

DIFFERENTIATED INSTRUCTION IN THE BILINGUAL CLASSROOM

A Record of Study

by

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## ABSTRACT

This qualitative action research study was conducted in a bilingual second grade classroom. It will present findings regarding implementation, understandings and evidence of differentiated instruction (DI). The findings of this study highlight how aligned instructional planning and defined pedagogical understandings foster differentiated instruction implementation in the classroom. Data showed the implementation of DI was structured into four blocks of instruction where students participated of a variety of instructional experiences. Data also showed pedagogical understandings influenced the implementation process. Evidence of varied levels of DI, strong instructional alignment, instruction aligned to brain research was also found.

## DEDICATION

This record of study is dedicated to my loving husband Amaury Rosario.

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### **Contributors**

This work was supervised by a dissertation committee consisting of Professor James Laub, Chair, Professor Patrick Slattery, Professor Harry Kelly and, Professor Hector Rivera.

All work for the dissertation was completed independently.

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## CHAPTER I

### INTRODUCTION

#### **Leadership Context and Purpose of the Action**

Students learn in different ways and require responsive teaching based on their learning styles and differences. In bilingual classrooms teachers are expected to advance learning and language development of struggling, on level and talented students that make up learning communities. In the last few decades, differentiated instruction (DI) has emerged as a suitable and promising framework to address the varied needs in current classrooms. This framework stems from the belief that any group of learners is diverse and teachers should adapt their instruction to meet their differences (Tomlinson, 2003). It takes full advantage of all abilities in the classroom and calls for the teacher to accommodate to students variance in readiness levels, interests and learning profiles. Instruction is focused on essential understandings and students are provided with different paths to make sense of and show their learning. Students are treated as individual thinkers and provided with opportunities for mastery of content that matches their personal learning styles and preferences, without ignoring their readiness level.

However, when we examine DI literature we can identify an expansive gap between theory and practice. Literature suggests teachers' implementation of DI is often limited and ineffective. Many teachers recognize the advantages of DI but still teaching to the middle (George, 2005; Suprayogi, Valcke and Godwin, 2017). Teachers understand the importance of focusing on learner variance but are unsure how to address it in their classrooms (Tobin and McInnes, 2008; Schuumm and Vaughn, 1992). Class size and composition, administrative work, limited preparation time, lack of resources and lack of skills and motivation to differentiate stand in the way of teachers and effective DI implementation. DI literature (Coreley, 2005; Nunley,

2006; Subbban, 2006; Tomlinson, Brighton, Hertberg, Moon, Brimijoin and Reynolds, 2003) point out the importance of differentiated instruction in contemporary classrooms and the emerging need to investigate its implementation process. “There is still a need for further investigation in the field of differentiated instruction in order to clarify all aspects and issues concerning its implementation in the everyday learning process” (Valiandes, 2015, p. 25).

### **The Context**

According to the U.S. Census Bureau (2008), the percentage of the school age children who spoke a language other than English at home in Texas was 34.5%. The Department of Education reported in 2003 that 43% of the teachers in the country has at least one English language learner (ELL) in their classrooms. In fall 2015, a greater percentage of ELLs were in lower elementary grades than of those in upper grade levels. For that year, 16.3 percent of kindergarteners were ELLs, compared to 8.2 percent of 6th-graders and 6.6 percent of 8th-graders. Among 12th-graders, only 3.9 percent of students were ELL students (NCES, 2018). Moreover, the National Center for Education Statistics (NCES) reported the percentage of public school students in the United States who were English language learners was higher in school year 2014–2015 than in 2004–05. They reported a 9.1 %, or an estimated 4.3 million students were identified as English language learners than in the school year 2004–05 when schools had 9.3 percent, or an estimated 4.5 million students. The state of Texas is one of the three states with higher populations of ELLs, 16.9% of public school students were identified as English language learners in the fall of 2015 (NCES, 2018).

Hockey Elementary School is a Title I school located on the northeast side of the city of Groenland. Hockey serves a varied range of learners from diverse backgrounds and currently has a general education program, ESL, Bilingual Spanish and Bilingual Vietnamese programs.

79% of the students are economically disadvantaged and 49.0 % are ELLs. For the academic year 2016-2017 Hockey met the Texas Education Agency's (TEA) accountability standards. 68% of students scored approaching grade level on all subjects of the State of Texas Academic Assessment for Readiness (STAAR); 70% scored approaching grade level in reading, 76% in math, and 58% and 49% scored approaching grade level in writing and science respectively (TEA, 2017).

During the last five years Hockey has gone through several changes. Changes in population, budget and faculty makeup have proven to be challenging for the campus. In spite of all these, Hickey has shown improvement in state testing. However, the improvement has been conservative in the areas of math and writing. Hockey's population has had a slight increase in students of diverse backgrounds and a decrease in students participating in both of the bilingual programs. The school has also been affected by teacher attrition. Some teachers have gotten other positions within the district and some others have left due to conflicts with past administrators. The last administrator was transferred to a pre-kindergarten center during the summer of 2017, leaving the position open. The district assigned a new principal to the campus and she has joined forces with the assistant principal to move instructional initiatives and school performance forward.

Groenland ISD has identified Hockey Elementary as a focus campus. A focus campus is a campus that has not met the accountability targets as required by TEA or that as determined by GISD is at risk of not meeting the standards in the near future. Hockey falls into the second category, and the district is making a proactive effort to prevent the campus to be formally identified as needing improvement. As a part of this plan teachers planning and instruction is constantly monitored and supported through planning meetings, general feedback and

professional development. Their effort targets the overall needs of teachers pre-kindergarten through fifth grade and does not provide for support systems based on teachers' individual needs.

## **The Problem**

**Relevant history of the problem.** The increment of ELLs and bilingual students in our classrooms is an important topic of discussion among professional learning communities across the country. Programs, strategies and best practices to meet the needs of diverse populations are broadly discussed and implemented in order to meet their varied needs. Most ELLs in Texas are U.S. born and educated. In the Spring 2010 more than 15% of ELLs in Texas in grades 3–12 were reported as having been in U.S. schools for less than three years (TEA, 2018). They are a diverse group of students that know English to varying levels when they enter American schools and have wide and varied educational and sociocultural backgrounds. In a time where education agencies use unilateral accountability measures as a key factor in determining student success, educators are faced with the challenge of addressing a wide range of cognitive and linguistic needs in one single classroom.

Although many teachers strive to address the varied needs in their classrooms, teachers who implement differentiation have a disconnected approach to differentiation. Smith and Humpert (2012) found the use of differentiation in classrooms was fragmented and limited to certain aspects of DI. Teachers most likely differentiated the amount of time and tasks students needed to complete and assigned peer work. Moreover, Kiley (2011) found teachers lacked specific knowledge about DI, but could grapple with the general concept of it and point out some methods of application. “They clearly understood that it was tailoring education to the individual student learning characteristics... It was also apparent that most of the differentiation in their practice was in materials and delivery” (Kiley, 2011, p. 69). In the same line, Whipple

(2012) found high school teachers had a general level of understanding and implementation of differentiated instruction and a variation between the six components of DI. Teachers seemed to have a lower understanding of process, interest and product effecting on the implementation of DI in these areas. While teachers across grade levels and subjects seem to have a general understanding of how DI works in diverse classrooms, their efforts to implement effective DI are deprived of a cohesive and structured framework. A fragmented and unstructured implementation of DI will ultimately affect diverse learners linguistic and academic learning and achievement.

**Significance.** In current classrooms teachers are expected to advance the learning of the wide range of learners that make up classroom communities. They have the responsibility to provide instruction that targets the varying readiness levels of learners and individual needs. Although, teachers have an understanding of the imperative of addressing the varied needs students bring to their classrooms, many are unsure of how exactly the process takes place in the elementary classroom. There is a disconnection between teachers' understanding of DI and their actual implementation (Whipple, 2012). Teachers tend to implement differentiation in a fragmented manner and limit it to certain aspects of DI (Smith & Humpert, 2012).

Teachers see effective differentiation as their greatest challenge (Tomlinson, 2004). Teachers find the task of supporting struggling learners performing below benchmark standards, to be especially challenging (Harris, 2012). Meeting learner differences can be overwhelming for teachers as these differences can be related to a large variety of student characteristics and a large variety of DI approaches as well (Suprayogi, Valcke and Godwin, 2017). This feeling of overwhelmedness originates from the idea of differentiation not been a feasible framework for classroom instruction (Smets, 2017; Schumm and Vaughn, 1991). "Implementing DI can be a

daunting task for teachers because it requires a new way of thinking about curriculum and instruction” (Tobin and Tippett, 2014, p. 423). Many teachers lack the knowledge and support to adapt their teaching style to the diversity of their classrooms and consider the adaptations an unachievable task (Smets, 2017).

As diversity in our classrooms increases, the need for educational approaches that target the diverse needs of students in our classrooms increases concurrently. Students require responsive teaching based on their learning styles and differences. In this time where stringent testing seems to dictate teacher and student success, DI has emerged as a promising approach for all students. DI stems from the belief that any group of learners is diverse and teachers should adapt their instruction to meet their differences (Tomlinson, 2001).

### **Research Questions**

How would a Bilingual elementary school teacher implement differentiated instruction in the classroom?

- How would a Bilingual elementary school teacher describe differentiated instruction in the classroom?
- What evidence demonstrates differentiated instruction practices in the classroom?

### **Personal Context**

#### **Researcher’s Role and Personal History**

The role of the researcher in this study was as an instrument of data collection and mediator. I was an insider, involved in a sustained and intensive experience along with the commonwealth of the school. “An insider’s familiarity with the community can provide facile and economic access and movement in the field as well as can provide multiple levels of insight about human behavior necessary for data collection, interpretation, and representation” (Chavez,

2008, p. 480). Insiders have a better understanding of the cognitive, emotional, or psychological areas of participants and also have deep knowledge of the historical and practical happenings of the field (Chavez, 2008). As an insider, I was the primary data gathering tool and research instrument (Anderson, Herr and Nilhen, 1984). I maintained objectivity throughout the course of the research by reporting my experiences with clarity and by reporting results using relevant theoretical meanings justifiable by current educational theories. I made sensitivity and subjectivity assets in the research process (Lincoln & Guba, 1985). I also collected data and mediated through my own descriptions and assumptions and previous qualifying experiences to conduct research.

I have been in the field of education for 21 years and working with ELLs for the last ten years. I am an English language learner myself, an experience that has made me understanding and empathetic towards my students. The journey to learn a second language and survive in a social environment that is not my own, has given me the strength, determination and resiliency needed to make my learners succeed. I have experience in teaching, coaching and professional development. In the course of my teaching career I have developed small research projects for a variety of courses in this and other graduate programs. For this project I will rely on my district's resources and support and on my ROS committee experience and expertise.

Through the years I have gained experience in differentiated instruction. I remember hearing about differentiation in the early 2000s when I was a high school teacher. The professional development session was geared to content area teachers but really sparked my interest on how to best meet the needs of my then Theater Arts students. I started by providing shorter scripts for struggling readers and differentiating content based on student interest. A decade later, I moved to the elementary level and differentiation was broadly discussed and



encouraged. I started developing my understanding and practice of differentiation in the area of Language Arts and Reading because these were areas I was passionate about.

