for learners to have Spanish classes daily without the necessity of grades and when
their minds were fresh.
Figure 3.1

Montessori classroom design. Wood pieces represent low shelving.
Figure 3.2

Traditional classroom design
Montessori Classroom Design

According to Lillard (2007), the Montessori classroom is set up as a “large, open space with low shelves, different sizes of tables that comfortably seat one to four children, and chairs that are appropriately sized for the children in the classroom.” The areas of the classroom are divided by low shelving. There are no seating assignments and students work at the workstations throughout the classroom alone or in groups. The classroom design is simple and clean without clutter to ease distraction. The Montessori classroom for the present study followed the description by Lillard (2007). Learners sat at round tables in groups of two. Tables were spaced out around the classroom and divided by low shelving. The classroom design was clear of distraction. There was no designated front of the classroom. For the present study, each learner group or pair worked in a designated workspace. Instructions were given individually to each group (Figure 3.1). Previous research supports positive results of innovative classroom types that center around seating position, aesthetic quality, and furniture arrangement. The Montessori classroom design uses each of these by including flexibility of seating position, a furniture arrangement that includes small groups and privacy, and aesthetic quality using natural lighting, natural colors, designated zones, desk alternatives, and simplicity.

Traditional Classroom Design

The traditional classroom that was used in the present study was made up of a personal territory arrangement with double seater desks rather than round tables. There was a designated front and back of the classroom. At the front of the classroom there was a white board; teacher’s desk was at the back of the classroom. Students sat in groups of two facing the front of the room.
with nothing physical to separate the groups. Task supplies sat in the middle of the desk.

Instructions were given from the front of the classroom (Figure 3.2).

**Table 3.1**

*Participant Demographics*

<table>
<thead>
<tr>
<th>Name:</th>
<th>Grade</th>
<th>Gender</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant #1</td>
<td>5</td>
<td>Female</td>
<td>A</td>
</tr>
<tr>
<td>Participant #2</td>
<td>5</td>
<td>Female</td>
<td>A</td>
</tr>
<tr>
<td>Participant #3</td>
<td>4</td>
<td>Female</td>
<td>A</td>
</tr>
<tr>
<td>Participant #4</td>
<td>4</td>
<td>Female</td>
<td>A</td>
</tr>
<tr>
<td>Participant #5</td>
<td>5</td>
<td>Male</td>
<td>A</td>
</tr>
<tr>
<td>Participant #6</td>
<td>5</td>
<td>Male</td>
<td>A</td>
</tr>
<tr>
<td>Participant #7</td>
<td>4</td>
<td>Male</td>
<td>B</td>
</tr>
<tr>
<td>Participant #8</td>
<td>4</td>
<td>Male</td>
<td>B</td>
</tr>
<tr>
<td>Participant #9</td>
<td>4</td>
<td>Female</td>
<td>B</td>
</tr>
<tr>
<td>Participant #10</td>
<td>5</td>
<td>Female</td>
<td>B</td>
</tr>
<tr>
<td>Participant #11</td>
<td>4</td>
<td>Male</td>
<td>B</td>
</tr>
<tr>
<td>Participant #12</td>
<td>5</td>
<td>Male</td>
<td>B</td>
</tr>
</tbody>
</table>
Participants

Classes were made up of learners who had just finished 4th and 5th grade. All learners were native speakers of English and novice speakers of Spanish. The class was part of an optional summer enrichment program and not part of the required curriculum. No grades were given. During the enrichment program, learners took reading, math, and enrichment courses in Spanish, gardening, and music. All parents signed consent forms. All learners signed assent forms. None of the students had prior exposure to Spanish instruction.

This research was conducted at an inner-city school in which all participants were African American and speakers of African American language (AAL). This was intentional for the present study as little research within TBLT has looked at this specific demographic. Information on participant demographics is shown above in Table 3.1.

Study Design

This study was a repeated measures design that was counterbalanced within groups. All students participated in all treatments and in all assessments, but in different orders. Assessment included the same test at the beginning and end of the study as well as the same test broken up into weekly tests. Each group also had equal time in each classroom type. During the first week, for example, all classes were taught in the traditional classroom. Group A covered information gap tasks 1 and 2 while group B covered information gap tasks 3 and 4. Learners each participated in equal tasks for each task type in each classroom context.
Data

Data comprised approximately 21 hours of audio recorded classroom interaction from 15 45-minute lessons per group. All recording happened within a one-month summer enrichment program in which learners attended full time. The researcher/instructor has experience teaching elementary and university-level Spanish. Each week, each group of learners received two task-based lessons split between four days. Classes followed TBLT research with a task cycle that included a pre-task, main task, and post-task. Due to short class times, the task cycles were split. The first day included the pre-task while the second day included the main and post-task. Weekly tests were given on the fifth day. Data on attitude and motivation was collected using uptake sheets after each pre-task and each main task (Appendix A). Uptake data was anonymous. It was, however, tagged for a specific task, group, and part of the task cycle, but not the specific learner. This was done in order to ensure learners provided honest feedback. Data on input, output, and interaction was collected through audio recordings and analyzed using a two-way ANOVA.

Daily teacher reflection journals (TRJ) and general field notes were taken daily by the teacher who was also the researcher. According to Gass et al. (2005) much of task research has been conducted in laboratory settings which doesn’t take into consideration the complexities and variables of a classroom context. They suggested qualitative research in future studies to consider the complexities and variability of the classroom setting. This study took that into account through the use of TRJ’s. TRJ’s were kept daily by the researcher. There was one entry for each group each day. They were open-ended journal reflections that usually included the teachers’ perceptions of how the class went, an overview of outside variables that affected behavior, task success, and overall focus as well as specific scenarios that took place.
All classes followed the task cycle based on task research by Willis (1996). Half of the tasks used were opinion gap tasks and the other half were information gap tasks. Pre-tasks focused on interactive vocabulary learning. According to Ellis et al. (2019), the pre-task has three main purposes: arouse learner interest, prepare learners for the task, and provide learning
opportunities. Pre-tasks were hands-on and often included games in order to arouse learner interest. Tasks centered around vocabulary knowledge; therefore, the pre-task familiarized learners with the vocabulary set. Vocabulary was taught using learner-centered activities in which learners work with the vocabulary words through games and production activities. For each pre-task, learners were given a vocabulary sheet with the weekly vocabulary in Spanish and a corresponding picture. For example, learners played a Pictionary game as a pre-task to learn adjectives in which one learner drew an adjective card and drew a picture to illustrate it. The other learner guessed in Spanish using their vocab sheet. They continued switching until all cards were drawn. A full breakdown of pre-task activities can be found in Table 3.2 and Table 3.3

Through this, learners had the opportunity to work with and learn vocabulary before beginning the task. The pre-task also allowed time to explain and prepare learners for the main task cycle. Based on research by Ellis et al. (2019), this allows learners to focus their cognitive resources on language during the main task. Half the main tasks were information gap tasks and half were opinion gap tasks. The context in which the tasks were completed (the classroom type) were counterbalanced. This information can be found below in Figure 3.4.
Figure 3.4

Task and Classroom Schedule
### Table 3.2

**Information Gap Tasks**

<table>
<thead>
<tr>
<th>Class</th>
<th>Pre-task</th>
<th>Main Task</th>
<th>Post-task</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Learner pairs are given a folder with vocabulary sheets, vocab picture cards, and uptake sheets. Teacher helps learners with pronunciation of the new set of words. Learners play a matching game where they match the picture to the word using their vocab sheet as a reference.</td>
<td>Learners are given a folder with vocabulary sheets, a deck of Encanto character cards, and uptake sheets. Learner A describes one character using vocab words in Spanish. If Learner B guesses, they get to keep that card. They keep going until all cards have been used. They each fill out an uptake sheet and put everything back in the folder.</td>
<td>Discussion and generalized feedback</td>
</tr>
<tr>
<td>#2</td>
<td>Learner pairs are given a folder with vocabulary sheets, vocab picture cards, dry erase sheets, markers, and uptake sheets. All vocabulary cards from the week are mixed for learners to play Pictionary in pairs. They each fill out an uptake sheet and put everything back in the folder.</td>
<td>Learners are given a folder with vocabulary sheets, adjective cards, and uptake sheets. Each student gets an adjective card with 3 words and a picture. They must say the words while their partner draws a person. After they finish, they must sit the cards side by side to see if they look the same. They each fill out an uptake sheet and put everything back in the folder.</td>
<td>Discussion and generalized feedback</td>
</tr>
</tbody>
</table>
Learner pairs are given a folder with vocabulary sheets, vocab picture cards, and uptake sheets. Each learner pair has a deck of Shrek character cards. They lay the cards out on the table. Learner A describes one character using vocab words in Spanish. If Learner B guesses, they get to keep that card. They keep going until all cards are used.

Learners play a matching game where they match the picture to the word using their vocab sheet as a reference.

They each fill out an uptake sheet and put everything back in the folder.

Learners are given a folder with vocabulary sheets, adjective cards, and uptake sheets. Each student gets an adjective card with 3 words and a picture. They must say the words while their partner draws a person. After they finish, they must sit the cards side by side to see if they look the same.

They each fill out an uptake sheet and put everything back in the folder.
### Table 3.3

**Opinion Gap Tasks**

<table>
<thead>
<tr>
<th>Class</th>
<th>Pre-task</th>
<th>Main Task</th>
<th>Post-task</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Learner pairs are given a folder with vocab sheets, blank cards, colored pencils, and uptake sheets. Learners create food cards with the word and picture, then play Pictionary. They each fill out an uptake sheet and put everything back in the folder.</td>
<td>Learner pairs are given a folder with vocab sheets, food ranking worksheet, colored pencils, and uptake sheets. Learner pairs will collaborate and rank which foods they will serve at their restaurant. They each fill out an uptake sheet and put everything back in the folder.</td>
<td>Discussion and generalized feedback</td>
</tr>
<tr>
<td>#2</td>
<td>Learner pairs are given a folder with vocab sheets, vocab picture cards, and uptake sheets. Learners play memory matching in which they match the picture to the word in Spanish. They each fill out an uptake sheet and put everything back in the folder.</td>
<td>Learner pairs are given a folder with vocab sheets, blank menus, colored pencils, and uptake sheets. Learner pairs choose 4 main menu items and add illustrations and prices. They also choose a name for the restaurant from a list on the board or from the vocab list. They each fill out an uptake sheet and put everything back in the folder.</td>
<td>Discussion and generalized feedback</td>
</tr>
</tbody>
</table>
Class #3
Learner pairs are given a folder with number cards written out in Spanish and uptake sheets.
They work in pairs to sequence the numbers while listening to the song again.
https://www.youtube.com/watch?v=CiNqpfFaRJ8
They each fill out an uptake sheet and put everything back in the folder.
Learners play’ prices battleship’.
Each learner fills out a menu with prices, then they must ask each other ¿cuanto cuesta? until they can fill out the cost of their partner’s menu items.
They each fill out an uptake sheet and put everything back in the folder.

Class #4
Learner pairs are given a folder with number cards written out in Spanish and uptake sheets.
They work in pairs to sequence the numbers while listening to the song again, then glue them in order on a blank vocab sheet.
https://www.youtube.com/watch?v=CiNqpfFaRJ8
They each fill out an uptake sheet and put everything back in the folder.
Learners collaborate to label each item as caro, barato or normal.
They each fill out an uptake sheet and put everything back in the folder.
Linguistic Targets

Vocabulary was chosen as the target linguistic feature for the present study as learners were young novice level learners of Spanish. Previous research shows that young beginner level learners have more challenges negotiating tasks (Pinter 2006). Oliver et al. (2017) found that young learners used the target language less than older learners. This did, however, present the potential for language learning even if not in the target language as learners were leaning on and expanding their linguistic resources (Oliver et al. 2017). Vocabulary as a target linguistic feature was selected in order to allow learners to navigate tasks by leaning on a variety of linguistic resources and keeping the focus on meaning.

Ellis (2003) explains that leaners must lean on their linguistic resources to solve tasks. Successful completion of a task means that the learner is able to complete the task in a way that would be considered successful in the real world, not whether or not they used certain linguistic forms in the process or presentation (Ellis and Shintani 2014). Based on this research, the tasks were chosen first, then the vocabulary lists were created to give learners the necessary linguistic resources to complete the tasks. The vocabulary included various types of words. Set #1 and #2 were adjectives, set #3 was nouns, and set #4 was numbers. Set #1 and #2 were used for the information gap tasks and all related to the topic of describing people. Set #3 and #4 related to food and eating at restaurants. Set #3 included basic foods and set #4 included numbers so that learners could discuss prices and quantities of food. These vocabulary sets were created with the intention of creating a giving the learners some linguistic resources to work with and to facilitate tasks with a focus on meaning.
Table 3.4

Classroom Schedule

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Traditional)</td>
<td>(Montessori)</td>
<td>(Traditional)</td>
<td>(Montessori)</td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td>Information 1 &amp; 2</td>
<td>Information 3 &amp; 4</td>
<td>Opinion 1 &amp; 2</td>
<td>Opinion 3 &amp; 4</td>
</tr>
<tr>
<td>Group B</td>
<td>Information 3 &amp; 4</td>
<td>Information 1 &amp; 2</td>
<td>Opinion 3 &amp; 4</td>
<td>Opinion 1 &amp; 2</td>
</tr>
</tbody>
</table>

Tasks

When learners arrived in either classroom type, their task materials were in a folder on their desk or table. In the traditional classroom, general instructions for the task were given from the front of the room. In the Montessori classroom, instructions were given to each group individually. Pre-tasks were always conducted on the day preceding the main and post-task due to time constraints. Learner pairs did tasks at their own pace. Recording devices were set up with each pair and all tasks were audio-recorded. Tasks were counterbalanced so that all learners received all treatments, but at different times. Each group of learners did each task type in each classroom type as shown above in Table 3.5.

Information gap tasks 1 and 2 covered vocabulary set 1 (Appendix B) on adjectives. In the first task, Learner A described one of the provided movie characters using vocab words in Spanish. If Learner B guessed, they kept the card. Pairs kept going until all cards had been used. For the second task, each student received an adjective card with three words and a picture. They
said the words while their partner drew a person. After they finished, they sat the cards side by side to see if they looked the same. Information gap tasks 3 and 4 covered vocabulary set 2 (Appendix B) on nouns and adjectives to describe people. The third and fourth tasks were the same as tasks 1 and 2, but with different movie characters and different vocabulary.

The second set of four tasks were opinion gap tasks. Opinion gap tasks 1 and 2 covered vocabulary set 3 (Appendix B) on food. For the first task, learner pairs collaborated and ranked which foods they would serve at their restaurant. For the second task, they chose four main menu items and added illustrations and prices. They also chose a name for the restaurant from a list on the board or from the vocab list. Opinion gap tasks 3 and 4 covered vocabulary set 3 (Appendix B) on food. For the third task, learner pairs played ‘price battleship’ in which each learner filled out a menu with prices, then they asked each other ¿Cuánto cuesta? (How much does it cost?) until they could fill out the cost of their partner’s menu items. For the final tasks, learners were given a menu with prices written out in Spanish. They collaborated to label each item as caro, barato or normal (expensive, cheap, or normal).

The post-task stage focused on at least one of the following: repetition, focus on forms, or reflection. All post-tasks in the present study included a teacher-fronted time of generalized feedback, and reflection. Learners shared their experience with the task as well as vocabulary words learned. The instructor provided generalized feedback to address common mistakes in pronunciation or vocabulary usage. In the traditional classroom, the post-task was conducted from the front of the room. In the Montessori classroom, it was conducted individually with each group.
**Classroom Differences**

In the Montessori classroom, pre-task instructions were given individually to each group at their workstation. Tasks took place at the same individual workstations. The post-task was conducted individually with each group as they finished.

In the traditional classroom, learners sat in desks in pairs for the pre-task explanation and instructions which were given from the front of the classroom. They stayed at their desks to work on the pre-task activity. Tasks also took place in two-seater desks. For the post-task, learners stayed in their seats, but focused their attention to the front of the room for discussion and reflection.

**Teacher Roles**

The teacher filled the role of moderator, facilitator, and giver of feedback in both classroom types. The only semi teacher-centered instruction took place during the pre- and post-task. During the pre-task in the Montessori classroom, the teacher joined pairs at their tables to lead discussion and provide modeling instructions for the task. The teacher assumed the same position for the post-task and led a discussion. In the traditional classroom, the teacher stood at the front of the room and made use of the white board during the pre-task while facilitating learner interaction. The post-task entailed the same positionality as the teacher led the learners in discussion and reflection. In both classrooms, learners were expected to raise their hand before speaking.
During the main task, the teacher circulated the classroom in both the Montessori and traditional classrooms offering feedback, assistance, and direction. In the Montessori classroom, the teacher joined the learners by sitting at the table or on the floor. In the traditional classroom, the teacher stood at the learners’ desk or kneeled to their level.

Assessments

At the beginning of the study, all learners took a matching pre-test that covered the noun and adjective vocabulary that was used throughout all lessons. For the numbers portion, learners wrote the number that corresponded to the written number in Spanish. Vocabulary lists can be found in Appendix B. The test used a vocabulary knowledge scale adapted for children based on multiple studies (Koolstra & Beentjes, 1999; Kahn-Horwitz & Shimron, 2005; Cunningham & Graham, 2000; Jean & Geva, 2009). The same test was given to learners a second time at the end of the study. Weekly vocab tests were also given to account for any learners who might be absent for the post-test. The pre- and post-test was the same vocabulary recognition task test adapted for young learners (Appendix C). Learners simply drew lines to match pictures of vocab words to the words written in Spanish.

Uptake Sheets

Uptake sheets were given to each learner at the end of each class Monday through Thursday since Fridays were test days. As shown in Figure 3.3, due to 45-minute classroom limits, the pre-task was done the day before the main and post-task. In both classroom types, all task materials were provided for learners in a folder at the center of the desk or table. Once they finished the pre-task or main task, they filled out the uptake sheets, then returned all materials to
the folder. In order to protect participant privacy, no identifying data was listed on uptake sheets. They were only classified by classroom type, group, and date.

**Procedure**

Learners were recruited by the program coordinator at the school. IRB approved recruitment flyers were attached to the summer enrichment program forms and sent home with each child in grades 4 and 5. Learners had the choice of Spanish or Latin. The parents chose the language class when enrolling their child in the program. The parents of all learners who signed up for Spanish were provided with information about the research and consent forms. Sixteen consent forms were collected. Those who enrolled their children in Spanish but didn’t submit a consent form were contacted by the program coordinator to inquire about their willingness to allow their child to participate in the research. Two students sporadically attended course, but never provided consent forms. No data was collected from these students. Twelve participants who had consent and assent forms as well as consistent attendance were included in the study.

At the beginning of the first day of class, the instructor explained the research and asked each child to sign an assent form if they were willing. All participants in the present study provided consent and assent forms. Data from three participants who had provided consent and assent forms was withdrawn from the study due to low attendance. Two other students provided consent forms, but never attended. This left a total of 12 student participants in the study.

Twelve learners split into two groups participated in this study. Each group of learners had five 45-minute Spanish classes per week. Tasks were an equal distribution of information
gap and opinion gap tasks. Each group alternated weeks in the Montessori and traditional classroom as seen in Table 3.5 and Figure 3.4. Information gap tasks were presented in counterbalanced order in weeks 1 and 2 and opinion gap tasks were presented in counterbalanced order in weeks 3 and 4.

This study was a repeated measures design that was counterbalanced within groups. All students participated in all treatments and in all assessments, but in different orders. Assessment included the same test at the beginning and end of the study as well as the same test broken up into weekly tests. Each group also had equal time in each classroom type. The setting was not counterbalanced as it would have created unnecessary distraction for learners to work in a different classroom each day and would have also taken up excessive class time to switch back and forth.

Each class followed the task cycle. Learners were given an uptake sheet at the end of each class, therefore uptake data was collected at the end of the pre-task and the end of each main task. The uptake sheet collected primarily affective data. On the uptake sheets, learners circled pictures to show their attitude and motivation. They colored a thermometer to record anxiety levels. There was also a space for learners to record any vocabulary words learned (Appendix A). TRJ’s were also kept by the researcher reflecting on each class with each group at the end of each day. All group work in the eight classes that included a main task was audio recorded and transcribed for coding.
Coding and Analysis

The present research study is quasi-experimental and uses mixed methods. Quantitative data was collected to analyze interaction, vocabulary learning, and affective factors. Supportive qualitative data was collected through daily teacher reflection journals.

Motivation, Attitude, and Anxiety

Affective factors were coded based on uptake sheet data. Data on motivation, attitude, and anxiety was collected through uptake sheets given to learners at the end of the pre-task and the main task (Appendix A). Anxiety was coded on a scale of 0-4 based on how students colored the thermometer. Emotions, represented by emojis, were coded as positive (-1) or negative (+1). Motivation was coded based on the uptake sheet as thumbs up (2), thumb in the middle (1) or thumbs down (0). Uptake sheets also included a space for learners to record vocabulary words learned. Vocabulary words learned data was not used in the final analysis since it was difficult to assess if learners wrote words while looking at the vocabulary sheet or from memory. Totals were then standardized for affective factors and separated by task type and classroom type.

Based on uptake data for anxiety, motivation, and attitude, frequencies were calculated based on classroom and task type. Quantitative coding was used on attitude data by sorting attitude markers as positive or negative.

Teacher Reflection Journals

Daily teacher reflection journals (TRJ) and general field notes were taken daily by the teacher who was also the researcher to provide a further explanation of data on interaction,
vocabulary acquisition, and affective factors. After quantitative data was completed, TRJ’s were considered as additional support.

**Vocabulary**

Vocabulary test data was first coded separately for pre-tests, post-tests, and weekly tests. Each individual vocabulary word was marked as right or wrong for each individual learner. Totals were then standardized for each and separated by task type and classroom type. Group means were calculated.

Learners took the same test as a pre and post-test at the beginning and end of the study (Appendix C). Based on adaptations from various studies (Koolstra & Beentjes, 1999; Kahn-Horwitz & Shimron, 2005; Cunningham & Graham, 2000; Jean & Geva, 2009), the pre- and post-test was a vocabulary recognition task test adapted for young learners. Learners simply drew lines to match pictures of vocab words to the words written in Spanish. For the numbers portion, learners wrote the number that corresponded to the written number in Spanish.

Pre and post-test data was categorized by task type and classroom type. Each group had two opinion gap and two information gap tasks in both the Montessori classroom and the traditional classroom. Two students missed the pre-test, therefore, this data was imputed based on the group mean since none of the learners had previous experience with Spanish. For vocabulary data, a 3-way repeated measures ANOVA was used to examine whether the 13 students who completed enough of the testing improved their vocabulary knowledge of words.
learned in different task types and different settings. Due to low participant numbers, no ANOVA was run on weekly test data, however, descriptive statistics were done.

**Interaction**

Interaction data was coded based on transcriptions of audio recordings of pair work during each main task. Each transcription was coded for number of vocabulary words in Spanish, number of vocabulary words in English, off task turns, total turns, task time, and researcher notes for each individual learner.

Interaction data is normally coded in terms of interactional modifications such as feedback and LRE’s as discussed in the literature review. Since these were young novice level learners and much of the data was in English with isolated Spanish words, that phenomena were not found in the data. This study followed task interaction research specifically with young learners by using other measures of interaction (Oliver et al. 2017). While very little interaction research has considered beginning level learners, in the few studies available, a few methods of collecting interaction data were common (Oliver et al. 2017, Pinter 2006, Mayo & Ibarrola 2015). It was necessary to devise measure of interaction appropriate for the data set.

Target vocabulary allowed for an analysis of Spanish usage. Counting target vocabulary in English isolated words that learners were capable of using in the target language, but chose to use English instead. Off task turns were counted based on the study by Oliver et al. (2017) which found that learners were leaning on and expanding their linguistic resources even if not in the target language. In this study, they counted off-task turns in order to determine lack of interest
or engagement in the task or general distraction since that would not be shown simply by looking at lack of target language usage. Based on other studies of TBLT with young learners, counting turns is a common measure to analyze interaction (Oliver et al. 2017, Pinter 2006, Mayo & Ibarrola 2015).

Affective data collection has often been done using uptake sheets which allow learners to report their own anxiety levels as was done in a study by Baralt and Gurzynski-Weiss (2011) in which learners report state anxiety across modality. Uptake sheets have also been used successfully in previous research to gauge affective factors with young learners (Oliver 2009). Daily teacher reflection journals (TRJ) were also collected to provide a qualitative element to support and expand on quantitative data.