I started by having guided reading lessons to address the different reading abilities in my class and being more intentional in the type of literacy stations I wanted my students to complete. Slowly, stations started to reflect the linguistic and content readiness of my students, and homework was dependent on students needs. I have learned some aspects from professional books, great conversations with colleagues, reflection and, trial and error. After ten years in elementary, my understanding on how to make content accessible and engaging for students has deepened, rising new questions in the quest for an equitable education for my bilingual learners.

### **Journey to the Problem**

In the Spring semester of 2018 as a part of my coursework I conducted a pilot study to explore elementary school teachers understanding on differentiated instruction and its implementation in the ESL/Bilingual classroom. Through the inductive analysis of semi structured interviews and lesson plan samples I found five major themes. These five themes were general understanding of differentiated instruction; awareness of the different needs in the classroom; differentiation ensures student success; fragmented differentiation and transposition of accommodations and differentiation.

Teachers participating in the pilot study although from a wide range of experience, had a general understanding of what means to differentiate instruction in a bilingual or ESL classroom. As a result, I began to reflect on my own understandings of differentiated instruction and on whether differentiation in my classroom was fragmented or a well thought and outright process that reflected the range of needs in my classroom. These findings really inspired me to look inwards rather than outwards with this action research project. The findings made me question

my knowledge and implementation of differentiated instruction as a fair, equitable and effective in addressing the instructional needs of my English language learners.

### **Significant Stakeholders**

There are three key educators in the context of Hockey Elementary. They are in charge of the implementation of instructional initiatives as well as teacher mentoring and coaching.

Kara Onken is Hockey Elementary's Principal. This is her second year as a principal, after serving three years as an assistant principal in another district. As the main instructional leader her primary responsibility is to develop and implement an effective instructional program that effectively meets the varied needs of Hockey students. She is also in charge of implementing and understanding the requirements and implications of the TEA accountability system and the supervision of teachers and other instructional personnel working in the school.

Michelle Prince is the Assistant Principal at Hockey. This is her first year at Hockey. Before becoming the assistant principal at Hockey, Ms. Prince was an assistant principal at Club Holland Elementary for two years. Her role is to support the principal in designing and implementing effective instructional programs appropriate to the needs of the students. She is also in charge of coaching teachers in best teaching practices, appraising staff and compliance of the accountability systems.

Katelyn Turner is the team lead of the instructional support team. Her role in school is to support both teachers and students. She provides coaching to new and experienced teachers on best teaching practices and monitors student progress through the tiers, as established by TEA. She is also in charge of supporting new district initiatives and programs in the campus.

### **Important Terms**

1. Differentiated instruction is instruction tailored to the needs of individual students.

2. Curriculum differentiation is the process of modifying the curriculum according to interest, readiness and learning profile.
3. Differentiated content is instructional content that has been altered to meet students specific needs.
4. Differentiated process is characterized by the selection of different avenues for students to make sense of content.
5. Differentiated product is characterized by the selection of different avenues for students to show understanding and application of content.
6. Bilingual student is any limited English speaking student participating of bilingual instruction in their native language.
7. English as a Second Language (ESL) student is any English limited speaking student receiving English language instruction and support in school.
8. Bilingual classroom is a classroom composed by English language learners receiving instruction in both their native language and English.

As diversity in our classrooms increases, the need for educational approaches that target the diverse needs of students in our classrooms is crucial. DI has emerged as a responsive teaching approach based on students learning styles and differences. DI is based on the assumption that students learn best when teachers accommodate to their needs (Tomlinson, 2003) and are active collaborators of a reciprocal learning process (Subban, 2006). It stems from the belief that any group of learners is diverse and teachers should adapt their instruction to meet their differences (Tomlinson, 2001). Current classrooms are composed of learners from different backgrounds, students with learning disabilities, advanced learners, and students with varied levels of English proficiency. Educational trends around the world reflect changes in student

population from three decades ago (Subban, 2006), establishing diverse classrooms as the standard and as the force pressing for changes in traditional instructional practices.

## CHAPTER II

### REVIEW OF SUPPORTING LITERATURE

#### **Relevant Historical Background**

As early as the end of the 19th century student learning differences were part of the educational discourse. Washburne (1953) discussed the efforts of Preston Search in the schools of Colorado where instruction had been arranged in a way where all students could progress at their own pace in all subject areas. Failure of students was eliminated and teachers did not assign grades but reported on the number of units completed by the student (Keefe and Jenkins, 2000). Although teachers and students had success with individualized instruction, the instructional approach only took place for the longevity of Search's leadership in Colorado schools. "The tremendous amount of work Search inspired his teachers to do in order to make individual progress of pupils possible continued only as long as Search's dynamic personality aroused the necessary enthusiasm" (Washburne, 1953).

The work of Search influenced the development of self driven personalized bulletins of study by the San Francisco State Normal School in California. Self-instruction bulletins for each subject were developed and refined to enable students to learn at their natural pace individually without depending on the pace of other learners (Washburne and Marland, 1963). These early approaches to individualized instruction influenced other initiatives across the country (Washburne & Marland, 1963; Keefe and Jenkins, 2000). In Winnetka, Illinois schools under the leadership of Carleton Washburne started to focus on individualized instruction. Winnetka's teachers produced their own materials and real life application projects. They rescinded special classes for mentally and physically handicapped and used school and classroom to study and introduce government (Cremin, 1965).

A second approach to individualized instruction of the time was the Morrison plan. The plan was rooted in the concept of the nature of a unit. As defined by Morrison, a unit is "a comprehensive and significant aspect of the environment, of an organized science, of an art, or of conduct, which being learned results in an adaptation in personality" (Billet, 1932, p. 242). His definition expands a unit to include all five types into which Morrison classifies the subjects of the secondary school: the science type, the appreciation type, the practical-arts type, the language-arts type, and the pure-practice type (Billet, 1932). The cycle is composed of five teaching and learning steps. According to Morrison, this cycle is only applicable to science type subjects such as science and math, for other practical art subjects certain modifications are required. The plan allowed for learner variance through the five steps: exploration, presentation, assimilation, organization and recitation. Through these five steps teachers assessed student knowledge, decided what each individual needed, and provided essential understandings of a unit of study. Once the first two steps, exploration and representation, were accomplished students proceeded to study content through directed study, with fast learners taking on projects and reports. In the third step, assimilation, the class gathered and generated a discussion using the argument of the unit and the supporting facts. In fourth and fifth steps, organization and recitation, students who already mastered the unit presented to the teacher and the whole class (Billet, 1933).

A third popular approach at the time was the Dalton plan. This plan was developed by Helen Parkhurst using her experience as a Montessori teacher and the ideas of individualized instruction through bulletins from San Francisco State Normal School in California (Washburne & Marland, 1963). The Dalton plan was founded on three fundamental principles: freedom; cooperation, or the interaction of group life; and economy of forces or the budgeting of time.

Schools grouped students heterogeneously and used laboratories where pupils of all grades worked simultaneously on their several tasks either individually or in groups in a flexible daily schedule in what they called a house (Billet, 1932). The plan operated under the idea of participation in a democratic school community, where each individual brings value to the community by enacting responsibility over himself and the community as a whole. It placed great emphasis on the environment and social aspect of educational tasks, as these further mental and spiritual growth on the learner (Parkhurst, Bassett and Eades, 1922). The Winnetka method, the Morrison plan and the Dalton plan, and a variety of other individualized instruction methods were eventually implemented in many other schools across the country. However, most of the schools emulating the methods were implementing a fragmented version of the method (Billet, 1932).

Roy Billet (1932) investigated what American high schools were doing to address individual differences in students and what were the approaches that statistically were rendering the best results. He established student learning differences as a foundational premise in his work. “In this study the well-established fact that wide differences exist in individual abilities, interests, aims, and needs, is regarded as axiomatic” (Billet, 1932, p. 1). He went on to assert that a wide array of available research supported this claim. He pointed out contemporary research and also the changes in the high school student population of the time. Student make up was shifting from homogeneous classes to heterogeneous classes as a result of more accessible education initiatives.

The essential and obvious truth is that the secondary school population of 40 years, ago, fairly homogeneous in abilities, interests, aims, and needs, has been replaced with a present student body highly heterogeneous in

every respect, and that the change has crept upon the secondary schools so gradually as to take them almost unawares” (p. 3).

He analyzed 8,594 school principals responses to a one page survey and found homogeneous grouping was being used in 2,740 schools but only 721 claimed to have success with it. The report showed statistical evidence indicating teaching procedures in use in the majority of high schools did not provide for individual differences. Based on data analysis and educational theory of the time he proposed instruction to be tailored to individual differences through special classes, the Morrison plan, the Dalton plan, the Winnetka technique, unit assignments, variations in promotion, marking systems, and pupil schedule practices (Cleeton, 1934). He advocated for modification in traditional classroom procedures in order to meet the varied differences in high school classrooms at the time.

In 1918 William H. Kilpatrick published an article on the project method. His purpose was to develop through purposeful activities the values needed to develop a democratic personality (Duffy and Putt, 1969). He promoted interest, commitment and self directed responsibility through the use of problem centered learning. The approach would consist on selecting the content, selecting the project or problem to address the content, project performance by students, instruction based on understandings and skills needed and, the use of new learning to solve the problem (Duffy & Putt, 1969). Kilpatrick's project method differed from the Winnetka plan and other similar approaches in that he presented a more social and constructivist approach to learning. Educators began to think the individual work in Winnetka "divorced the mechanics of learning from motivating social experience" (Washburne & Maraland, 1963, p 140). In the midst of new social constructivist approaches schools went back to their former programs, widely ignoring the varying readiness levels of their students.



Educational trends and theory in our country have gone through significant changes in the last century. Educational theories have evolutionized from a teacher centered approach to a more student centered approach. We are in constant search of how to address the needs of our learners taking into account educational theory and new research developments. History however, has proven that due to the complex and bureaucratic nature of school environments effective and current educational practices are not always easily available to educators and students. The complexity of the organization of the school systems make it almost impossible for educators to have access to current best teaching practices and many frustrated educators have no other resource than to go back to teacher centered practices where students' individual needs are often ignored.

### **Alignment with Action Research**

Practical action research seeks to study local practices involving individual or team based inquiry (Creswell, 2012). Action research involves a small scale research project focusing on a specific issue. Its major scope is to improve teacher development and student learning by implementing a plan of action and reflection. Action research can be undertaken by an individual educator or a group of educators interested in improving educational practices or issues. "In this spirit educators can test their own theories and explanations about learning, examine the effects of their practices on students and, explore the impact of approaches on parents, colleagues, and administrators within their schools" (Creswell, 2012, p 580).

Action research researchers study the effect of their own actions on their educational environments and realities. They seek to generate knowledge from ongoing problem solving by engaging in a cycle of action to address a particular issue. This cycle of action is ongoing, flexible and the duration can vary depending on the complexity of the issue, institutional politics,

or the time allotted for investigation. The researcher engages in this process of problem solving by planning a solution, acting upon it, observing effects, and reflecting on the process and observations (Anderson, Herr and Nihlen, 2007). The researcher is constantly reflecting on the meaning of the environment, participants, data and all the other variables that play a role in the issue been studied. The main goal of the researcher is to better understand educational issues, and practice improvement through problem solving and reflection.

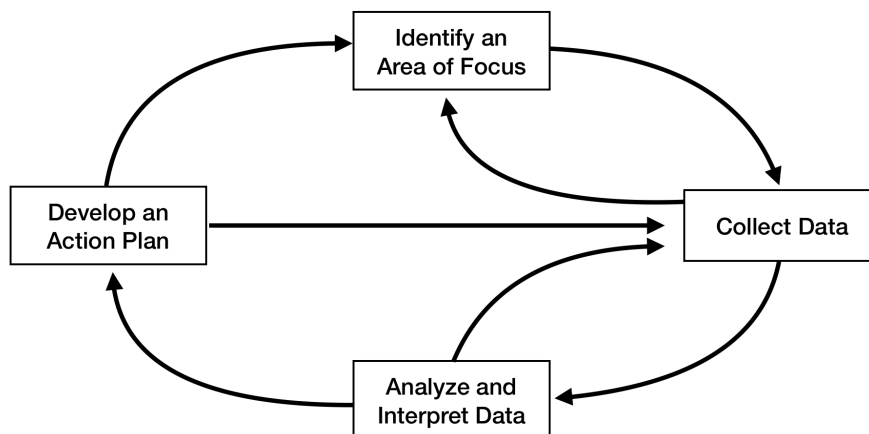
Action research places a focus on the how to, assuming that educators have certain autonomy that allows them to determine the nature of the problem to be investigated. Action research also focuses on the teacher's commitment to professional development and school improvement and in the idea of a reflective teacher (Mills, 2011). Mills (2011) identified several action research principles that provide perspective to educators looking to engage in educational action research. These principles are related to the role of the teacher as a learner, effective practitioner, and individual. In the first principle, the teacher has decision making authority. In the second principle, any teacher engaged in action research is committed to individual and school improvement. In the third principle, the teacher is a reflective practitioner. The fourth principle, is the use of a systematic approach. The fifth principle is the application of the research process (area of focus, data collection, data analysis and action plans). These five principles seek to regularize action research in educational environments and bridge philosophical, historical, social and regional variations to common goals.

Educational trends and policies are in constant motion, action research provides opportunities for reflective practice and extends and deepens the understandings of educational issues. It encourages changes in educational practices and fosters a democratic approach to education in a single classroom, several classrooms or a school. It empowers educators through

individual and group reflection and collaboration creating a cause and effect phenomena that ultimately impacts student achievement. It fulfills an important role for classroom teachers interested in improving practices, changing school policies and promoting student success.

### **Conceptual Framework**

I approached this issue applying Mills' (2011) Dialectic Action Research Spiral (DARS). DARS is an ongoing, flexible process that moves back and forth between stages and allows for reflection and adjustments to the process of action research. In DARS the teacher researcher identifies an issue or area of focus, collects data from multiple sources, analyze and interpret data and, develops a plan. "This process emphasizes practical action research centered around studying a local problem, engaging inquiry by an individual teacher (teacher-as-a-researcher) or a team, and focusing on teacher development (Creswell, 2011, p. 581). Figure 1 shows the research spiral and how the spirals allow the researcher to go backwards and forwards between stages, according to the needs and questions that arise during the action research cycle. For example, research can start from the data collection stage by identifying areas of focus through the study of data or vice versa, by identifying an area of focus and collecting data. Interpretation in this process occurs by extending the analysis, formulation of questions, connecting findings to personal experiences, seeking advice from critical friends and situating findings in the context of literature and theory. In the last stage, the researcher completes an action plan including a summary of the findings, recommended actions, and the identification of individuals responsible for the actions, and lastly those that need to be informed or consulted (Creswell, 2011).



*Figure 1.* Dialectic action research spiral

DARS is a rigorous and flexible framework that would allow me to engage in action research that will strengthen and improve my practice. The flexibility of DARS makes it a suitable approach for a classroom teacher submerged in a dynamic and demanding instructional environment. The framework allows for deep reflection and application of an action plan that is expected to improve and move forward educational efforts in complex environments.

### **Most Significant Research and Practice Studies**

#### **Differentiated Instruction**

As diversity in our classrooms increases, the need for educational approaches that target the diverse needs of students in our classrooms increases concurrently. Students require responsive teaching based on their learning styles and differences. DI is based on the assumption that students learn best when teachers accommodate to their needs Tomlinson (2003) and are active collaborators of a reciprocal learning process (Subban, 2006). DI takes into account different personal and cognitive aspects of the learner such as background, language, readiness level, and learning style and links them to Vygotsky’s sociocultural and zone of proximal development (ZPD) theories. In the sociocultural learning theory the learner must be studied

within the particular social and cultural context (Subban, 2006). Within the sociocultural context of the classroom, the learner attains a certain level of development while socially interacting with other learners (Vygotsky, 1978), this level of development is known as the ZPD. The ZPD refers to the cognitive developmental stage where the learner requires adult support to successfully complete a task. In this particular stage, new learning takes place (Tomlinson, et al., 2003) and children learn the most when supported by a more knowledgeable other. DI targets the varied needs of students in a single classroom by making learning social and challenging students to constantly develop and grow in their individual ZPD.

DI stems from the belief that any group of learners is diverse and teachers should adapt their instruction to meet their differences (Tomlinson, 2001). “The differentiated instruction (DI) teaching approach is expected to consider differences between students, acknowledge their strengths and accommodate their limitations (Suprayogi, Valcke and Godwin, 2017, p. 291). It takes full advantage of all abilities in the classroom and calls for the teacher to accommodate to students variance in readiness levels, interests and learning profiles (Subban, 2006). The teacher focuses instruction on essential understandings providing students different paths to make sense of and show their learning. “In DI all learners focus on the same essential understandings, but are provided with multiple access routes to make sense and demonstrate these understandings (Tobin and McInnes, 2008, p. 30). Students are treated as individual thinkers and provided with opportunities for mastery of content that matches their personal learning styles and preferences, without ignoring their readiness level.

The DI framework has become a critical instructional approach in regular classrooms where learning has become student oriented and collaborative and where all students are successfully and meaningfully challenged (George, 2005; Subban, 2006). DI incorporates four

main characteristics in the classroom: (1) the teacher serves to students learning differences, (2) formative assessments are key to devise the next learning phase (3) the teacher modifies content, process and products according to students needs and, (4) teacher and students collaborate in the learning process. (Randi & Corno, 2005; Subban, 2006; Tomlinson, 1999). It is “an approach that enables teachers to plan strategically to meet the needs of every student” (Smit and Humpert, 2012, p. 1152). DI moves away from curriculum coverage and directs the teacher to focus instructional effort into an individual student needs approach.

**Teacher serves to students learning differences.** Students in any classroom will be at different entry points in regards to the curriculum and content. Differences among students can be related to learners’ interest, learning styles, developmental level, learning speed, abilities, cultural background, language level, attitudes, regulation approaches (Suprayogi et al., 2017) and, many other personal experiences learners bring to the classroom. There are three important areas in which students differ from one another and call for modifications in instruction: readiness, interest, and learning profile (Tomlinson, 2003; Subban, 2006). Readiness “refers to a point of required mastery where a child cannot successfully function alone, but can succeed with scaffolding or support.” (Tomlinson, Brighton, Hertberg, Callahan, Moon, Brighthon, Conover and Reynolds, 2003, p. 126). It is the current fitness of the student to access and participate of instruction marginally above his cognitive level. Instruction that is easily accessed and right on the learner’s proficiency level won’t allow the learner make significant learning gains. Instruction that is out of reach will lead the student to frustration and learning will be compromised. Conversely, instruction occurring slightly above the learner’s proficiency level, at the ZPD will benefit cognitive development (Subban, 2006). “Each of us learns best when a task is a little too difficult for our current level of knowledge, understanding, and skill and there is a

support system to help us bridge the gap” (Tomlinson, 2003, p 9). It is the teacher’s job to advance the learner to the ZPD, through curriculum and instructional approaches that are slightly above his capacity in order for the student to achieve a level of independence. Further, students working at their ZPD are more inclined to focus and get interested on learning even when facing difficulty (Bransford, Brown and Cocking, 2000).

Interest is a motivational factor and refers to the level of engagement a student shows in a determined instructional task. “Interest refers to the feelings and emotions that lead an individual to focus on something because that topic or pursuit is important to the individual” (Tobin and Tippett, 2013, p. 425). Individual interests are conductors of motivation and motivation highly impacts learning and understanding (Tobin & Tippett, 2013). Instructional tasks that are tailored to individual interests create an emotional and cognitive bridge to the learning task that will ultimately translate into increased learning and achievement. This cognitive emotional bridge is based on the task practical connection to real life, resulting in greater motivation. “Because of the interconnectedness of all knowledge, there are many ways to link what a learner finds intriguing and what he or she is supposed to learn” (Tomlinson, 2003, p.10). Student interests are a powerful motivator (Subban, 2006) and an important aspect on academic development (Tomlinson, et al., 2003). “Teachers should find ways to engage students, by tapping into what interests students and by involving students in the daily running of the classroom (Subban, 2006, p. 941).

Learner profile alludes to the learner’s preferred mode of learning (Tomlinson, et al., 2003) or learning style and it is related to learning efficiency (Tomlinson, 2003). Learning style is "a specific and preferential matrix for processing the learning tasks, in order to adapt the strategies to the required environmental conditions." Neacsu (as cited in Norel and Laurentiub,

2011, p. 81). It involves the use of consistent strategies regardless of the type of the learning task presented to the learners. Gardner's Multiple Intelligences Theory explains how these preferences refer not only to preferred learning styles but also to behavioral and working styles and to natural strengths as well. The eight intelligence types (linguistic intelligence, logical-mathematical intelligence, spatial-visual intelligence, musical intelligence, bodily-kinesthetic intelligence, naturalistic intelligence, interpersonal intelligence and intrapersonal intelligence) indicate not only the learner's capabilities, but also their preference to learn and develop both strengths and weaknesses. Each individual has the ability to develop these intelligences if he is encouraged and if he benefits of special adequate training (Gardner, 2006).

Learner profiles are influenced by gender, culture, learning style, intelligence preference or a combination of these factors. Learners in primary, middle or high school tend to show greater achievement when instruction matches their learning preference. They also show higher achievement in final assessments that are not within their learning preference when the instructional process has addressed their learning preference (Tomlinson, et al., 2003). DI takes into consideration learning profiles by allowing the teacher to plan content, process and products that support individual learning styles and preferences. In the differentiated classroom opportunities for small group work, individual work or whole group work are provided "Teachers who are perceptive to the learning needs of their students help learners to make productive choices about the ways in which they will learn best" (Subban, 2006, p. 941). "To differentiate instruction is to recognize students' varying background knowledge, readiness, language, and preferences in learning and interests, and then to act on that knowledge responsively in planning content dimensions, process dimensions, and product dimensions" (Dixon et al., 2014, p. 14)



**Assessments are key.** Formative assessments are key in differentiated classroom instruction. They determine what and how the teacher will instruct students. At the beginning of each unit the teacher determines where students are at in relation to unit content and develops instructional targets and activities based on the assessment results, readiness level, interests and on learning profiles. Throughout the unit the teacher is continuously assessing students knowledge and understandings in order to adapt instruction. Assessments allow the teacher to identify the ZPD and to identify instructional targets. “After establishing specific instructional targets, teachers can develop instructional strategies and environmental supports that will enable students to work together and to achieve specific targets within curriculum standards (McTighe and Brown, 2005). These instructional targets are well known by students and are broken down into intermediate learning targets. Students are given constant feedback on whether they have achieved or still working on achieving those targets (Smets, 2017).