This data was then categorized by task type and classroom type. Since some students missed some classes, this data was counterbalanced to average one task for each task type per group per classroom type. The means were calculated for each group.

Two by two repeated measures ANOVA was run on interaction data to analyze the effects of classroom type and task type. Each learner had four measures on which the repeated measures design was used: use of Spanish vocabulary terms, use of English equivalents to the Spanish vocabulary, off-task turns, and total turns. There was no grouping since all learners experienced every condition. Main factor effects, setting and task type, as well as interaction effects between these factors, were considered.
Chapter 4: Results

Introduction

This chapter presents an overview of the quantitative results of the present quasi-experimental research study that uses mixed methods to explore the effects of classroom type on interaction processes, vocabulary development, motivation, and anxiety. Analysis of the data seeks to answer the following research questions:

1. Does classroom design impact peer interaction, vocabulary development, and learner attitudes, motivation, and anxiety?
2. Does task type impact peer interaction, vocabulary development, and learner attitudes, motivation, and anxiety?

Quantitative data was collected to analyze interaction, vocabulary data, and affective factors. A two-way repeated measures ANOVA was used on interactional data to analyze Spanish and English vocab use (factors: task type and setting). A three-way repeated measures ANOVA was used on vocabulary pre and post-test data (factors: task type, setting, and time of testing). Due to low participant numbers, no ANOVA was performed on weekly test data. Descriptive statistics were used on uptake data to analyze motivation and anxiety. Qualitative data was collected from daily teacher reflection journals and will be included in the discussion.

Effect of Classroom Type and Task Type on Interaction Processes

Two by two repeated measures ANOVA was run on interaction data to analyze the effects of classroom type and task type. Each learner had four measures on which the repeated
measures design was used: use of Spanish vocabulary terms, use of English equivalents to the Spanish vocabulary, off-task turns, and total turns. There was no grouping since all learners experienced every condition. Main factor effects, setting and task type, as well as interaction effects between these factors, were considered.

In total, 8 students completed all tasks, so the inferential testing was conducted for 8 students per cell. The number of participants was too small to do repeated measures MANOVA, so separate repeated measures ANOVA’s were run for each of the four dependent variables. Repeated measures ANOVA was chosen as each learner had a score under each condition: information gap and opinion gap tasks in the traditional classroom and information gap and opinion gap tasks in the Montessori classroom.

The dependent variables for the present study were target Spanish vocabulary, target vocabulary in English, off task turns and total turns. These measures were chosen because participants were young learners and novice learners of Spanish, therefore, a significant portion of interaction was in English. Target vocabulary allowed for an analysis of Spanish usage. Counting target vocabulary in English isolated words that learners were capable of using in the target language but chose to use English instead. Based on other studies of TBLT with young learners, counting turns is a common measure to analyze interaction.
Spanish Vocabulary Interaction

Table 4.1 displays the descriptive statistics for use of the target Spanish vocabulary words for information gap and opinion gap tasks performed in Montessori and traditional classrooms. All means in the chart below were normed to the number of minutes.

Table 4.1

Descriptive Statistics for Spanish Vocabulary

<table>
<thead>
<tr>
<th>Setting</th>
<th>TaskType</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mont</td>
<td>Info</td>
<td>1.341</td>
<td>0.744</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>1.728</td>
<td>1.680</td>
<td>8</td>
</tr>
<tr>
<td>Trad</td>
<td>Info</td>
<td>0.587</td>
<td>0.666</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>0.722</td>
<td>0.722</td>
<td>8</td>
</tr>
</tbody>
</table>

In the Montessori classroom, learners used an average of 1.341 Spanish words per minute in information gap tasks and 1.728 Spanish words per minute in opinion gap tasks. In the traditional classroom, learners used an average of 0.587 Spanish words per minute in information gap tasks and 0.722 words per minute in opinion gap tasks. Spanish usage was higher in the Montessori classroom across task types.

Table 4.2 below displays the inferential statistics for use of the target Spanish vocabulary words for information gap and opinion gap tasks performed in Montessori and traditional classrooms.
### Table 4.2

*Spanish Vocabulary ANOVA Results*

<table>
<thead>
<tr>
<th>Cases</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>( \omega^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>6.196</td>
<td>1</td>
<td>6.196</td>
<td>5.031</td>
<td>.060</td>
<td>0.185</td>
</tr>
<tr>
<td>TaskType</td>
<td>0.546</td>
<td>1</td>
<td>0.546</td>
<td>0.831</td>
<td>.392</td>
<td>0.000</td>
</tr>
<tr>
<td>Residuals</td>
<td>4.596</td>
<td>7</td>
<td>0.657</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting ( \ast ) TaskType</td>
<td>0.126</td>
<td>1</td>
<td>0.126</td>
<td>0.134</td>
<td>.725</td>
<td>0.000</td>
</tr>
<tr>
<td>Residuals</td>
<td>6.585</td>
<td>7</td>
<td>0.941</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For Spanish vocabulary use in interaction data, there was no significant interaction effect (\( F=.134, \ p=.725 \)) as shown in the table below. The task type factor did not significantly impact Spanish vocabulary use (\( F=.831, \ p=.392 \)). The factor of setting had a P value of .06 (\( F=5.031, \ p=.06 \)), indicating that this factor approached, but did not reach significance, and may be considered a non-statistical trend. It is likely that with a larger number of participants, this effect would have reached statistical significance. Effect sizes were calculated using \( \omega^2 \) as this is the preferred measure for RM factors. It was interpreted based on the following: <.01 represented a very small effect size, .01-.05 represented a small effect size, .06-.14 represented a medium effect size and .14+ represented a large effect size. Omega\(^2\) for setting is 1.85, which is a fairly large effect size. The mean use of Spanish vocabulary is displayed in Figure 4.1 below.
In the Montessori setting, learners used more vocabulary in Spanish across task types. This difference approached significance, as explained above. The lines are almost parallel, demonstrating that one factor did not affect the trajectory of the other; therefore, there was no interaction. Learners always used more Spanish vocabulary on opinion gap tasks than information gap tasks, but the difference wasn’t significant.

**English Vocabulary Interaction**

Table 4.3 below displays the descriptive statistics for English vocabulary usage for information gap and opinion gap tasks performed in Montessori and traditional classrooms. English vocabulary equivalents for the Spanish target words were counted for this analysis. All means in the chart below were normed to the number of minutes.
In the Montessori classroom, learners used an average of 0.629 English words per minute in information gap tasks and 0.534 English words per minute in opinion gap tasks. In the traditional classroom, learners used an average of 0.127 English words per minute in information gap tasks and 0.918 words per minute in opinion gap tasks. Students had consistent usage of English across task types in the Montessori classroom. In the traditional classroom, English usage was higher in opinion gap tasks and lower in information gap tasks. Results of the ANOVA for English vocabulary are displayed below in Table 4.4

Table 4.3

Descriptive Statistics for English Vocabulary

<table>
<thead>
<tr>
<th>Setting</th>
<th>TaskType</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mont</td>
<td>Info</td>
<td>0.629</td>
<td>0.584</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>0.534</td>
<td>0.355</td>
<td>8</td>
</tr>
<tr>
<td>Trad</td>
<td>Info</td>
<td>0.127</td>
<td>0.172</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>0.918</td>
<td>0.826</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 4.4

English Vocabulary ANOVA Results

<table>
<thead>
<tr>
<th>Cases</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>ω²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>0.028</td>
<td>1</td>
<td>0.028</td>
<td>0.156</td>
<td>0.704</td>
<td>0.000</td>
</tr>
</tbody>
</table>

94
For English vocabulary use in the interaction data, main factors effects were not significant for setting nor task type, indicating that neither of these factors significantly influenced the use of English vocabulary. There was a significant interaction effect of setting and task type (F = 6.054; p = 0.043). These findings are displayed in Figure 4.2 below.

**Figure 4.2**

*English Vocabulary Use*

Use of English was close to the same in the Montessori classroom for both task types, however in the traditional classroom, English use was significantly higher in opinion gap tasks and significantly lower in information gap tasks.
Off Task Talk

Table 4.5 displays the descriptive statistics for off task talk in information gap and opinion gap tasks performed in Montessori and traditional classrooms. These data are ratios of off-task turns to total turns.

Table 4.5

Descriptive Statistics for Off Task Talk

<table>
<thead>
<tr>
<th>Setting</th>
<th>TaskType</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mont</td>
<td>Info</td>
<td>0.185</td>
<td>0.189</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>0.139</td>
<td>0.126</td>
<td>8</td>
</tr>
<tr>
<td>Trad</td>
<td>Info</td>
<td>0.342</td>
<td>0.422</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>0.537</td>
<td>0.517</td>
<td>8</td>
</tr>
</tbody>
</table>

Results show that approximately 19 percent of information gap task turns, and 14 percent of opinion gap task turns were off tasks in the Montessori classroom, whereas in the traditional classroom approximately 34 percent of information gap task turns, and 54 percent of opinion gap task turns were off task. The results of the ANOVA for off-task talk are presented in Table 4.6.

Table 4.6

Off Task Talk ANOVA Results

<table>
<thead>
<tr>
<th>Cases</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>$\omega^2$</th>
</tr>
</thead>
</table>

96
<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>7.660</td>
<td>1</td>
<td>0.028</td>
<td>0.246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TaskType</td>
<td>0.349</td>
<td>1</td>
<td>0.573</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting × TaskType</td>
<td>0.699</td>
<td>1</td>
<td>0.431</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For off task talk, there was no significant interaction term as seen in the table above (setting by task type p = 0.431). There was no main factor effect for task type (F = 0.349, p = 0.573). There was a significant main factor effect for setting (F=7.660, p = 0.028). These findings are displayed in Figure 4.3 below.

**Figure 4.3**

*Off task talk*
There was very little off-task talk in the Montessori classroom and quite a lot in the traditional classroom regardless of task type as shown in the graph above. It can be concluded that there were more off-task turns in the traditional classroom than the Montessori classroom.

**Total Turns**

Table 4.7 displays the descriptive statistics for total turns in information gap and opinion gap tasks performed in Montessori and traditional classrooms. It should be noted that many of the total turns were partially or fully in English, as the learners were novice learners of Spanish.

**Table 4.7**

*Descriptive Statistics for Total Turns*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Task Type</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mont</td>
<td>Info</td>
<td>2.339</td>
<td>0.446</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>2.748</td>
<td>1.423</td>
<td>8</td>
</tr>
<tr>
<td>Trad</td>
<td>Info</td>
<td>1.533</td>
<td>1.419</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>2.400</td>
<td>1.513</td>
<td>8</td>
</tr>
</tbody>
</table>

In the Montessori classroom, there was an average of 2.339 total turns per minute in information gap tasks and 2.748 total turns per minute in opinion gap tasks. In the traditional classroom, learners took an average of 1.533 turns per minute in information gap tasks and 2.4 turns per minute in opinion gap tasks. Students had more total turns in the Montessori classroom and the highest total turns overall in opinion gap tasks. The ANOVA results for total turns are displayed in Table 4.8 below.
Table 4.8

*Total Turns ANOVA Results*

<table>
<thead>
<tr>
<th>Cases</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>$\omega^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>2.662</td>
<td>1</td>
<td>2.662</td>
<td>2.414</td>
<td>0.164</td>
<td>0.082</td>
</tr>
<tr>
<td>TaskType</td>
<td>3.258</td>
<td>1</td>
<td>3.258</td>
<td>1.129</td>
<td>0.323</td>
<td>0.012</td>
</tr>
<tr>
<td>Setting $\times$ TaskType</td>
<td>0.420</td>
<td>1</td>
<td>0.420</td>
<td>0.289</td>
<td>0.608</td>
<td>0.000</td>
</tr>
</tbody>
</table>

There was no significant interaction term, and no significant main factor effects for task type or setting. These data suggest that the setting and task type did not influence the total amount of oral engagement by learners in these tasks.

**Effect of Classroom Type and Task Type on Vocabulary Development**

For vocabulary data, a 3-way repeated measures ANOVA was used to examine whether the 13 students who completed enough of the testing to be included in the analysis improved their vocabulary knowledge of words learned in different task types and different settings. For the previous data set on interaction, a 2-way ANOVA was run because there were two repeated measures factors. While continuing to look at those two factors, setting and task type, the factor of time was added since they took a pre-test at the beginning of the study and a post test at the end of the study.
Table 4.9 displays the descriptive statistics for vocabulary development based on information gap and opinion gap tasks performed in Montessori and traditional classrooms.

**Table 4.9**

*Descriptive Statistics for Test Data*

<table>
<thead>
<tr>
<th>Setting</th>
<th>Task Type</th>
<th>Time</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montessori</td>
<td>Info</td>
<td>Pre</td>
<td>0.692</td>
<td>0.751</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post</td>
<td>5.077</td>
<td>3.013</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>Pre</td>
<td>2.308</td>
<td>1.797</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post</td>
<td>8.692</td>
<td>5.105</td>
<td>13</td>
</tr>
<tr>
<td>Traditional</td>
<td>Info</td>
<td>Pre</td>
<td>0.769</td>
<td>0.832</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post</td>
<td>6.462</td>
<td>2.259</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Opinion</td>
<td>Pre</td>
<td>2.538</td>
<td>2.602</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post</td>
<td>10.769</td>
<td>5.510</td>
<td>13</td>
</tr>
</tbody>
</table>

Descriptive statistics for test data show that pre-test scores were highest for opinion gap tasks, indicating the potential of some previous exposure which will be discussed in more depth in the following chapter. The highest levels of vocabulary learning as demonstrated by test data were opinion gap tasks in the traditional classroom as demonstrated by the mean post-test of 10.769. Opinion gap tasks were still high in the Montessori classroom with a mean of 8.692. Information gap tasks presented the lowest levels of vocabulary leaning based on the mean of
5.077 in the Montessori classroom and 6.462 in the traditional classroom. Table 4.10 below demonstrates the ANOVA results for the test data, showing learners vocabulary development.

<table>
<thead>
<tr>
<th>Cases</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>ω²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>23.087</td>
<td>1</td>
<td>23.087</td>
<td>1.563</td>
<td>0.235</td>
<td>0.018</td>
</tr>
<tr>
<td>Task Type</td>
<td>207.779</td>
<td>1</td>
<td>207.779</td>
<td>21.477</td>
<td>&lt; .001</td>
<td>0.340</td>
</tr>
<tr>
<td>Time</td>
<td>990.779</td>
<td>1</td>
<td>990.779</td>
<td>118.779</td>
<td>&lt; .001</td>
<td>0.728</td>
</tr>
<tr>
<td>Setting * Task Type</td>
<td>1.163</td>
<td>1</td>
<td>1.163</td>
<td>0.154</td>
<td>0.702</td>
<td>0.000</td>
</tr>
<tr>
<td>Setting * Time</td>
<td>16.163</td>
<td>1</td>
<td>16.163</td>
<td>1.543</td>
<td>0.238</td>
<td>0.014</td>
</tr>
<tr>
<td>Task Type * Time</td>
<td>33.471</td>
<td>1</td>
<td>33.471</td>
<td>4.731</td>
<td>0.050</td>
<td>0.070</td>
</tr>
<tr>
<td>Setting * Task Type * Time</td>
<td>0.471</td>
<td>1</td>
<td>0.471</td>
<td>0.116</td>
<td>0.740</td>
<td>0.000</td>
</tr>
</tbody>
</table>

There is no significant three-way interaction (setting*task type*time). There was a significant interaction between time and task type, but not significant interaction between setting and time or setting and task-type. Both time and task type showed significant main factor effects. The results for time and task type are illustrated in Figure 4.4 below.
As clearly shown, the post-test scores were higher than the pre-test scores, which accounts for the main factor effect for time. At both the pre- and post-test, learners had higher scores on the vocabulary learned in opinion gap tasks than in information gap tasks, which led to the main factor effect for task type. As shown in Figure 4.4 above, the lines representing information gap and opinion gap tasks are close to parallel. However, there is a bigger gap between information gap and opinion gap tasks for the post-test than there was in the pre-task, indicating that the difference between vocabulary knowledge in information gap and opinion gap tasks widened at the post-test. This suggests that the rate of learning was faster in opinion gap tasks than in information gap tasks (accounting for the significant interaction effect for these two factors). The effect size was medium.
Effect of Classroom Type and Task Type on Affective Factors

To assess affective factors, each learner filled out an uptake sheet at the end of each class (Appendix A). Based on uptake data, frequencies were calculated based on classroom and task type. Overall, it was found the Montessori classroom had positive effects on anxiety and motivation regardless of task type.

Anxiety

Learners rated their anxiety at the end of each class on a scale of 0-4 using the uptake sheets. Frequency data for anxiety in information gap tasks is displayed below in Figure 4.5

Figure 4.5

 Frequencies for Anxiety in Information Gap Tasks
For information gap tasks in the Montessori classroom, 23 uptake sheets were collected. Thirty-five percent noted that their anxiety was at zero (lowest anxiety), 52 percent said that it was at level one, 4 percent noted level two, and 9 percent at level four (highest anxiety). In the traditional classroom 16 uptake sheets were collected. Twenty-five percent listed their anxiety at level zero, 44 percent at level one, 6 percent at level two, and 25 percent at level four.

For opinion gap tasks in the Montessori classroom, 26 uptake sheets were collected. The frequencies are illustrated in Figure 4.6 below.

**Figure 4.6**

*Frequencies for Anxiety in Opinion Gap Tasks*
In the Montessori classroom, fifty-four percent noted that their anxiety was at zero and 46 percent said that it was at level one. Zero learners listed anxiety at level two or above. In the traditional classroom 23 uptake sheets were collected. Thirty-five percent listed their anxiety at level zero, 52 percent at level one, 4 percent at level three and 9 percent at level four. As shown, in Figure 4.5 and Figure 4.6, the Montessori classroom had the most positive effect on anxiety. Although these results both show a balanced distribution, following the rest of the data, the highest levels of anxiety are reported less often in the Montessori. Figure 4.7 below displays anxiety levels based solely on task type.

**Figure 4.7**

*Anxiety Frequencies Based on Task Type*
Frequencies for anxiety were averaged to explore anxiety levels based on task type. Anxiety levels were overall higher in information gap task than opinion gap tasks as displayed in the figure above. Across classroom types, anxiety levels of 0 were marked by an average of 30 percent of learners in information gap tasks, but 45 percent in opinion gap tasks. Level 4 anxiety was listed by an average of 17 percent of learners in information gap tasks, but only 5 percent in opinion gap tasks.

Opinion gap tasks in the Montessori classroom were the only tasks with no anxiety levels over one. The results showed that overall anxiety was lower in the Montessori classroom on both information gap and opinion gap tasks.

**Motivation**

Learners rated their motivation at the end of each class on the uptake sheets using a scale of thumbs down (0), thumb in the middle (1) or thumbs up (2). Results showed that overall motivation was higher in the Montessori classroom for both types of tasks.

For information gap tasks in the Montessori classroom, 22 uptake sheets were collected. Frequencies are shown below in Figure 4.8
Nine percent of learners rated motivation at level zero, 9 percent at level one, and 82 percent at level two. For information gap tasks in the traditional classroom, 16 uptake sheets were collected. No learners listed motivation levels at zero. Thirty-one percent listed it at level one and 69 percent at level two. Overall, motivation in information gap tasks was slightly higher in the Montessori classroom.

For opinion gap tasks in the Montessori classroom, 24 uptake sheets were collected. Figure 4.9 below demonstrates frequencies.
Eight percent of learners listed motivation at level one and 92 percent at level two in the Montessori classroom. No learners listed motivation at level zero. For opinion gap tasks in the traditional classroom, 16 uptake sheets were collected. Thirty-one percent listed motivation at level one and 69 percent at level two. Motivation was slightly higher in the Montessori classroom across both task types. The highest levels of motivation across classroom types was in opinion gap tasks.
Attitude

Based on uptake data (Appendix A), frequencies were calculated based on classroom and task type. Each emoji was categorized as positive or negative as shown in Table 4.11.

Table 4.11

*Frequencies for Attitude in Information Gap Tasks*

<table>
<thead>
<tr>
<th>Emoji Text</th>
<th>Positive/Negative</th>
<th>Montessori (%)</th>
<th>Traditional (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calm</td>
<td>P</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>Happy</td>
<td>P</td>
<td>20</td>
<td>23</td>
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<tr>
<td>Silly</td>
<td>P</td>
<td>12</td>
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<tr>
<td>Relaxed</td>
<td>P</td>
<td>23</td>
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<tr>
<td>Shy</td>
<td>P</td>
<td>0</td>
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</tr>
<tr>
<td>Surprised</td>
<td>P</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Nervous</td>
<td>N</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Annoyed</td>
<td>N</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sad</td>
<td>N</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Hungry</td>
<td>N</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Angry</td>
<td>N</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Confused</td>
<td>N</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Sleepy</td>
<td>N</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Hurt</td>
<td>N</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total responses</strong></td>
<td></td>
<td><strong>64</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>

There were more positive attitude markers than negative across classroom and task types.

Positive attitudes in the Montessori classroom were slightly higher for opinion gap tasks.
However, in the traditional classroom, there was a higher percentage of positive attitude markers reported for information gap tasks.

Since attitude data was multiple selection, total sections for each task type and classroom type were added and overall positive and negative percentages were determined. As shown in the Figure 4.10 below.

**Figure 4.10**

*Frequencies for Attitude in Information Gap Tasks*

Seventy-eight percent of learner’s attitude markers reported for information gap tasks in the Montessori classroom were positive while 22 percent were negative. In the traditional classroom,
80 percent were positive, and 19 percent were negative. Table 4.12 and Figure 4.11 show attitude markers for opinion gap tasks.

**Table 4.12**

*Frequencies for Attitude in Opinion Gap Tasks*

<table>
<thead>
<tr>
<th>Emoji Text</th>
<th>Positive/Negative</th>
<th>Montessori (%)</th>
<th>Traditional (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calm</td>
<td>P</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>Happy</td>
<td>P</td>
<td>24</td>
<td>16</td>
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<tr>
<td>Silly</td>
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<td>15</td>
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<tr>
<td>Relaxed</td>
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<tr>
<td>Shy</td>
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<tr>
<td>Surprised</td>
<td>P</td>
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<td>4</td>
</tr>
<tr>
<td>Nervous</td>
<td>N</td>
<td>0</td>
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</tr>
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<td>Annoyed</td>
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</tr>
<tr>
<td>Sad</td>
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<tr>
<td>Hungry</td>
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<tr>
<td>Confused</td>
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<tr>
<td>Sleepy</td>
<td>N</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Hurt</td>
<td>N</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total responses**

46 49

While overall positive responses for information gap tasks were slightly higher in the traditional classroom, for opinion gap tasks, they were noticeably higher in the Montessori classroom. It is noteworthy that 16 percent marked “sleepy” for opinion gap tasks in the traditional classroom.
Figure 4.1 demonstrates total sections for each task type and classroom type which were added and overall positive and negative percentages were determined.

**Figure 4.11**

*Frequencies for Attitude in Opinion Gap Tasks*

![Bar chart showing frequencies for attitude in opinion gap tasks between Montessori and Traditional classrooms.]

As shown in Figure 4.10, 85 percent of attitude markers reported for opinion gap tasks in the Montessori classroom were positive while 15 percent were negative. In the traditional classroom, 71 percent were positive, and 29 percent were negative. Overall, there were significantly more positive than negative attitude markers chose across classroom and task types.

**Summary**

Two by two repeated measures ANOVA was run on interaction data to analyze the effects of classroom type and task type. For Spanish vocabulary usage, learners used more vocabulary in Spanish across task types in the Montessori classroom. Across classroom types,
learners always used more Spanish vocabulary on information gap tasks than opinion gap tasks. These differences approached but did not reach significance. Students had consistent usage of English across task types in the Montessori classroom. In the traditional classroom, English usage was significantly higher in opinion gap tasks and lower in information gap tasks. There was more off task talk in the traditional classroom than in the Montessori classroom regardless of task type. Setting and task type did not influence the total amount of oral engagement by learners in these tasks based on the number of total turns.

A 3-way repeated measures ANOVA was used to determine the effect of classroom type and task type on vocabulary development. It showed that the rate of learning was faster in opinion gap tasks than in information gap tasks. Learning was not significantly affected by setting.