The assessment process in DI happens in different ways and using multiple formats. The goal is to ensure that students have a way to show what they have accomplished during a sequence of study (Tomlinson & Cunningham Eidson, 2003). In this process, teachers need to be highly adaptable to students’ needs and innovative enough to come up with new solutions when strategies are not meeting the needs of the students. “They can ascertain when students are not learning, know where to go next, can adapt resources and strategies to assist students meet worthwhile learning intentions, and can re create or alter the classroom climate to attain these learning goals” (Hattie, 2008, p. 247).

**Modification of Content, Process and Product.** Content, process and product are the three curricular elements teacher can differentiate to meet the varied needs of the classroom. “In other words teachers are expected to make explicit choices as to the nature of the learning

content, process and product for each learner from pre- kindergarten to college (Suprayoti et al., 201, p. 292). Content refers to what the student needs to know, understand and apply as a result of a unit study. Process is how the content takes place. Content can take place with a wide range of activities that allow students to make sense of it. “Effective activities are focused squarely on the key knowledge, understanding and skills central to a segment of study and call on students to grapple with the content so they come to “own” it- so they make sense of it for themselves” (Tomlinson & Cunningham Eidson, 2003, p. 10). Products are the evidence of the learning. They provide evidence of what a student has learned, understood and be able to do over an extended period of learning. Product calls on students to bring together knowledge, understanding and skill; apply it and extend it as a demonstration of their power with the content” (Tomlinson & Cuningham Eidson, 2003, p. 11)

**Teacher and students collaborate in the learning process.** The teacher involves the students in understanding the nature of the classroom and in understanding that the classroom has to work for every learner. Responsibility is shared and the goal is to help everyone to reach their academic goals. Students take part in establishing classroom rules, transitions, distributing materials, keeping record of their goals and progress and, make major contributions to classroom efficiency and to a sense of community (Tomlinson & Cunningham Eidson, 2003).

DI is a promising instructional framework offering educators a student oriented approach where all students are successfully challenged. The four main characteristics of DI work together as a catalyst for an equitable teaching approach. It provides teacher the opportunity to thrive professionally and to participate in an intellectual exercise of decision making and teaching. It also provides the student with ample opportunities to thrive intellectually and

socially by providing diverse paths to success. It moves away from the prevalent notion of on grade level curriculum coverage to a focus of student individual success.

Throughout the last decade, multiple studies have shown the efficacy of DI implementation in the elementary and secondary levels. Valiandes and Neophytou (2017) conducted a study to investigate the impact of differentiated instruction professional development on teacher's professional development and student achievement. Although the main objective of their study was to examine the characteristics of efficient differentiation professional development, they also examined the impact of professional development on student learning and achievement. The study took place in the district of Nicosia, Cyprus. The 14 participants were teachers teaching Greek language in fourth grade classes. They used observation protocols and interviews before and after participating in professional development with the purpose of gauging participants initial perception and attitudes about differentiation. They used a general literacy test to measure the impact on student achievement. Their major findings were changes in the instructional profiles of participants, changes in teacher attitudes toward differentiation and changes in the quality of instruction on students' achievement. They used a multilevel structural equation model to illustrate the effect of the quality of instruction had on student achievement. The effect of the change on student achievement was 0.18. The initial performance of students on the literacy test was 0.25 and at the end of the study was a satisfactory 0.61. "...a qualitative professional development program can help toward the modification and improvement of teachers' instruction methods and bring similar improvement in students' achievement level" (p. 131).

Reis, McCoach, Little, Muller and Kaniskan (2011) also investigated the effects of a reading and enrichment program using a differentiated approach to reading instruction on

elementary students' reading fluency and comprehension in five elementary schools. The study focused on analyzing whether eliminating five hours of whole group instruction per week, produced higher, similar or lower reading scores for participating students when compared to not participating students. In these schools teachers replaced whole and small group instruction with differentiated instruction without any negative impact on achievement scores. The treatment and the control conditions were assigned to 63 educators and 1,192 elementary school students in five different elementary schools. The schools represented a wide variety of students including students of diverse backgrounds and achievement levels, economically and not economically disadvantaged students and, different geographic regions. The study demonstrated that differentiated instruction and enrichment teaching methods resulted in higher reading fluency and comprehension in some students. Two of the schools' multilevel models supported significant gains in reading fluency and comprehension (Cohen's  $d$  effect sizes of .33 and .10). The other three schools showed no achievement differences or negative scores in reading fluency and comprehension.

In the same line, Firmender, Reis and Sweeny (2013) examined reading fluency and comprehension scores of 1,149 students in five elementary schools. Reading comprehension was measured using the Iowa Test of Basic Skills (ITBS) reading comprehension subtest (Form A). The ITBS reading subtest measures how students make meaning of what they read. The subtest consists of reading passages of different genres and comprehension is assessed by multiple-choice questions. The fluency subtest assesses the speed, accuracy, and efficiency with which a student reads a particular text. Students read from three increasingly difficult, passages for three separate one minute reading trials. The number of words read correctly for each passage was recorded and a mean, and a score is calculated for each student. "Results revealed a range in

reading comprehension across all schools of 9.2 grade levels in Grade 3, 11.3 in grade 4, and 11.6 in Grade 5” (Firmender, et al., 2013, p. 3). The scores for reading fluency in grades 3, 4 and 5 were widely spread, with students scoring above the 90th percentile and below the 10th percentile. The results of the study led to the conclusion that it is important for teachers to differentiate reading instruction. They recommended the use of flexible groups, differentiated instruction and content, and, curriculum compacting.

Moreover, Tieso (2001) found in a qualitative study that a modified or enhanced math curriculum unit over a period of three weeks fostered interest, motivation and perceived value in learning for students. The unit established learning goals for students and offered authentic learning experiences and products. Teachers reported students regardless of their levels of prior knowledge, had meaningful and interesting work to complete and most students were able to grasp the significance of the concepts in the unit. Struggling students had the opportunity to be motivated and engaged because of the modifications made to meet their specific learning needs. The instructional unit ended with a special project and participating students expressed enjoyment and pride when concluding their projects. Teachers also reported students spent many hours outside of class completing their projects, made personal phone calls and collected outside information and resources to complete the project. “All students interviewed were able to reiterate the major concepts involved in the projects...” (p. 210). In addition, students learned and applied the vocabulary learned mirroring real survey researchers. “One student from the lowest SES school was so highly motivated that she made personal phone calls, collected information and resources for her final project” (p. 210).

Şentürk and Sari (2018) conducted a qualitative study in a fourth grade science classroom with 23 fourth grade students over a period of 12 weeks. The purpose of the study was to

examine the contributions of a differentiated instruction approach as defined by Tomlinson (2001) on the science literacy of students. Teachers started by identifying students learning differences and preferences followed by the teaching plan including differentiated content, learning and teaching process, learning outcomes and assessment items. The study revealed increased interest and curiosity regarding science, use of technology to access science content, more interest in technology, use of technological tools and equipment during instruction and everyday life and, the creation of technological tools. The researchers also discovered that students shared the knowledge and experiences gained with outsiders and increased their science literacy levels by improving their relations with outsiders. The study also revealed gains in scientific process skills (observations, classifications, measurements, prediction, deduction and interaction) as well as advanced scientific process skills (hypothesizing, experimenting, measuring, comparing, researching, exploring, formulating, interpreting the data and graphing). The researchers concluded that DI is effective in improving scientific process and skills and it stimulated students' curiosity and exploring according to their interests, readiness levels and learning profiles.

However, a cross sectional study conducted in the rural areas of the alpine regions in Switzerland (Smit and Humpert, 2012) showed teachers using differentiation in their instruction did not have a different impact than those not implementing the approach in their classrooms. The goal of the study was to investigate how teachers incorporated differentiation practices in the classroom and whether or not team collaboration was a determining factor in its success. A secondary goal was to investigate whether these two practices impacted student achievement and success. 14 secondary schools and 8 primary schools participated in the study; 163 teachers and 1180 students. A survey was administered to all participants at the beginning of the study, and

students were administered an achievement test aligned to the German and Mathematics curriculum. They found teachers typically implemented tiered assignments, adapted the number of tasks or provided extended time for assignments. They described teachers implementation of DI could be categorized into two groups. Group 1, teachers with a holistic attitude towards DI is composed by the teacher that “embraces progressive teaching methods, such as plan or project work, in addition to ordinary instruction” (p. 1157). Group 2, teachers with a limited view of DI was distinguished by differentiating the number of tasks, providing more time, and peer work. The study also reported a correlation between a high team pedagogical culture and DI implementation but not a relationship between school, classroom climate and DI.

They also documented the inadequacy of differentiated instruction on student achievement. The achievement scores of students participating of differentiated instruction were not higher or lower than their counterparts. “...DI showed no significant effect on either mathematics or German test results” (Smit & Humpert, 2012, p. 1159). Although their findings do not support the effectiveness of differentiated instruction in the classroom, they found student context variables such as language and gender demonstrated significant effects on achievement. “...males had better results in mathematics and females scored higher in German. Those students who speak Swiss German at home exhibited generally superior results to those who use a foreign mother tongue” (p. 1159).

### **Differentiation in ESL Settings**

DI approaches in classrooms where students are also English language learners confront different challenges. Teachers have to consider language development stages in reading, writing, speaking and listening in addition to other aspects of readiness, learning profile and interest. “Language learners are diverse in learning another language, and in their approach to learning

and their abilities” (Iyer, 2015, p. 176). The different language stages contained in a singular classroom shape instruction. In addition to linguistic factors, internal and external factors play a role in students learning content. Internal factors are related to the individual himself, these are age and anxiety, aptitude, personality, affective (attitude and motivation), hemisphere dominance, learning and cognitive style, experiences and, first language influence. External factors are those factors pertaining to the instructional environment, the teaching process and curriculum. These are curriculum of choice, style of instruction, learning strategies used in the classroom, culture and background knowledge, motivation strategies and first language development (Iyer, 2018).

In a second language learners classroom all these needs need to be assessed in parallel to readiness, learning profile and interest, what can make the process of differentiation more complex and daunting. In order for teachers to fully meet the diverse needs of ELLs Iyer (2015) points out the need for teachers to consider these actions: encouraging and motivating learners linguistic and non linguistic knowledge, encourage learner’s pedagogical needs and interests, match content to the learner’s cultural experience, include learners’ background knowledge and learners own potentials whenever possible. He asserts that this approach will be more demanding of attention to learners’ strengths and weaknesses and places full responsibility on the teacher.