Frequencies calculated based on uptake data showed that the Montessori classroom had positive effects on anxiety and motivation regardless of task type. Anxiety and motivation levels were lowest in opinion gap tasks across classroom types. There were significantly more positive than negative attitude markers across task and classroom types. Traditional and Montessori classroom types had similar results for information gap tasks, but in opinion gap tasks, there were more positive markers in the Montessori classroom and more negative markers in the traditional classroom.

In conclusion, the overall results suggest opinion gap tasks and the Montessori classroom type have positive effects on affective factors, interaction, and vocabulary acquisition. Based on
the research findings in this chapter, the research questions for this project will be discussed in
the following chapter in addition to an interpretation of the current research findings followed by
a theoretical discussion in the final chapter.
Chapter 5: Discussion

Introduction

The present study explored how tasks are performed and experienced by students in different types of classrooms. Specifically, it looked at the effects of the classroom setting and task type on interaction processes and affective factors within a Spanish class for young learners with vocabulary as the target linguistic feature. Classroom comparisons were made between traditional and Montessori designs and information and opinion gap tasks as guided by the following research questions:

3. Does classroom design impact peer interaction, vocabulary, development, and learner attitudes, motivation, and anxiety?

4. Does task type impact peer interaction, vocabulary, development, and learner attitudes, motivation, and anxiety?

Based on the qualitative and quantitative results of this study, the main findings contribute to TBLT and interaction research. Overall, the Montessori classroom design exceeded the traditional classroom in affective factors, vocabulary acquisition, and interaction. Opinion gap tasks were most effective in terms of affective factors for young learners as well as rate of learning.

This chapter will explore the findings of each research question supported by qualitative data from teacher reflection journals (TRJ). It is important to consider other factors that affected learner anxiety from outside of the classroom since much of TBLT research has been done in
laboratory settings (Mackey & Ross-Feldman 2011). To provide a more robust study, daily teacher reflection journals were taken by the teacher who was also the researcher. This data was collected in order to support quantitative data and will be discussed throughout this chapter to provide a more thorough analysis. Along with an exploration of quantitative and qualitative data, this chapter will also provide a more detailed look into conceptual connections based on the data and previous research.

**Montessori vs Traditional**

Overall, the Montessori classroom design provided a more successful context for a TBLT course for young learners than a traditional classroom in terms of affective factors, interaction, and vocabulary acquisition. There was more consistency in the Montessori classroom than the traditional classroom. While English usage in the traditional classroom was highly dependent on task type, it stayed close to the same in the Montessori based on interaction data. In the Montessori setting, learners used more vocabulary in Spanish across task types.

**Interaction Findings**

Statistical analysis on interaction data based on classroom type explored Spanish and English vocabulary usage as well as off task turns and total turns. English vocabulary was defined in terms of the use of English equivalents for the target Spanish vocabulary words. Turns were counted based on previous research by Oliver et al. (2017) with young language learners.
**Vocabulary Usage**

Statistical results showed that learners used the highest levels of Spanish vocabulary in the Montessori classroom. They used an average of 1.5 Spanish words per minute in the Montessori classroom and an average of 0.6 in the traditional classroom. For Spanish vocabulary usage, setting approached but did not reach significance. As previously stated, this is likely due to the small number of participants. This data will be further explored through supporting qualitative data later in this chapter.

For English usage, learners used comparable levels in the Montessori and traditional classrooms, however, it was consistent across task type in the Montessori classroom, whereas in the traditional classroom, it varied.

Many of the generalized negative effects were more pronounced in the traditional classroom. For example, use English was highest in the opinion gap tasks, but the highest numbers overall were opinion gap tasks in the traditional classroom (40 percent more than in the Montessori classroom).

**Turns**

Results showed that approximately 17 percent of turns were off tasks in the Montessori classroom, whereas in the traditional classroom approximately 30 percent of turns were off task. There was very little off-task talk in the Montessori classroom and quite a lot in the traditional classroom regardless of task type which suggests that the Montessori classroom provided a better environment for focused task work and collaboration. While there were less off task turns in the
Montessori classroom, there were also more total turns. There was an average of 2.5 turns per minute in the Montessori classroom and 1.95 in the traditional classroom.

**Vocabulary Acquisition**

There were no significant findings for vocabulary acquisition based on classroom type. Opinion gap vocabulary test scores were slightly higher in the traditional classroom (10.769) than in the Montessori classroom (8.692). Descriptive statistics showed, however, that pre-test scores were highest for opinion gap tasks, indicating the potential of some previous exposure. This will be discussed in more detail later in this chapter.

**Affective Findings**

Frequencies calculated based on uptake data showed that the Montessori classroom had positive effects on anxiety and motivation regardless of task type. Compared to the traditional classroom, anxiety was lower in the Montessori classroom and motivation levels were higher. There was no significant effect of classroom type on attitude.

**Anxiety**

As was shown in interaction data, generalized negative effects were more pronounced in the traditional classroom. Information gap tasks elicited the highest anxiety markers across classroom types, but the highest numbers overall were in the traditional classroom. Level ‘4’ anxiety for information gap tasks was marked by 9 percent of learners in the Montessori classroom and 25 percent of learners in the traditional classroom. The separate workspace seating with low shelving to separate groups seemed to limit distractions leading to positive
effects on motivation, anxiety, and language acquisition. The role of distractions and collaboration will be discussed later in this chapter in the section on conceptual connections.

Qualitative data was collected through teacher reflection journals (TRJ) to support quantitative affective data. The goal of TRJ’s was to consider other factors that may have contributed to the results of this study. An example of this was taken from a TRJ during Week #2 in the Montessori classroom.

_Students are seeming to really enjoy the uptake sheets. They are excited to “write about their feelings.” Some said that they wrote ‘high anxiety’ because they are stressed about other things such as getting in trouble in another class or a teacher saying something hurtful to them earlier in the day._

While filling out uptake sheets, students articulated the presence of factors that affected anxiety from outside of the classroom. Another example of this is illustrated by a particularly difficult situation that took place during Week #1 in the traditional classroom.

_Atttempted to teach info #1. Things got very chaotic very quickly. Learners were very engaged in the pre-task matching game. Giving out uptake sheets and setting up recording devices was tricky. [Participant 4] lost matching and was unwilling to participate anymore after that. I told him he could take a break and sit at another table. He sat for a while, then eventually got up, started screaming and running through the_
class flipping over tables and chairs and pushing things off of tables. I called for support and he was taken out of the class. No work happened after that.

While this is a salient example of affective factors outside of the classroom, no such interactions were reported in the Montessori classroom, which shows that these results contribute to the potential for Montessori classroom design to support the mitigation of outside affective factors that could negatively affect learning. Another TRJ illustrates the presences of outside factors during Week #4 in the Montessori classroom.

This day felt chaotic. Teachers said some of them were just having hard days. It is also the last week of camp so everyone is kind of winding down from working as serious.

Interestingly, even with documented outside effects on affective factors, the Montessori classroom still exceeded the traditional classroom with positive effects on affective factors overall. The transferable results of this study support the use of Montessori classroom design to promote lower anxiety in authentic, public classroom settings with young learners.

Motivation

Motivation was highest in the Montessori classroom overall. In information gap tasks, 82 percent of learners marked the highest level of motivation in the Montessori classroom compared to 69 percent in the traditional classroom. For opinion gap tasks the percentage of higher motivation in the traditional classroom stayed the same, but in the Montessori classroom, it went up to 92 percent. In the following TRJ is from Week #4 in the Montessori classroom.
Teachers said some of them were just having hard days. It is also the last week of camp, so everyone is kind of winding down from working as serious. They had a harder time getting the directions of this task than the last group did. They did stay pretty focused in their groups once they knew what they were doing. There was about 50 percent success with the task with most groups getting about half right.

This TRJ illustrates the ability for learners to focus and become motivated on task work even with the presence of outside affective factors in the Montessori classroom. The Montessori classroom also had positive effects on behavior. The following TRJ from Week #2 in the Montessori classroom elaborates further.

Behavior was so much better in the Montessori classroom. It was helpful having groups more spread out.

It seemed that seating design played the largest role in learner behavior which let to the higher motivation levels as shown by quantitative data.

Attitude

Overall, there were more positive than negative attitude markers across classroom types. Negative effects were not more pronounced in the traditional classroom based on attitude data as was the case for English vocabulary usage and anxiety levels. There were slightly higher levels of positive attitude markers and slightly lower numbers of negative markers in the traditional
classroom for information gap tasks. This was, however, a less than a 3 percent difference on both between traditional and Montessori classrooms.

Positive attitudes were slightly higher in the traditional classroom for information gap tasks than the Montessori classroom, yet lower in opinion gap tasks. This contradicts the hypothesis that the Montessori classroom would have positive effects on all affective factors. For this reason, it is important to consider other factors outside of the classroom. Information gap tasks in the traditional classroom happened during the first week of classes. This could have affected the data, as learners were getting used to a new classroom structure. While learners had experience in the Montessori classroom, TBLT lessons are highly interactive, and learners seemed excited for a more engaging class.

Summary

Overall, data from the present study pointed to the Montessori classroom as the most conducive classroom type for a TBLT course for young novice level learners of Spanish. Statistical data on interaction showed that in the Montessori classroom, learners used the highest levels of Spanish vocabulary, consistent use of English across task types, and less off task talk.

For the traditional classroom, there was less use of Spanish and inconsistent English usage which varied based on task type. There was also more off task talk. There were no significant findings based on classroom type and vocabulary.
The Montessori classroom had more positive effects on anxiety and motivation in comparison to the traditional classroom. Classroom type did not seem to have a significant effect on attitude.

Additional data from the TRJ’s support quantitative data that the Montessori classroom had overall positive effects on affective factors, yet they also illustrate the prominent role outside affective factors can play in the classroom and support the need for more classroom-based than research.

**Opinion vs Information Gap**

Overall, there were significant observable differences in interaction and vocabulary development based on task type regardless of setting. In opinion gap tasks, there were higher rates of English usage, vocabulary acquisition, and total turns. Anxiety levels were lower, and motivation was higher in opinion gap tasks. Attitude markers varied by task type.

**Interaction Findings**

Statistical analysis on interaction data based on task type showed that interaction was higher overall in opinion gap tasks. Opinion gap tasks included more English vocabulary usage, more Spanish vocabulary usage, and more off task turns. Nevertheless, the rate of learning was faster in opinion gap tasks based on vocabulary data.

**Vocabulary Usage**

Interaction results showed that across classroom types, learners always used slightly more Spanish vocabulary on opinion gap tasks than information gap tasks. Learners used an average of
1.2 Spanish words per minute in opinion gap tasks and .96 words per minute in information gap tasks.

English vocabulary equivalents for the Spanish target words were counted for this analysis. Results showed that learners used an average of .73 English words per minute in opinion gap tasks and .38 in information gap tasks. While there was more Spanish vocabulary usage in opinion gap tasks, there were also slightly higher levels of English equivalents for the Spanish target words.

**Turns**

While there was no main factor effect for task type and off task talk, results showed that approximately 19 percent of information gap task turns, and 14 percent of opinion gap task turns were off tasks in the Montessori classroom, whereas in the traditional classroom approximately 34 percent of information gap task turns, and 54 percent of opinion gap task turns were off task. While very slight, there were more off task turns in opinion gap tasks than information gap tasks.

Results showed an average of 2.6 total turns per minute in opinion gap tasks and 1.93 in information gap tasks. There was overall more interaction in opinion gap tasks than information gap tasks.

**Vocabulary Acquisition**

At both the pre- and post-test, learners had higher scores on the vocabulary from opinion gap tasks than information gap tasks, which led to the main factor effect for task type. The rate of
learning was faster in opinion gap tasks than in information gap tasks. This finding is particularly interesting because English usage was generally lower in opinion gap tasks while Spanish vocabulary use was higher in information gap tasks. It is important to note that the numbers task was taught through one set of opinion gap tasks; therefore, it is possible that learners had some previous exposure. This potential for previous exposure is also supported by the pre-test scores on the vocabulary for this task, which are higher than the pre-test scores for other vocabulary in this study. During the post test, some learners were singing the numbers song while others wrote out all the numbers they could remember sequentially, which they used to fill in the blanks on the test, indicating that higher exposure to Vocabulary Set #4 potentially affected results in opinion gap Tasks #3 and #4.

While there were high levels of English collaboration in opinion gap tasks, there were not significantly higher levels of off task talk. Further, vocabulary acquisition was higher in opinion gap tasks. This supports the benefit of collaboration, even if it is not in the target language, particularly for young novice language learners.