Compared to other teaching approaches, this approach demands more careful attention of the teachers; teachers have to establish his/her learners’ strengths and weaknesses relevant to the learning process; it is teacher’s responsibility to present right tools and techniques to increase learners’ interest and struggle free



environment; this learning context will make the learners highly motivated and self-efficacious (p. 182).

Tzanni (2018) conducted a qualitative study where he interviewed 234 practitioners of Teaching English to Speakers of Other Languages (TESOL) in different contexts in Greece. The purpose of the study was to explore the quality of DI beliefs and practices in Greece. The study revealed teachers' beliefs about differentiation differ from daily instructional practices. Although participants demonstrated a positive inclination towards differentiated practices in the classroom and agreed with all the characteristics of the approach, the use of differentiated practices in their classrooms was limited and mostly focused on certain aspects of differentiation. Teachers reported more emphasis on learning environment than in content, process or product. The study suggests the absence of differentiation in content can be attributed to the overwhelming amounts of preparation it requires, especially if the material has to be broken down into levels of complexity. Another inhibiting factor is the lack of professional training and classroom facilities. The study also suggests the absence of process and product differentiation. Teachers reported the use of different types of assessment but do not provide choices to students to choose they preferred mode of learning to demonstrate knowledge. Although, the implementation of differentiation in this study was limited, the authors brought to discussion the importance of teachers' beliefs. They highlighted that teachers with differentiation friendly beliefs were stronger and provided more opportunities for differentiation and enhanced students' motivation. "What is promising with these findings is the implication that the EFL teachers who have more positive beliefs towards differentiating on tend to adopt teaching techniques which are closer to differentiation in practice" (Tzani, 2018, p. 161).

Ortega, Cabrera & Benalcázar (2018) used a differentiated approach to teach ELLs when teaching English in an Ecuadorian vocational high school. The student population was diverse in backgrounds and social status, but the majority struggled with English language learning. Based on a diagnostic test, they learned most of the students were below grade level. Through interaction they learned that 80% of the students did not have a good command of reading, writing, speaking, and listening. Only 10% of students were able to complete instructional activities successfully. They differentiated content, process, product and the learning environment, and proceeded to document practical application advice for language teachers. Although, they do not offer any insight on student achievement, they offer research based advice to practitioners. They advice, “Language classroom instruction needs to consist of tiered lessons including homework assignments, learning activities, readings, materials, and assessments that better reflect students’ needs, ability levels and learning profiles” (p. 1227). In reflecting on their process they assert,

“We have realized that we have utilized differentiated instruction in the classroom to a certain degree, but not in a systematic manner... Because in a true, actual differentiated instruction model students are given opportunities to reach their learning potential and succeed by putting them at the center of teaching and learning, fostering equity and excellence, and acknowledging each student’s uniqueness” (p. 1227).

Their discussion brings to the forefront of language instruction and DI, not only the need for consistent DI practices but the lack of a unified framework to address ELLs needs in the classroom.

Although extensive research shows the benefits of implementing a structured DI approach in the classroom, the use of differentiation in classrooms has proven to be fragmented

and limited to certain aspects of DI (Smith & Humpert, 2012). Teachers most often provide individual tasks, adapt the number of tasks and allocate more time for certain students to complete work. A limited amount of teachers are aware of the integrative strategies of DI such as assessing prior knowledge or conducting formative assessments. DI mostly occurs during the planning stage of instruction but is absent during instruction. Teachers across disciplines have stated that meeting the varied needs of the classroom is their biggest challenge (Webster, 2014; Tobin & Tippett, 2013). They lack the knowledge and skills necessary to adapt curriculum activities in an efficient way during instruction (Tobin & Tippett, 2013). Teachers are hesitant to fully embrace the framework and often lack an overall framework from which to identify specific strengths and needs and to target specific outcomes for individual students within the context of class instruction (Tomlinson et al., 2003). Although teachers are fairly positive about wanting to provide adjustments and differentiated practices, they often feel that doing so is not feasible within current classroom climates (Webster, 2014).

CHAPTER III  
SOLUTION AND METHOD

**Proposed Solution**

Professional development is a key factor for improving classroom instruction and student achievement. Regardless of the form it takes its purpose is to improve the quality of education, serve as a mediator of effective policy for teachers and practice, and in improving student academic performance (Desimone, 2009). Effective professional development percolates down to student achievement. It enhances teachers' pedagogical and content knowledge while increasing motivation. When teachers have a strong content and pedagogical knowledge and motivation, teaching becomes more effective and meaningful. Effective and meaningful teaching results in increased student achievement (Guo and Yang, 2012). "First, professional development enhances teacher knowledge, skills, and motivation. Second, better knowledge, skills and motivation improve classroom teaching. Third, improved teaching raises student achievement" (p. 41).

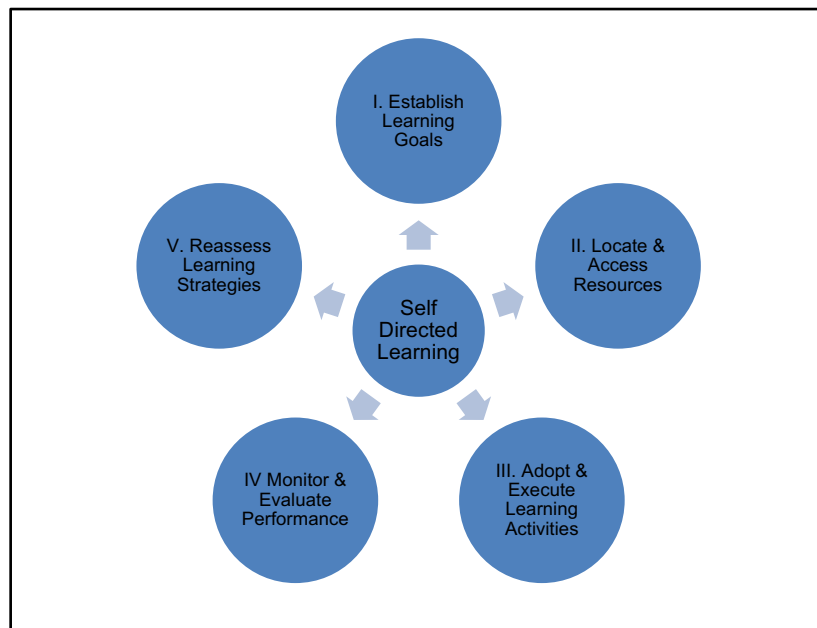
Traditionally professional development has been conducted through the expert centered approach. "The predominant form of professional development that is provided to general and special education teachers is based on an expert-centered model" (McLeskey, 2011, p. 27). However, research suggests that typical approaches are not benefiting classroom instruction delivery. "...A review of approaches to professional development that have typically been used in the past and continue to be widely used today is provided, even though they rarely lead to changes in teacher practice" (McLeskey, 2011, p. 26). High-quality professional development activities are longer in duration, actively engage teachers in meaningful and relevant activities for their individual contexts, promote peer collaboration and community building and have a

clearly articulated and common vision for student achievement (Lawless and Pellegrino, 2007). Professional development must involve participants in inquiry, questioning, and experimentation Spovitz & Turner (as cited in Guo & Yang, 2012, p. 42). One of the most important features of effective teacher professional development is to engage teachers in questioning about the practicalities of instruction, observation and reflection, and providing opportunities to make connections between what is being learned and classroom instruction (Guo & Yang, 2012).

Self directed professional development is professional development emerging from the teacher's own initiative and will to learn (Mushayikwa and Lubben, 2009). Self directed professional development is internally determined, initiated (Van Eekelen, Vermunt & Boshuizen, 2006) and carried out by the teacher. It is viewed from a collaborative constructivist perspective of learning. In a collaborative perspective the individual takes responsibility for constructing meaning while allowing the participation of others in order to confirm knowledge (Garrison, 1997). An educational experience is validated when it is meaningful and satisfying to the learner. Thus, meaning and knowledge are personally and socially constructed. "This balanced integration of cognitive and collaborative learning processes, therefore, defines learning outcomes as both personally meaningful and socially worthwhile" (Garrison, 1992, p. 19). Professional development activities that foster self-directed learning have the potential to contribute to higher levels of motivation and application (Beach, 2017). "Self-directed learning is a complex process that involves a range of cognitive activities, decision-making strategies, and learning experiences (Beach, 2017, p. 61).

In order to address the deficiencies in the implementation of DI in my classroom I employed Kim, Olfman, Ryan and Eryilmaz's (2013) self-directed learning (SDL) conceptual framework. This framework is based on outstanding principles of SDL such as determining the

specific knowledge and skills, adopting appropriate learning strategies, and assessing learning outcomes (Kim et al., 2013). It builds on five essential exercises for an effective and productive use of self directed learning. These exercises are (1) Establishing learning goals, (2) Locate and access resources (3) Adopt and execute learning activities (4) Monitor and evaluate performance (5) Reassess learning strategies (Kim et al., 2013).



*Figure 2.* Self-directed learning (SDL) conceptual framework

Figure 2 presents the five different activities that make up the framework. The activities do not correspond to a specific order, time or effort dedicated to them. In activity I, Establishing Learning Goals the learner identifies what is that he wants to accomplish from the experience. Activity II, Locate & Access Resources required the learner to identify resources needed for the accomplishment of the experience. In this step the learner can access information in a variety of forms including peers or knowledgeable others. In activity III, Adopt & Execute Learning

Activities the learner decides on a plan of action based on the previously established goals and the available resources. This phase includes the tracking and pacing of learning activities incurred, and collaboration and feedback from others as well. Activity IV, Monitor and Evaluate Performance entails the evaluation of the tracking and assessment process of goal attainment in order to refine or continue working on learning goals and learning activities. Activity V, Reassess Learning Strategies the progress towards the original goal is assessed once more. In this phase the learner engages in self-reflection of the various activities completed to determine ways in which the learning experience can be improved. In this phase the learner can make adjustments in one or more of the previous activities to improve learning and meet the established goals (Kim et al., 2017).

### **Justification of Solution**

I chose Kim et al., (2013) SDL conceptual framework to address the implementation of differentiation in my classroom. This framework has open ended, flexible and self directed qualities that suit my current teaching position and leadership reach. It distances itself from the traditional one size fits all approach that dominates school district approaches to professional development. “Informal professional development activities are likely to coincide with a teacher’s interest and often consider individual processes, real-life activities and contextual factors (Beach, 2017, p. 61). SDL empowers the individual by promoting decision making and responsibility over the learning process. It provides a flexible learning structure that allows for the learner to exercise complete regulation and control of the learning experience. “SLD is a theory where learning conceptualization, design, conduct and evaluation of the effort are at the learner's control” (Kim, et al., 2013, p. 151).

The framework also lends itself for individual or collective professional development efforts (Kim et al., 2013). This flexibility opened up opportunities to learn from and alongside other educators in my campus without turning professional development into a daunting activity, resulting in rich discussions, reflection, shared knowledge and support that contributed to the development of DI in my classroom.