The present study found high levels of English interaction in opinion gap tasks, but also high levels of vocabulary acquisition. This phenomenon is recorded in research by Mayo & Ibarrola (2015) who found that turns in the L1 did serve the metacognitive function to organize information, check goals, and check for comprehension. This also supports the research from Pinter (2006) that off-task talk and L1 turns during a task serve an important metacognitive role and contribute to overall collaboration. This study took these findings into consideration by looking at data even if there were high numbers of off task turns. The results contribute to
existing literature by illustrating English interaction in opinion gap tasks can still be highly beneficial for language acquisition particularly with young learners and across classroom types.

**Affective Factors**

While the largest effect was classroom type, task type further supported results in favor of opinion gap tasks. Motivation was generally high in both task types and classroom types, but there was an increase overall in opinion gap tasks. Opinion gap tasks also facilitated the lowest anxiety levels.

**Attitude**

Positive attitude markers were the highest in opinion gap tasks in the Montessori classroom showing that the Montessori classroom type was conducive to opinion gap tasks, likely because of the lack of distraction due to seating design discussed in the previous section.

Attitude data for opinion gap tasks included slightly more negative markers than information gap tasks overall. In the traditional classroom, 16 percent marked “sleepy” for opinion gap tasks, whereas 9 percent marked “happy.” Both of the TRJ’s below are from opinion gap task days during Week #3 in the traditional classroom.

*I had to have a group of three because of an odd number of students and that seemed to negatively affect behavior and focus.*
Only 5 students in this group so only 2 actual groups. They ranked their favorite foods. I heard almost no Spanish and very little conversation.

TRJ’s support this data by showing the possibility that the high number of ‘sleepy’ attitude markers was related to low attendance numbers.

**Motivation**

Motivation stayed the same across task types in the traditional classroom type but was 10 percent higher in the Montessori classroom for opinion gap tasks. According to Deci & Ryan (1981), higher levels of motivation lead to better classroom behavior of learners. It seemed that the Montessori classroom design facilitated a more conducive environment for the success of opinion gap tasks which also correlated with high levels of motivation.

Another factor that potentially affected motivation levels may have been the behavior system. Throughout class, learners earned “pesos” for finishing assignments, speaking Spanish consistently or completing “early-finishers work.” Learners were allowed to use their pesos at the “store” each Friday regardless of classroom type. This is illustrated in a TRJ from an opinion gap task day in the traditional classroom in Week #3.

*Did the main task with both groups. Very motivated because we did the peso station at the end of class. Group A was still using significant English, but I did see some use of Spanish. Especially rolling r’s after our pronunciation lesson. Some groups were very hesitant to pronounce. They would freeze, afraid of pronouncing it incorrectly.*
While this TRJ shows the role of other factors affecting motivation, it also illustrates the potential of pronunciation raising anxiety and lowering motivation.

**Anxiety**

Anxiety was lowest in both classrooms during opinion gap tasks. Anxiety levels of ‘0’ were marked by an average of 30 percent of learners in information gap tasks, but 45 percent in opinion gap tasks. Level ‘4’ anxiety was listed by an average of 17 percent of learners in information gap tasks, but only 5 percent in opinion gap tasks.

In information gap tasks, oral communicative exchange was necessary for each task; however, learners discovered ways of navigating opinion gap tasks without speaking Spanish or without speaking at all which seemed to have a positive overall effect on motivation and anxiety in both classroom types, as shown by the positive overall affective factors and the high levels of vocabulary acquisition. Interestingly, even though some learners took advantage of the freedom to complete the opinion gap tasks without oral interaction, there were still more total turns per minute. This is illustrated by TRJ from Opinion Gap Task #4 in the traditional classroom.

This class was using quite a bit of Spanish, especially one group. Other groups, I kept having to remind them to use Spanish.
While all groups completed the same task, it seemed that some groups used more target language than others. TRJ’s also showed that even when learners were not communicating orally, they were finding other ways to navigate the task silently.

*I noticed that they weren’t pronouncing the words but rather pointing to their paper.*

Previous studies show that younger learners have less target language usage and on task talk, yet this still presents the potential for language learning even if not in the target language as learners were leaning on and expanding their linguistic resources (Oliver et al. 2017). This was supported by the present findings that in opinion gap tasks, there were higher rates of English usage and off task talk, but also higher levels of vocabulary acquisition.

**Summary**

Task type presented significant effects on interaction, vocabulary acquisition, motivation, and anxiety in favor of opinion gap tasks. While leaners used more English equivalents to target vocabulary and had more off task turns in opinion gap tasks, there was a slightly higher usage of Spanish vocabulary, more total turns, and a faster rate of learning based on vocabulary data. Opinion gap tasks also had the most positive effects on anxiety and motivation. Attitude wasn’t significantly affected by task type. These findings were further supported by TRJ’s to consider outside effects on affective factors. The following section will elaborate on other conceptual connections based on TRJ’s and previous research.
Conceptual Connections

The present study integrated TBLT with the innovative classroom design in an authentic classroom setting with young novice level learners. Building on these under researched topics, this section will consider salient conceptual connections based on qualitative and quantitative data from the present study and previous literature. We will explore learner autonomy, the role of the teacher, distraction, engagement and collaboration, and young novice level learners in the present study in connection to research in TBLT, Montessori, and education.

Autonomy

Based on the rationale for the Montessori classroom design (Lillard, 2007) as well early educational research that provides underpinnings for TBLT (Dewey 1913, 1938, Maehr, 1984), learning is enhanced when learners feel a sense of control and autonomy over their work. It can be deduced from interaction data that there were high levels of learner autonomy in the Montessori classroom. This TRJ illustrates the success and interest of student autonomy in an opinion gap task day during Week #3 in the traditional classroom.

*They played Battleship with the prices they chose. There was lots of conversation and Spanish use. This was one of the most successful tasks yet.*

Different learners interpreted the rules to this task differently, yet few learners asked for clarification. High levels of autonomy in opinion gap tasks were shown in qualitative data as learners asked less questions about instructions and often interpreted the task on their own. These findings reflect research on innovative classroom types (Zifferblatt 1972) showing that creating
privacy for learner workstations allows learners space to resolve questions on their own and the teacher to take a more distant role, leading to more learner autonomy.

Interaction data showed that learners navigated these tasks in different ways: sometimes there was no speaking or interaction and often all interaction was in English. Nevertheless, there were high levels of vocabulary acquisition, low levels of anxiety, and high levels of motivation. Across classroom types, learners always used more Spanish vocabulary on information gap tasks than opinion gap tasks. Interestingly, while there were high levels of English collaboration in opinion gap tasks, there were not higher levels of off task talk. This was also shown in the Montessori classroom in Week #2.

Anxiety and motivation seemed so much better in both groups. As I gave out uptake sheets, multiple students commented on how calm they felt or how this is the least anxiety they had had all week. I think this is partly because the hope of treats kept class on task, but also I kept the task very simple and prepared in folders. I think they liked knowing exactly what they had to do for the day.

Carreira et al. (2013) conducted a study on motivation with elementary age English learners and found that creating autonomy in the classroom both for the teacher and learners leads to intrinsic motivation in learners and perceptions of competence and relatedness. The qualitative data above suggests that autonomy was highest in the Montessori classroom and in opinion gap tasks. Both of these treatments led to the highest levels of motivation based on quantitative data supporting and situating previous research by Carreira et al. (2013) within
TBLT classes for young novice level learners in innovative classroom types. This data suggests higher levels of target language usage, vocabulary acquisition as well as the positive effects on anxiety and motivation in opinion gap tasks and the Montessori classroom could support data on the role of learner autonomy.

**Role of the Teacher**

According to Prabhu (1987), learning is best when situated in clear and meaningful contexts in order to prepare students for real language use. According to Braden (2006), the learner occupies the central role in the classroom with agency to determine use of linguistic forms, course content, and evaluation of task outcomes (Benson, 2001; Breen and Candlin, 1980; Nunan, 1996; Shohamy, 2001). Van Avermaet et al. (2006) argue that the teacher is the “learners most privileged interlocutor.” It is the role of the teacher in both TBLT and Montessori methodology to mediate these contexts.

While the teacher took on this role in both contexts, some initial directions were given from the room in the traditional classroom, but all directions had to be given to groups individually in the Montessori classroom due to the seating design. While a TBLT methodology was used in both classes, the Montessori classroom design proved more conducive to this teacher role. The following teacher reflection journal (TRJ) from the Montessori classroom during Week #2 further illustrates a few key findings of the Montessori classroom design.

*First day in Montessori classroom. Less teacher fronted instruction as there was no easy location although I did walk around the room for some general Spanish conversation at*
the beginning of both classes. Behavior was so much better in the Montessori classroom. It was helpful having groups more spread out.

This TRJ shows how the role of the teacher shifted in the Montessori classroom simply based on classroom design. It also suggests a correlation between better behavior and less teacher fronted instruction. Designated work-spaces also led to an adaptation in the role of the teacher. According to innovative classroom research (Moore 1986), designated workspaces initiated more teacher circulation without interference which led to positive results on behavior and engagement. While the teacher followed a TBLT methodology within both classroom types which promotes very little teacher fronted instruction, some directions were given from the front of the classroom in the traditional classroom, whereas, due to seating design, they were given to individual groups in the Montessori classroom.

Based on frequencies from uptake data, anxiety in opinion gap tasks was significantly lower across classroom types. Based on teacher reflection journals (TRJ), opinion gap tasks seemed to offer learners more flexibility. While both information gap and opinion gap tasks were done in pairs, opinion gap tasks required significant open-ended interaction. Learners required more teacher assistance in information gap tasks, usually in the form of task instructions. It is likely that less teacher interferences affected the lower anxiety levels in opinion gap tasks across all task types, especially in the Montessori classroom. In the TRJ below from an opinion gap task in Week #3, it can be observed that learners interpreted the instructions in their own way.
Had them write numbers on cards then sequence them. I expected this to be overly simplistic, but it was a challenge for them. It took the whole class time. One group did not even finish during class time, but it was partly due to not splitting up the work correctly, so they had repeats of each number which made sequencing impossible. I did hear them using the numbers in Spanish.

Key findings from quantitative and qualitative data show that the role of the teacher was unique in the Montessori classroom and in opinion gap tasks, the two treatments that resulted in the most positive results in interaction, vocabulary acquisition and affective factors. In the Montessori classroom, there was no teacher fronted instruction for task directions as they were given to groups at their individual workstations. TRJ’s showed that in opinion gap tasks, less teacher assistance was needed, and learners interpreted tasks in their own ways.

**Distraction, Engagement, and Collaboration**

**Classroom Type**

In the Montessori classroom, there was less distraction since tables were separated into individual workstations, resulting in the lowest levels of anxiety and the most consistency across all measures, particularly interaction. The previous sections have illustrated the stark difference in learner behavior between classroom types, attributing it, in part, to the seating design.

This supports quantitative results that the flexible and focused design of the Montessori classroom design led to the lowest levels of anxiety and highest levels of motivation. Quantitative results showed that the Montessori classroom also led to more target vocabulary
usage, more overall collaboration, and less off task talk than the traditional classroom. There were no recorded instances of students interacting with other groups or getting out of their seats in the Montessori classroom, but multiple in the traditional classroom as illustrated by two TRJ’s below both from different days during Week #1 in the traditional classroom.

[Participant 8] was constantly speaking out and out of his seat, plus an odd number of students were present, so I let him sit in the back and work on early finishers work.

Behavior wasn’t great. Girls were very giggly and kept getting out of their seats.

These TRJ’s demonstrate that collaboration was challenging in the traditional classroom due to distractions. Based on the first TRJ, it seemed that the spread-out seating in the Montessori classroom design improved behavior and focus. Research (Long 1976, 1985, 1989, Lillard, 2007) supports that collaboration is beneficial to learning, a concept central to both TBLT and the Montessori classroom design.

Innovative classroom research shows that table seating leads to more flexibility and focus of learners in group work (Harvey and Kenyon 2013). Siegel and Claydon (2016) stated that flexible design of space led to higher levels of motivation and enthusiasm. Research also states that classroom flexibility, particularly for young learners, leads to better behavior and higher levels of on task interaction (Tobia et al. 2022, Barrett et al. 2015). The Montessori classroom design which included research-based aspects of innovative classroom design proved more conducive to collaboration based on interaction data.
**Task Type**

Quantitative data showed higher levels of collaboration overall in opinion gap tasks (in English and Spanish). These tasks also showed higher levels of vocabulary acquisition. This supports the benefit of collaboration, even if it is not in the target language, particularly for young novice language learners. Educational research (Dewey 1913, 1938, Maehr, 1984), TBLT research (Prabhu, 1987; Ellis, 2003), and research on Montessori classroom design (Lillard, 2007) also state that learners succeed when they are interested in the work that they are doing. Based on anxiety and motivation data that showed more positive results for opinion gap tasks as well as support from teacher reflection journals suggest that the flexibility of opinion gap tasks allowed learners to seek out their own interests within the tasks. The following TRJ illustrated how the role of learner interest.

*They were very engaged in the task and I heard a lot of language use. I noticed [Participant #5] creating sentences with the words such as “he guapo, no guapo, I’m guapo.”*

This quote shows the role of learner interest in tasks. While it was not part of the instructions for learners to describe each other or themselves, Participant #5 sought out his own interests based on the flexibility of the task which led to more target language use and higher levels of engagement.
Young Novice Level Learners

An important aspect of this study is that the participants were young novice level learners of Spanish. In the study by Oliver et al. (2017), for young learners, on and off task talk both presented the potential for language learning even if not in the target language as learners were leaning on and expanding their linguistic resources. While there was no significant interaction term in the present study, there is very little off-task talk in the Montessori classroom and quite a lot in the traditional classroom regardless of task type. Oliver et al. (2017) could not determine if off task turns were due to lack of interest or engagement in the task or general distraction. They found that the older learners were more on task overall than younger learners. The present study provides evidence that innovative classroom design is effective for young learners as it positively affected off task talk, target language usage, and vocabulary acquisition.

Pinter (2006) found that while young learners were able to interact and negotiate tasks, they had a “looser approach to handling referential conflicts” and had lower levels of listening strategies as compared to the adult learners. Challenges also arose in how learners interpreted tasks. Child learners often interpreted directions differently from adult learners. They found that this could be particularly positive in developing “cognitive and metacognitive skills in addition to linguistic and social skills by (Pinter 2006).” This research was supported and expanded upon by the present study. The present research expands on this by providing evidence in support of innovative classroom design and opinion gap tasks for young learners to support negotiation of tasks and build the skills laid out by Pinter (2006).
The present study found high levels of English interaction in opinion gap tasks, but also high levels of vocabulary acquisition. This phenomenon is recorded in research by Mayo & Ibarrola (2015) who found that turns in the L1 did serve the metacognitive function to organize information, check goals and check for comprehension. This supports the research from Pinter (2006) that off-task talk and L1 turns during a task serve an important metacognitive role and contribute to overall collaboration. This study took these findings into consideration by looking at data even if there were high numbers of off task turns. Innovative classroom research also supports the use of flexible seating (Tobia et al. 2022), privacy of workstations (Zifferblatt 1972), and simple aesthetic design that includes natural lighting (Barrett et al. 2015) to lead to better behavior, focus, and interaction of young learners.

This study provides promising results for Spanish courses with young learners. Building on the empirical findings from Mayo & Ibarrola (2015), Pinter (2006), and Oliver et al. (2017), this study found that the Montessori classroom type and opinion gap tasks further promote learning, interaction, and affective factors.

Summary

This chapter explored quantitative and qualitative results on interaction, vocabulary acquisition, and affective factors based on classroom type and task type. Overall, the Montessori classroom as the most conducive classroom type for a TBLT course for young novice level learners of Spanish. Statistical data on interaction showed that in the Montessori classroom, learners used the highest levels of Spanish vocabulary, consistent use of English across task types, and less off task talk. There were no significant findings based on vocabulary and
classroom type. The Montessori classroom had more positive effects on anxiety and motivation in comparison to the traditional classroom. Classroom type nor task type seemed to have significant effects on attitude.

While learners used more English equivalents to target vocabulary and had more off task turns in opinion gap tasks, there was a slightly higher usage of Spanish vocabulary, more total turns, and a faster rate of learning based on vocabulary data. Opinion gap tasks also had the most positive effects on anxiety and motivation. Attitude wasn’t significantly affected by task type. These findings were further supported by TRJ’s to consider outside effects on affective factors.

This chapter also considered conceptual connections based on the data from the present study along with research in TBLT, Montessori, and education. Overall, the results from this study support educational research that provides underpinnings for TBLT (Dewey 1913, 1938, Maehr, 1984) that learning is enhanced when learners feel a sense of control and autonomy over their work. Both the Montessori classroom design and opinion gap tasks proved particularly conducive for supporting learner flexibility. This research also expanded on educational research (Dewey 1913, 1938, Maehr, 1984), TBLT research (Prabhu, 1987; Ellis, 2003), and research on innovative classroom design (Lillard, 2007) stating that learners succeed when they are interested in the work that they are doing. The Montessori classroom consisted of research-based aspects of innovative classroom design including aesthetic quality, seating position, and furniture arrangement which have been shown to lead to better behavior, positive affective results, interaction, and academic achievement (Sommer and Olsen 1980, Horowitz and Otto 1973, Barrett et al. 2015, Kumar et al. 2008, Cheryan et al. 2014). Affective data showed more
positive results for opinion gap tasks and support from teacher reflection journals suggested that
the flexibility of these tasks allowed learners to seek out their own interests within the tasks.

The Montessori classroom provided a positive context for the learner to occupy the
central role in the classroom with agency to determine use of linguistic forms, course content,
and evaluation of task outcomes (Benson, 2001; Breen and Candlin, 1980; Nunan, 1996;
Shohamy, 2001) and for the teacher to be the learners most privileged interlocutor (Van
Avermaet et al. 2006) based on TBLT research. This study found that the Montessori classroom
design facilitated the most productive levels of collaboration, a central aspect of TBLT (Long

This research study expanded and contributed to task research with young learners
furthering the research by Oliver et al. (2017) and providing evidence that innovative classroom
design is effective for young learners as it positively affected off task talk and affective
factors. Finally, this study expanded research by Pinter (2006) and Mayo & Ibarrola (2015) on
the role of English usage within tasks. Particularly with young novice level learners, this study
showed that flexible English interaction in opinion gap tasks can still be highly beneficial for
language acquisition of young learners.

Qualitative data from TRJ entries provided further explanation for other affective factors
from outside of the classroom that often aren’t considered since much of TBLT research,
particularly with young learners, has been done in laboratory settings (Mackey & Ross-Feldman
2011). This study provides a basis for approaching classroom language instruction in innovative classroom designs.
Chapter 6: Conclusion

Summary of Findings

Problem

While extensive research has been done in SLA, specifically in TBLT, very little has considered the physical classroom (Weiss et al. 2015), particularly for young learners. The potential for innovative classroom settings to promote positive effects on affective factors, interaction, and learning is supported by research in both education and applied linguistics (Schmidt, 1990; Svalberg, 2012, Richards & Rogers 2014). It has been found that innovative classrooms can lead to higher levels of cognitive engagement, student centered learning, and overall positive effects on affective factors (Schmidt 1990; Svalberg 2012, Richards & Rogers 2014). This study fills an important gap in research by providing a concrete example of an innovative classroom type based on the Montessori methodology, which has significant alignment with TBLT methodology.

Another gap in research is found in the use of TBLT with young learners, particularly in the foreign language classroom. A few studies have found that younger learners are generally less successful in the TBLT classroom when compared to older learners (Butle & Zeng 2014, Oliver et al. 2017). Nevertheless, research on learner motivation has found that young learners are more successful in the SLA classroom and have higher levels of motivation when they have higher levels of autonomy in the classroom (Carreira et al. 2013).
Finally, according to Gass et al. (2005) much of task research has been conducted in laboratory settings which doesn’t take into consideration the complexities and variables of a classroom context. The present study was done in an authentic classroom setting, particularly an inner-city public Montessori elementary charter school. This study addressed other factors that affected learner anxiety from outside of the classroom based on future research suggestions from Mackey & Ross-Feldman (2011) through daily teacher reflection journals which were collected in order to support quantitative data.

**Methods**

This study used a quasi-experimental approach situating TBLT within an innovative classroom design in order to explore its effects on affective factors, interaction, and vocabulary development. Each factor was explored within both a traditional and a Montessori classroom. Results were also compared between opinion gap and information gap tasks types. All learners participated in all treatments and in all assessments, but in different orders.

This study used pre and post-testing to analyze vocabulary acquisition, transcribed recordings of pair work during tasks coded for turns, and use of target vocabulary. Statistical analyses were run on interaction and vocabulary data. Affective data was collected via uptake sheets filled out by learners at the end of each class and coded for frequencies. Quantitative data was supported by qualitative data from daily teacher reflection journals.
Results

The results of this study showed that the Montessori classroom design provided the most successful context for a TBLT course in terms of affective factors, interaction, and vocabulary acquisition.

There was more consistency overall in the Montessori classroom than the traditional classroom. Further, in the Montessori setting, learners used more vocabulary in Spanish across task types and the Montessori classroom setting had positive effects on all affective factors. Classroom type had no significant effect on vocabulary acquisition.

Results showed that opinion gap tasks were the most successful overall, indicating that they are particularly beneficial with young learners. In opinion gap tasks, there were higher rates of English usage, but also higher rates of vocabulary acquisition. Anxiety levels were lower and motivation higher in opinion gap tasks. Based on support from TRJ’s, data indicated that opinion gap tasks afforded learners the highest levels of flexibility and autonomy. This positively affected affective factors and vocabulary acquisition. English usage was significantly higher in opinion gap tasks and lower in information gap tasks, adding to minimal research that flexibility of target language use is beneficial for young novice level learners (Mayo & Ibarrola 2015, Pinter 2006).

This study provides an extensive look at pair interaction and individual vocabulary acquisition, anxiety, motivation, and attitude through both quantitative and qualitative data in a classroom setting. An analysis of affective factors builds on and integrates research within
TBLT, innovative classroom design, and interaction between young learners. Qualitative data from teacher reflection journals provides a further explanation and support of data on interaction, vocabulary acquisition, and affective factors.

No research has been done integrating TBLT with the Montessori classroom design, nor considering the general effects of classroom design on motivation, anxiety, or vocabulary within TBLT in elementary foreign language classes. This study fills an important research gap by combining classroom design, a growing conversation within SLA, with TBLT. The use of interaction, specifically with vocabulary development as the target linguistic feature (Shintani, 2006), motivation, and attitudes as independent variables follows many studies and has proven an effective and important consideration in task studies. Supported by previous research, this study found that the results of different classroom designs have significant implications on interaction, motivation, and attitudes. This study supported the research findings by Gurzinsky-Weiss et al. (2015) that innovative classroom design will lead to more uptake in interaction and positive effects on motivation and attitudes. While their study focused on older learners, this study supported those results with young, novice level learners.

**Theoretical Implication**

The current study supports cognitive research suggesting that L2 learning happens implicitly when the focus is on meaning (Long, 2014; Ellis, 2003). Learners had very low levels of off-task talk and distractions, particularly in opinion gap tasks and in the Montessori classroom. The cognitive side of theoretical research into TBLT focuses on attention and implicit or incidental acquisition (Long, 2014; Ellis, 2003). This study found factors that can contribute
to success within focus on meaning as well as incidental acquisition. This study contributes to existing literature by proposing the potential of innovative classroom design, particularly the Montessori design, as well as opinion gap tasks to support a focus on meaning and higher levels of incidental acquisition. The Montessori classroom design had positive effects on interaction and affective factors. Opinion gap tasks had positive effects on interaction, affective factors, and vocabulary acquisition. These findings were supported by TRJ’s showing that in the Montessori classroom and in opinion gap tasks, learners had less distractions and higher levels of flexibility in task completion. This was supported by previous literature stating that L2 learning happens implicitly when the focus is on meaning (Long, 2014; Ellis, 2003).

At its core, research on interaction looks at the development and internalization of the L2 within the learner (Gass et al. 1998). Interactional modifications provide a foundation for measuring interaction. This study builds off of this theoretical basis by considering factors such as task type and classroom type in relation to L2 development.