### **Study Context and Participants**

Hockey Elementary School serves a varied range of learners from diverse backgrounds and currently has a general education program, ESL, Bilingual Spanish and Bilingual Vietnamese programs. Groenland ISD has identified Hockey Elementary as a focus campus. A focus campus is a campus that has not met the accountability targets as required by the TEA or that as determined by GISD is at risk of not meeting the standards in the near future. Hockey falls into the second category, and the district is making a proactive effort to prevent the campus to be formally identified as needing improvement. As a part of this plan teachers planning and instruction is constantly monitored and supported through planning meetings, general feedback and professional development. Their effort targets the overall needs of teachers Pre Kindergarten through Fifth grade and does not provide for supports systems based on teachers' individual needs.

I have been teaching for twenty years and my experience includes high school and elementary school teaching. This is my second year at Hockey teaching in a bilingual second grade classroom. My students come from diverse backgrounds and English proficiency levels. The majority of the students are born in the US but have connections to Hispanic cultures either because their parents were born in other countries or because previous generations immigrated to the states and passed on culture and language to them. They have been taught Language Arts



and Science in Spanish and Math in English previous to second grade. The language of instruction for the first six to eight weeks of school is Spanish. Depending on the overall proficiency level of the students, it slowly changes to English in Math and Science. Language Arts however, is always taught in Spanish in accordance to district guidelines.

## **Participants**

I was the only bilingual educator participating in this study. I was both the participant and the researcher. I documented the process of learning and implementing differentiated instruction in a bilingual second grade classroom. Data were collected before, during and after the intervention to: (1) to identify what is known and areas of intervention (2) the progress of the intervention and, (3) the efficacy of the intervention.

## **Proposed Research Paradigm**

Qualitative Research as defined by Creswell (2009) is a mean of exploring and understanding the meaning individuals or groups assign to a social or human problem. The process of research has an emergent design. It involves emerging questions and procedures that can change throughout, according to the needs of the research process. The data is collected and determined by the participants in their own setting. The researcher is key in the research process and is personally involved, having direct contact with participants for an extended period of time. The main goal is to learn as much as possible about the issue through participants' perspectives. "It is a form of interpretive inquiry in which researchers make an interpretation of what they see, hear and understand" (p.176).

Researchers collect multiple sources of data and gather information by observing and talking to others. Data analysis is built from the particular to the general. The researcher makes interpretations, finds the meaning of the data collected and discusses his understanding of the

issue or questions being studied. They build patterns, categories and themes from the bottom up by organizing the data into abstract sets of information. They use an inductive process and work back and forth between the themes and a database until the researcher establishes a comprehensive set of themes. The process involves collaborating with participants to validate and shape the themes that emerge from the process. In the entire process the researcher focuses on learning the meaning that the participants hold about the problem instead of the meaning literature has assigned to the issue. The readers as the participants give an interpretation of what they have read offering another point of view and another interpretation of the issue.

This research project assumed the pragmatist worldview. The pragmatic worldview promotes the development of theory directly from practice. Theory is derived from actions, and applied back to practice in an iterative process (Christ, 2013). Pragmatism focuses on the consequences of the study, on the importance of the question and on collecting data through a variety of methods (Creswell and Plano-Clark, 2011). Its primary focus is on practice and what works in practice. It considers singular and multiple realities during the process in order to provide multiple understandings and perspectives. Both, ethic and emic perceptions will coexist in the study. Each strand will generate knowledge that can be compared and combined increasing the credibility of the findings.

## **Data Collection Methods**

### **Self-assessment**

I filled out a differentiated instruction self assessment at the beginning and end of the study. The DI Self-Assessment helped me to analyze my instructional practices and to determine if and how much differentiation was taking place in my classroom. This self-assessment tool

also supported me in determining where to start as I began to engage in SLPD, plan and refine differentiated instruction in my classroom.

### **Observations**

I acted as an observer participant throughout the research. I took field notes to document the behavior and activities performed by others and myself in the process of understanding and implementing DI in my classroom.

### **Planning Documents**

I collected planning documents such as unit plans, weekly plans, professional documents and notes.

### **Independent Work Stations**

I collected samples of the work students were expected to complete and work with as part of their daily instruction.

### **Journal**

I kept a personal journal to document field notes and reflections throughout the research process.

### **Other Documents**

I collected meeting notes, personal notes and reminders that related to the process of planning, implementation and reflection of DI.

## **Justification of Instruments**

At the beginning of the research process I completed the DI Self-Assessment in order to determine how much DI was occurring in my classroom on a daily basis. The indicators of effective differentiation outlined in the self-assessment are based on four general principles and guidelines of differentiated instruction found in Tomlinson (1999). This self-assessment tool provided me with information on what aspects of DI I emphasized more and what aspects I needed more consistency on. The results allowed me to develop a coherent and personalized self directed professional development plan.

Throughout the research process I was an observer participant within my own classroom. As an observer participant I had a first hand account as the events occurred in and outside of my classroom. Observations allowed me to take reflective notes on the learning process and implementation of differentiated instruction in my own classroom and about professional discussions with other educators. They also allowed me to notice interesting or unusual aspects of the process of DI. I used a reflective journal during the research process. The reflective journal provided me with a tool to accurately record my thoughts, feelings, ideas and reflections on my journey to implement DI in my classroom and develop my own capacity.

I also collected student work materials from IWSs. These materials and templates allowed me to analyze and reflect on the level and quality of DI my students were participating of. They served to document how the planning process materialized in work that targets specific needs in the classroom and how EU were addressed. They also served as reflection pieces regarding instruction, planning and my understandings of DI. A variety of professional documents were collected such as meeting notes, lesson plans and training notes. I also collected

personal reminders and small notes. The collection of documents provided accurate and in depth information of the DI process in the classroom in an effective, time efficient manner.

### Data Collection and Analysis

The data collected in this research were analyzed using an inductive approach. I collected open ended data and developed an analysis for the information gathered. The analysis of data involved continuous reflection and analytic questioning as data were collected. I used a flexible bottom to top approach (Creswell, 2009) that allowed me to interrelate the various stages according to emergent needs.

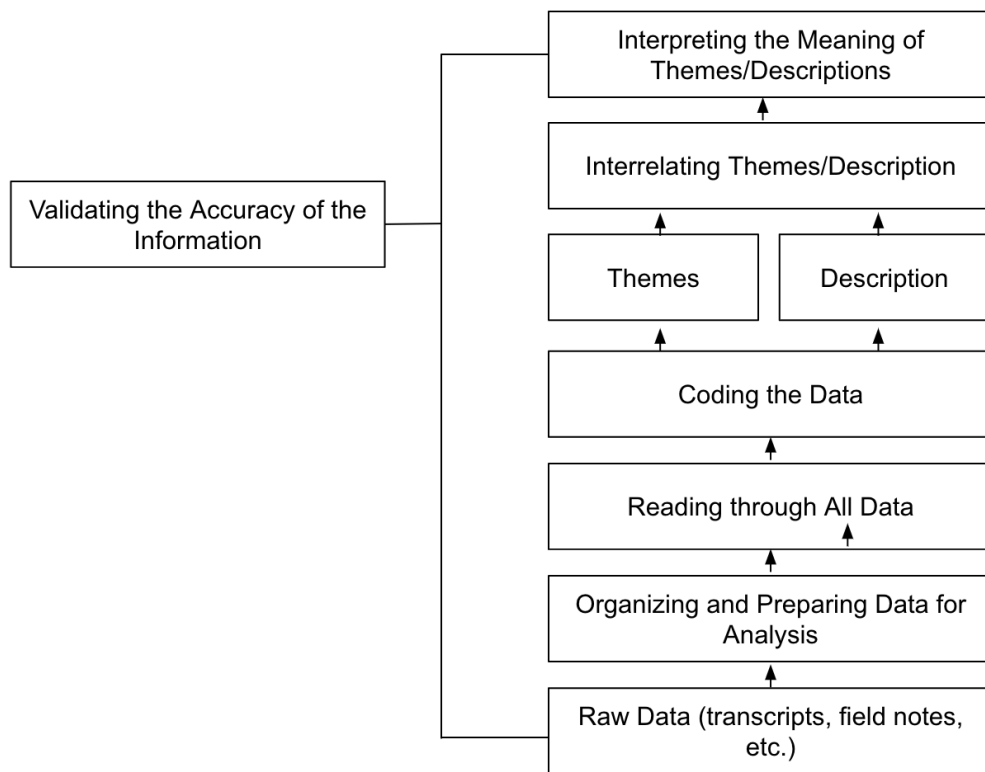


Figure 3. Data analysis in qualitative research (Creswell, 2009). Reproduced from Language Needs of ICT Students in Malaysian Polytechnics by A. Z. S, 2012, *Advances in Language and Literacy Studies*, 3, p. 37. Creative commons CC BY 4.0.

Figure 3 shows the data analysis process, starting at the bottom and progressing to the top. The process starts with the raw data followed by stage 1, Organizing and Preparing Data for Analysis. In this first stage, I transcribed, scanned, and sorted data into different types. In the second stage, Reading Through All Data, I read all data and identified general ideas and tones, the overall depth, credibility and use of the information. Stage 3, Coding the Data involved a deeper and detailed analysis of data. Data were organized into segments, according to categories. These categories were derived from the meaning of the information and assigned a term based on my own language. In stage 4, Themes and Description, I used coding to generate a description of the setting, myself as a researcher and categories for analysis. This description was a detailed description of information about the people, places or events happening in the setting. Stage 5, Interrelating Themes/Description involved the representation of the themes that emerged from the data analysis. A narrative passage and a detailed discussion were produced to represent the findings of the data analysis. The narrative passage discussed in detail the themes and subthemes identified, illustrations, quotation and my perspectives. The final stage, Interpreting the Meaning of Themes/Descriptions was an account of the lessons learned, the researcher's personal interpretation and its correlation with literature.

### **Validity**

Establishing validity is an important step in the process of research. Validity can be defined as the potential issues in data collection, analysis and interpretation (Creswell & Plano Clark, 2011). Validity and trustworthiness were considered and maintained throughout the study. Democratic validity was ensured by involving various stakeholders in the process and taking into account their points of view during the research process. I collected multiple perspectives through discussions with mentors and colleagues in order to access and consider

different perspectives. All issues and their respective points of view and rationale were documented in order to provide others with understanding on how approaches were implemented and why.

Outcome validity and trustworthiness were maintained by keeping a clear account of how actions were derived from the data gathering and analysis process; and how solutions were implemented and modified in the process to address the determined needs. I addressed process validity by providing a clear account how the methodology was carried out and how it was adapted over time. This process required flexibility as I was growing and changing as much as the research site was. Dialogic validity was addressed by using data triangulation and a critical friend. I presented the progress of the process and findings to stakeholders and a critical friend. Finally, catalytic validity was addressed by reflecting and understanding how the issue deepened and changed over time. This was achieved by keeping a reflective journal with thoughts on the study, methodology, data, logistic and methodological decisions as well as personal thoughts.

### **Researchers Resources**

The role of the researcher in this study was as the primary instrument of data collection. Data were collected and mediated through the researcher's descriptions and assumptions and qualifying experiences to conduct research. In the course of my teaching career I developed small research projects for the variety of courses I enrolled in this and other programs. For this project I relied on my district's resources and support and on my professors' guidance and expertise.

I have been in the field of education for 21 years and have taught at the secondary and elementary levels. I am certified as a Master Reading Teacher and served as an instructional

specialist at the elementary level, where I focused on coaching and mentoring teachers. My areas of expertise are reading, writing and second language learners.

As an educator I strive to serve each and every child in my class and cater to their individual needs although, sometimes time constraints, policies and administrators points of view interfere with my endeavor. My experience with professional development as a classroom teacher has been underwhelming and I can attribute limited professional growth to my participation on traditional professional development sessions through the years. I have relied mostly on formal educational programs, professional books and hands on experience to educate myself and improve my teaching practice.

### **Ethical Concerns**

I reviewed AERA's Code of Ethics and identified several potential ethical concerns in relation to the conduct of my study. I anticipated the process of decision making in my campus as one of the issues that could arise during the conduction of the research. As a member of the faculty I participate of many of the decisions made in a regular basis that affect students and other coworkers.

In order to avoid misconstructions of the impact of my study on the decision making process of the school I retrieved myself from any leadership position within the campus during the conduction of this study. This research project involved systematic, data-guided initiatives and processes designed to enhance service delivery in an elementary school. It was intended to use experience to identify effective methods, implement the methods broadly, and evaluate the impact or effect of the implemented changes. Lessons learned were used to inform and enhance future teaching practices and professional development among teachers in this campus.



## Timeline

The completion time for this action research project was eight weeks. Table 1 outlines the structured activities and the completion time. I had to contact the Research, Assessment and Accountability Department in person and via email several times during the first three months. Once I got the approval letter, I started collecting, sorting and analyzing data. Data collection procedures started in the month of May and were sustained for a period of four weeks. The completion of coding, creating a final draft and presentation of findings to ROS Committee and district stakeholder were completed during the Fall semester of 2019.

Table 1

*Timeline of Research Activities*

Month	Contact/Activity	Collect	Analyze/Action	Product/Audience
February	Submit Research to District	Research Forms	Complete forms	Approval
March	Wait for District Approval Inform Principal of ROS		Read and Code Inventory	Principal Approval Coded Inventory
April	Wait for District Approval/ Contact District RAAD Department			

Table 1. Continued

Month	Contact/Activity	Collect	Analyze/Action	Product/Audience
May	DI REACH Inventory and Data Collection  Implementation of SDL Data Collection  Existing Data Collection	DI REACH Inventory	Coding of first four weeks of data	General list of codes
June	REACH Inventory Retake	Data	Coding of second four weeks of data and Inventory retake and Coding.	General list of codes  Narrow down list of codes. Interrelate themes
July	Coding Drafts of ROS chapters, share with chair	Develop schedule to fulfill deadlines	Complete all analyses; synthesize information	Interrelate themes Interpreting the meaning of themes. Draft copies and eventual Final Draft
August	Share final copy of ROS with Chair and make corrections			
September-October	Share ROS with Committee  Defend by deadline Receive thesis clerk approval  Share final copy with stakeholders			Final draft  Copy of ROS

CHAPTER IV  
ANALYSIS AND RESULTS

**Presentation of Data**

The purpose of this study was to explore the implementation, understanding and evidence of DI in the bilingual classroom. The study was conducted over a period of eight weeks. It included the collection of an inventory before and after the study, a reflective journal, teaching artifacts, lesson planning documents and student independent work materials. Data analysis was conducted using an inductive analysis. Analysis of data involved continuous reflection and analytic questioning as data were collected. A flexible bottom to top approach allowed me to interrelate the various stages according to emergent needs. The process involved continuous reflection about the data and the generation of analytic questions, themes, interpretations and reports.

The data is presented by question and type of data collected.

**How would a Bilingual Elementary School Teacher Implement Differentiated Instruction in the Classroom?**

**REACH Inventory.** The REACH inventory answered at the beginning of the study showed that there were aspects of DI already occurring in the classroom. In the first part of the inventory Reflect on Will and Skill, the results showed strengths on my will and skill to differentiate instruction, while professional development, support, resources and a plan of action were areas of need. The second part Evaluate the Curriculum, showed the curriculum was a strong curriculum and no areas of need were identified. The third part Analyze the Learners, showed strength on knowing the students differences, interests and characteristics. However, creating student profiles for each area of instruction was another area of need. In the fourth part,

Craft Research Based Lessons the planning and crafting of lessons were strengths but the area of enrichment, choice and multiple experiences were identified as areas of need. The last part, Hone in on the Data showed the use of formative assessments and annual formal assessments as strengths while multimodal, multimethod and teacher and student assessments were identified as areas of need. After completion of the inventory goals were created to guide implementation and refinement of DI in my classroom. There were two goals: get familiar with the REACH inventory process and refine IWSs according to students' readiness levels and interest. After looking at the suggestions on the inventory to develop knowledge on DI, I decided to use two resources to start the SLD cycle. These were the books *Differentiation and the Brain* (Sousa & Tomlinson, 2011) and *Differentiation in Practice: A Resource Guide for Differentiating Curriculum* (Tomlinson & Cunningham Eidson, 2003). I also consulted *REACH: A Framework for Differentiating Classroom Instruction* and other professional articles.

At the end of the research I answered the REACH inventory again. In the first part Reflect on Will and Skill, the results had showed weaknesses in professional development and support. However, for this second administration the area had turned into an area of strength. The second part Evaluate the Curriculum, showed strength in the curriculum and it remained indicated as strength. The third part Analyze the Learners, showed strength on knowing students' differences, interests and characteristics, but developing student profiles remained as a weakness. The fourth part, Craft Research Based lessons was strength at the beginning and end of the study. This second time in the area of enrichment, choice and multiple experiences a note reading "improving" was added, signifying this area may have been further understood through the process of SLPD. The last part, Hone in on the Data showed the use of formative assessments and annual formal assessments as a strength while multimodal, multimethod and

teacher and student assessments remained identified as an area of need. When revisiting the two goals established at the beginning of the study, I found I had gotten more familiar with the REACH inventory process but only some aspects of IWSs were refined. IWSs were designed around readiness, student interest was taken into account but the use of multimodalities was limited to students reading above level. I also found that the parts addressing Reflection of Will and Skill had improved due to my efforts to engage in SLPD, addressing weaknesses in professional development support systems. Figure 4 shows the relative strengths and needs by section at the beginning and end of the study.

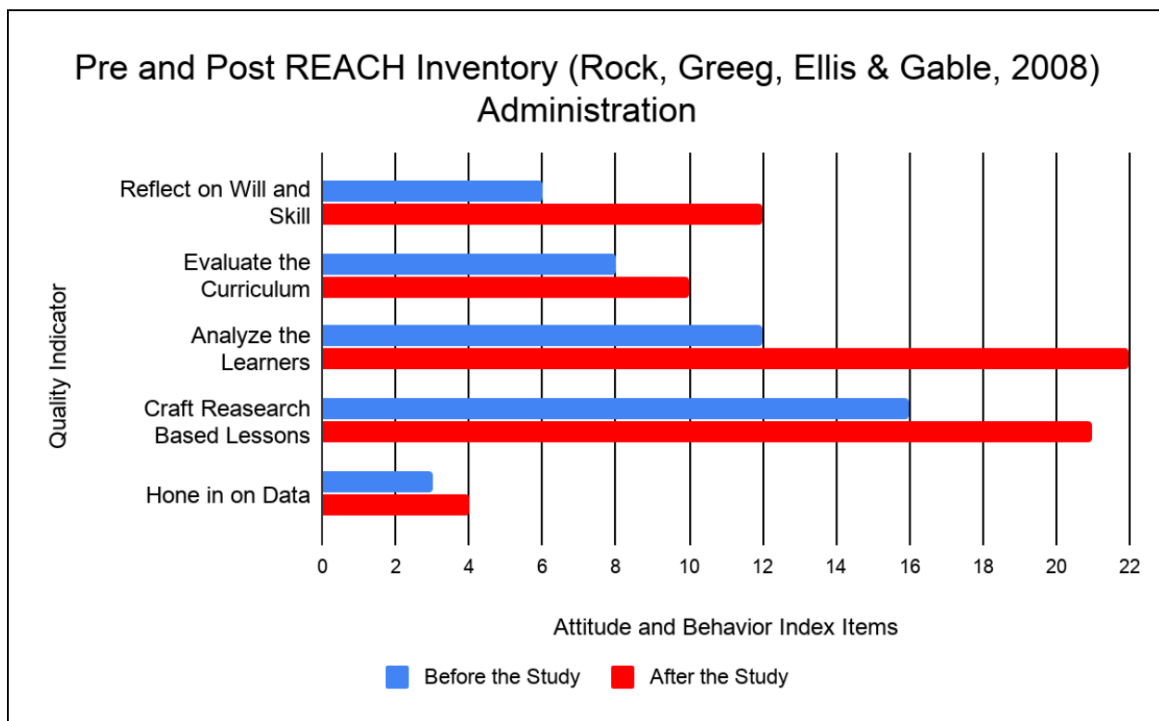


Figure 4. Pre and post REACH inventory results.

**Planning Documents.** In my classroom DI is approached as a compilation of pedagogical understandings that lead the teacher to show attentiveness to the way students learn

and what factors contribute to their learning. Instruction is approached and implemented in a systematic way that leads students into constructing knowledge and deriving joy from it. DI implementation begins with a thorough analysis of standards and how these can be taught effectively to all learners in the classroom. While analyzing standards, district provided essential understandings are considered and matched to high leverage standards (HLS), the standards that would yield the most learning and thinking. Lesson planning is done according to what is known about how children learn best and how the brain of a second grader works. Segments during instruction are short and laser focused on HLS. Planning documents show how the allocated standards for the unit are narrowed down to what is essential for students to have success. Figure 5 shows how these documents are analyzed and how standards are narrowed down to those that have the most leverage. HLS are broken down into smaller and more manageable objectives, and then scoped and sequenced according to the time allocated for a specific unit.