This study builds on and contributes to previous research stating that productive interactional modifications are most commonly found in learner-to-learner conversations since comprehension promotes acquisition and conversational modifications lead to higher levels of comprehension (Mackey 2002). This study offers the potential for high levels of English usage on task interaction to still promote acquisition and allow space for conversational modifications, even if very little is happening in the target language. This was shown by the high levels of English interaction in opinion gap tasks, but also high levels of vocabulary acquisition and positive affective results.
In research on individual differences through the lens of the Cognition Hypothesis, Robinson (2011) predicts that the affective domain comes into play when tasks are performed in different conditions as the role of interpersonal relationships could affect motivation and anxiety differently, thus changing the outcome of the task. The present research introduces multiple conditions, classroom type and task type, to further test and elaborate on the research by Robinson (2011). The Montessori classroom design proved to be a highly successful condition to consider individual differences, specifically with young learners. While few studies have looked extensively at task type within innovative classroom research, this research supports the importance and potential for task type to affect task performance, motivation, and anxiety. This research showed high levels of success on interaction, vocabulary acquisition, and affective factors within opinion gap tasks across classroom types.

Based on the rationale for the Montessori classroom design (Lillard, 2007) as well as early educational research that provides theoretical underpinnings for TBLT (Dewey 1913, 1938, Maehr, 1984), learning is enhanced when learners feel a sense of control and autonomy over their work. Educational research (Dewey 1913, 1938, Maehr, 1984), TBLT research (Prabhu, 1987; Ellis, 2003), and research on Montessori classroom design (Lillard, 2007) state that learners succeed when they are interested in the work that they are doing. The present study integrated this previous literature into a single study and provides promising pedagogical implications for the combination of the TBLT with Montessori classroom design and opinion gap tasks for young novice level foreign language learners.
Pedagogical Implication

The pedagogical implications of this study may be of particular interest to educators and curriculum designers for young learners. The results of this study support educational and TBLT research (Dewey 1913, 1938, Maehr, 1984, Prabhu, 1987, Ellis, 2003) in favor of innovative classroom types.

This study has significant pedagogical implications for young learners in the foreign language classroom. As minimal research has explored innovative classroom types, this study contributes positive findings supporting Montessori classroom type with TBLT methodology in a Spanish as a foreign language class for young novice level learners. The Montessori classroom had significantly more positive effects on affective factors than the traditional classroom. There was more on-task talk and interaction in general. Based on vocabulary test data, students acquired more target vocabulary in the Montessori classroom than in the traditional classroom. Qualitative data from teacher reflection journals showed that learners were generally less distracted, and overall classroom morale was highest in the Montessori classroom.

TRJ’s showed that the Montessori classroom was particularly effective due to the seating arrangement. There was no interaction between tables in the Montessori classroom, likely because tables were spread out around the room and separated by low shelving. Rather than sitting at front facing desks, the tables provided a workspace for learners to interact and collaborate. The lack of front of the classroom required the teacher to offer instructions to each group individually. While the teacher still acted as the moderator in the traditional classroom
following TBLT methodology, some general instructions and reminders were given from the front of the room since that is where all learners were facing. In the traditional classroom, learners were close to other groups and easily distracted by the conversations of other groups. These factors all contributed to learners reporting the lowest levels of anxiety and highest levels of motivation in the Montessori classroom. Therefore, the most important aspects of the Montessori classroom design for replication should be tables instead of desks, seating spread out across the classroom and separated by low shelving to create workspaces, and no clear front of the classroom.

A second pedagogical implication of this study is the positive effects of opinion gap tasks. Positive affective results were highest in opinion gap tasks across classroom types. The rate of learning was also faster in opinion gap tasks than in information gap tasks. In opinion gap tasks, learners demonstrated high levels of flexibility in their interpretation of the task. Not all learners followed the task instructions exactly, some pairs interpreted them in their own ways based on TRJ’s. Some learner pairs also used significant English in oral interactions. Nevertheless, vocabulary acquisition was highest, anxiety levels were the lowest and motivation was the highest. This shows that task flexibility is very important for young novice level foreign language learners. Previous research states (Pinter 2006, Mayo & Ibarrola 2015) that flexible English interaction in tasks can still be highly beneficial for language acquisition with young learners. Opinion gap tasks also led to the most positive results across all factors in the traditional classroom, meaning that simply integrating more flexible tasks even without an innovative classroom design, will likely have positive effects on interaction, vocabulary acquisition, and affective factors for young novice level learners.
A final pedagogical implication looks at the role of native language of young novice level learners in the foreign language classroom. While some past research has advocated for target language usage (LeLoup et al. 2013), the results of this study showed that allowing learners to navigate tasks using a flexible linguistic repertoire leads to positive affective implications and higher levels of target language acquisition. This has been supported by studies such as Oliver et al. (2017) who found that, with young learners, on and off task talk both presented the potential for language learning, even if not in the target language, as learners were leaning on and expanding their linguistic resources. In the present study, English usage was highest in both the Montessori classroom and in opinion gap tasks; yet in both, anxiety was lowest, motivation was highest, and attitudes were mostly positive. In addition, there were high levels of peer interaction and the highest levels of target vocabulary acquisition. With young novice level learners, teachers should, therefore, put more focus on promoting on-task-talk rather than target language usage. The results of this study show that while target language use is essential, novice level young learners benefit from flexible tasks that allow them to lean on their vast linguistic repertoire, especially when their level of L2 knowledge is low.

Limitations

This study filled an important research gap by conducting classroom rather than laboratory research with young novice level learners. Since the current study was limited to 12 participants, future research could expand this study to look at a larger dataset. This study also looked at a public charter school demographic. While this fills an important gap, it would be helpful to consider other demographics as well.
The fourth vocabulary set on numbers showed potential for previous exposure as supported by the slightly higher pretest scores for this vocabulary set. During the post test, some learners were singing the numbers song and others wrote out all the numbers they could remember sequentially, which they used to fill in the blanks on the test. A study that looks at different language targets in opinion gap tasks might have varied findings on this measure.

It is also important to note that the affective data is not necessarily related to the findings of the statistical findings of the present study but to extra classroom factors. This is a reality of authentic classroom research and calls for further reflection on how to best consider affective factors among young learners.

**Future Research**

The current study shows that a TBLT methodology in a Montessori classroom design for young novice level learners could yield promising results, particularly for foreign language instruction. The results of this study support the potential exploration of other innovative classroom designs for foreign language TBLT courses. Learners of various ages and levels could also be considered.

This study yielded positive results for opinion gap tasks for young novice level learners across classroom types. A further exploration of opinion gap tasks in varied contexts, with varied learners, could yield promising results and pedagogical implications to support TBLT and SLA research with young learners.
Contributions

This research study fills an important gap by integrating TBLT with the Montessori classroom design and considering the general effects of innovative classroom design on affective factors, vocabulary acquisition, and interaction in the foreign language classroom with young novice level learners. This study contributes to a growing conversation within SLA by combining innovative classroom design with TBLT. The use of interaction, specifically with vocabulary development as the target linguistic feature (Shintani, 2006), and motivation and attitudes as independent variables, follows many studies and has proven an effective and important consideration in task studies.

This study expanded and situated innovative classroom research within the foreign language classroom for young learners. Previous research stated that in university level language courses, innovative classrooms led to more learner interaction and motivation (Weiss et al 2015). The present study not only found positive student perceptions of the innovative classroom type, but also expanded this by showing positive results on vocabulary acquisition, interaction, motivation, anxiety, and attitudes. Separate research studies have looked at different aspects of innovative classroom types with young learners in various subjects (Sommer and Olsen 1980, Horowitz and Otto 1973, Barrett et al. 2015, Kumar et al. 2008, Cheryan et al. 2014) This study focused specifically on the language classroom and combined multiple of the research-based aspects of innovative classroom design within the use of the Montessori classroom design.
The results of this study have significant implications on cognitive research and implicit learning through focus on meaning (Long, 2014; Ellis, 2003) by showing positive overall results of opinion gap tasks across classroom types, but particularly high motivation, low anxiety, and positive interaction in the Montessori classroom type. It contributes to research on interactional modifications by showing that high levels of English can play an important positive role in vocabulary acquisition as well as affective factors for young novice level learners in the foreign language classroom. This study also offers a unique integration of educational, TBLT, Montessori, and interaction research with positive results and practical pedagogical implications.

This study offers practical implications for teachers in light of foreign language instruction with young novice level learners using a TBLT methodology. Aspects of the Montessori classroom such as seating design and no clear front of the classroom can be easily implemented to provide positive results based on the present research. Opinion gap tasks can be used with young novice level learners to provide more flexibility, which based on this research, will lead to higher levels of motivation and lower levels of anxiety as well as more interaction and vocabulary acquisition.

The present research was done in an authentic classroom setting in a public charter school. Learners were all minorities who had no previous foreign language instruction. TRJ’s showed various challenges and outside factors that affected learning. This research is highly transferable to authentic settings and fills an important gap of classroom-based foreign language research in public education.
References


http://www.jstor.org/stable/43650036


A. Walqui, "Contextual Factors in Second Language Acquisition"


# Appendix A: Uptake sheet

<table>
<thead>
<tr>
<th>Time</th>
<th>Anxiety level</th>
<th>Motivation</th>
<th>Attitude</th>
<th>Vocabulary Words Learned</th>
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<tr>
<td>Pre-task</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td></td>
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<td>🍃✨✨unciation</td>
<td><img src="image" alt="emojis" /></td>
</tr>
<tr>
<td>Post-task</td>
<td></td>
<td><img src="image" alt="thermometer" /></td>
<td>🍃✨✨unciation</td>
<td><img src="image" alt="emojis" /></td>
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## Appendix B: Vocabulary sets

### Vocabulary set #1

<table>
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<tr>
<th>Bolsas</th>
<th>Bebe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vieja</td>
<td>Joven</td>
</tr>
<tr>
<td>Gordo</td>
<td>Dicho</td>
</tr>
<tr>
<td>Feliz</td>
<td>Triste</td>
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</table>

### Vocabulary set #2

<table>
<thead>
<tr>
<th>Morena</th>
<th>Rubio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comic</td>
<td>Sero</td>
</tr>
<tr>
<td>Chica</td>
<td>Chico</td>
</tr>
<tr>
<td>Guapo</td>
<td>Bonita</td>
</tr>
</tbody>
</table>

### Vocabulary set #3

<table>
<thead>
<tr>
<th>Casa</th>
<th>Huevo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arroz</td>
<td>Ensalada</td>
</tr>
<tr>
<td>Pasta</td>
<td>Papas fritas</td>
</tr>
<tr>
<td>Pescado</td>
<td>Pan</td>
</tr>
<tr>
<td>Pelle</td>
<td>Queso</td>
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</table>

### Vocabulary set #4

<table>
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<th>Los Numeros</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6 7 8 9 10</td>
</tr>
<tr>
<td>11 12 13 14 15</td>
</tr>
<tr>
<td>diez</td>
</tr>
<tr>
<td>diecisiete</td>
</tr>
<tr>
<td>dieciocho</td>
</tr>
<tr>
<td>diecinueve</td>
</tr>
<tr>
<td>veinte</td>
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</tbody>
</table>
Appendix C: Pre, Post, and Weekly Tests
Appendix C: IRB Approval

Institutional Review Board
Division of Research and Innovation
Office of Research Compliance
University of Memphis
315 Admin Bldg
Memphis, TN 38152-3370

April 14, 2022

**PI Name:** Hannah Pitner

**Advisor and/or Co-PI:** Rebecca Adams

**Submission Type:** Initial

**Title:** The Effects of Classroom Type on Interaction Processes, Vocabulary Development, and Motivation

**IRB ID:** # PRO-FY2022-386
April 19, 2022

PI Name: Hannah Pitner
Co-Investigators:
Advisor and/or Co-PI: Rebecca Adams
Submission Type: Initial
Title: The Effects of Classroom Type on Interaction Processes, Vocabulary Development, and Motivation IRB ID: #PRO-FY2022-386

Expedited Approval: April 14, 2022

The University of Memphis Institutional Review Board, FWA00006815, has reviewed your submission in accordance with all applicable statuses and regulations as well as ethical principles.

Approval of this project is given with the following obligations:

1. When the project is finished a completion submission is required
2. Any changes to the approved protocol requires board approval prior to implementation
3. When necessary, submit an incident/adverse events for board review
4. Human subjects training is required every 2 years and is to be kept current at citiprogram.org.

For additional questions or concerns please contact us at irb@memphis.edu or 901.6783.2705

Thank you,
James P. Whelan, Ph.D. Institutional Review Board Chair The University of Memphis.