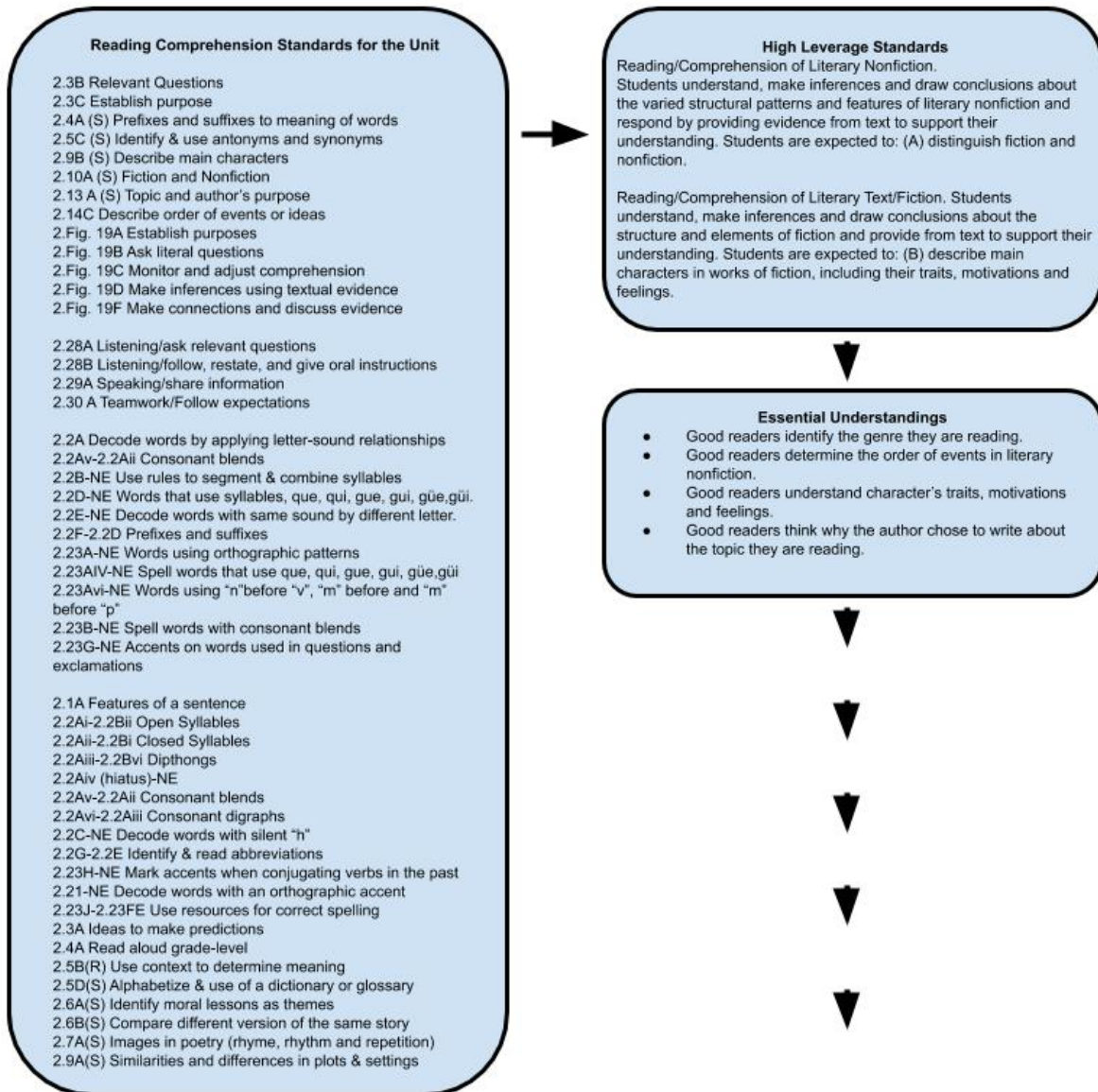


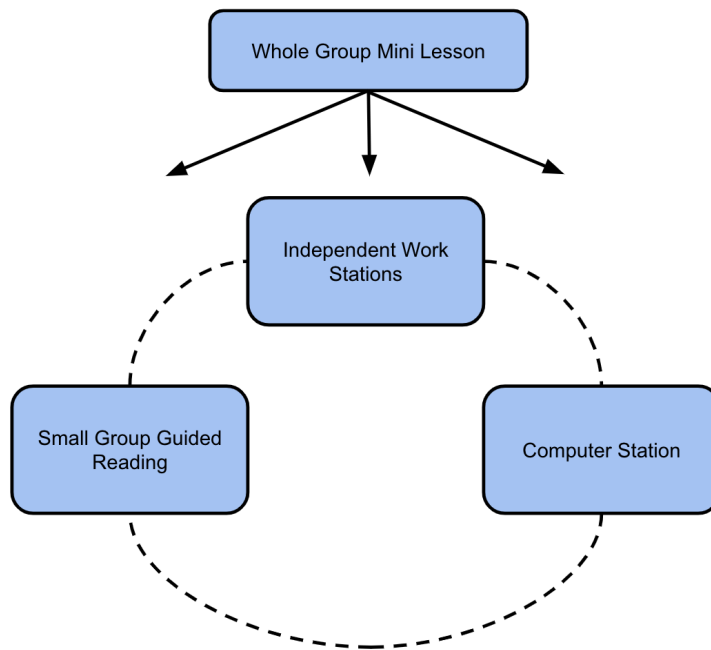
Figure 5. Standards analysis and objectives allocation for a unit.

Figure 5. Continued

Monday	Tuesday	Wednesday	Thursday	Friday
<b>18 UNIT 8: Literary Non-Fiction</b> LO: The students will distinguish between fiction and non-fiction.	19 LO: The students will distinguish between fiction and non-fiction.	20 LO: The students will make inferences about the features of a literary non-fiction work	21 LO: The students will make inferences about the structural patterns of a text.	22 LO: The students will make inferences about the structural patterns of a text.
25 LO: The students will identify story elements.	26 LO: The students will retell important events in the story.	27 LO: The students will make inferences about main characters.	28 LO: The student will make inferences about character traits and show evidence from the text.	29 LO: The student will make inferences about characters motivations and show evidence from the text.
<b>Apr 1</b> LO: The students will retell important events in the story.	2 LO: The students will make inferences about main characters.	3 LO: The student will make inferences about characters feelings and show evidence from the text.	4 <b>FLEX DAY</b> LO: The student will draw conclusions based on the text.	5 <b>FLEX DAY</b> LO: The student will draw conclusions and show evidence from the text.

HLS instruction is implemented in four segments: whole group mini lesson, small group guided reading, independent work stations (IWS) and computer station. It starts with an eight to ten minutes mini lesson that targets the visual, auditory and kinesthetic learner through the use of anchor charts, classroom discussions and conversation in pairs. After this mini lesson, the class breaks into three groups that switch every twenty five minutes taking turns to complete IWSs, participate in guided reading and computer time. These groups are made based on the results of Fountas and Pinnell’s (2010) *Evaluación del Desarrollo Lectura*.





*Figure 6.* Segments of instruction.

Figure 6 shows the implementation process. The mini lesson is given to the whole group and it targets the standards that will have the most impact on student learning. They follow a consistent pattern and take advantage of the typical attention span in a second grader, lasting between eight to ten minutes. One of the reasons these mini lessons are short is because working memory, the place where we process information only holds information for a brief period of time. The amount of information that working memory can hold at once is limited. Hence, too much information overloads working memory. “First teaching in small steps and then guiding student practice represents an appropriate way of dealing with the limitations of our working memory” (Rosenshine, 2012, p. 32). During these mini lessons, I use anchor charts, oral discussions, writing, student contribution and visuals to support understanding, increase participation and engagement.

Guided reading is planned according to the readiness of each group and linked to what has been presented in current or previous mini lessons. After this review and link to previous knowledge, students dive in their leveled texts to derive meaning and critically discuss the text through questioning. While reading and discussing students use their journals to make notes, organize information and construct understanding through the use of graphic organizers. Towards the end of the lesson they work independently in their journals to show where they are standing as opposed to the learning target. This is the part of the day where students grapple with the most rigor at their ZPD, guided by the teacher until they develop independence in working and managing the standard. Guided reading groups target student readiness levels and also provide a safe environment where students can interact with the text, make connections and think critically.

**Independent Work Stations.** IWSs provide students an opportunity to apply and extend what has been discussed in the class. They target readiness, interest and content. There are different types of stations and these target specific groups of students. Students who are still working on developing decoding and fluency work with content that addresses this need. They also work in stations that address the standard but with an adequate level of text and challenge. What changes is the complexity of the text not the rigor presented in the standard. Other students that are reading on level and beyond grade level participate of IWSs that address the standard with a different text, and a challenge appropriate to their needs. There are also open stations that target the whole class and students work on them at their current level of writing. These open stations provide a different type of challenge by addressing the standard and allowing the kids to work at their individual ZPD.

## **How would a Bilingual Elementary School Teacher Describe Differentiated Instruction in the Classroom?**

**Journal.** In this study DI was described as a mindset rather than an instructional approach. “I am taking that differentiation is more a teaching mindset than a set of strategies that can be implemented in the classroom”. This mindset is shaped by clear pedagogical understandings and beliefs. Kagan (1992) defines teacher beliefs as a form of personal knowledge that is oriented by our assumptions about students, learning, classrooms and the content we teach. Teaching beliefs influence teacher’s effort, persistence and resilience. They also define the will to embrace approaches that will lead students into constructing their own learning (Suprayogi et al., 2017). They guide instructional decisions and dictate teaching approaches employed in the classroom. “A teacher’s beliefs usually reflect the actual nature of the instruction the teacher provides to students” (Kagan, 1992, p. 73).

There were five important pedagogical understandings that contributed to the conceptualization of DI as a mindset. The first pedagogical understanding is the idea of the student as a whole. Students are emotional, physical and cognitive beings, not a one dimensional cognitive being. There is a general understanding of Maslow’s Hierarchy of Needs. In his Hierarchy of Needs, Maslow articulates that we are motivated to achieve certain needs. When one need is fulfilled, we seek to fulfill the next one, and so on. In Maslow’s theory food, shelter and sleep come first (Tomlinson and Sousa, 2011). In this context the school provides daily breakfast in the classroom and in some instances the school is a pseudo shelter where students are encouraged to relax and rest when needed.

“Many of my students come to school tired because they go to bed too late, or because they have to go to work with their single moms

after school. So, I thought this would give them a spot to sleep for 20 minutes to recharge and be able to tackle school work”.

Maslow’s need for belonging, affection and love is also met in this classroom. This idea is reflected in daily routines such as receiving the kids with a choice of high five or hug and an “I’m so excited you are here today”. There is intentionality in making children feel loved and accepted. “If students don’t feel that I love them, they are not going to learn. Why would they learn from someone that does not value and love them?” Affection and love play an important role in any individual’s personal and cognitive development. In the context of school, it is an important underlying message that impacts instruction and achievement. Another of Maslow’s levels met in this classroom is the self-actualization. Motivation is based on individuals seeking fulfillment and change through personal growth. Self-actualization refers to the need for personal growth and involves experiencing life fully, trying new things, taking responsibility, working hard, and vulnerability among others. In this classroom students are instructed and encouraged to develop growth mindset and to take responsibility over their learning. “I constantly challenge my kids to ‘expand their brains’ to push through what they consider a difficult task and find new ways to solve problems”. In this classroom meeting children’s primary needs precedes meeting their instructional needs.

A second pedagogical understanding that shapes my view of DI is growth mindset. At the beginning of the year we talk about how our brain develops and how challenges and failures are a springboard for our growth. “I teach them about fixed and growth mindset and how the brain works. I teach them that effort leads to greater learning and that being smart is not what you need to succeed”. These lessons are revisited throughout the year. “We have a red folder that we call the mindset folder. We made it at the beginning of the year and we collect

encouragement notes that we pull when we are feeling frustrated.” Lessons are kept alive and in the forefront of students' minds through this folder they keep in their desks. A phrase we use constantly in our class is “I know is hard but you have to push through” and the meaning of pushing through is to have real growth.

A third pedagogical understanding that shapes my view of DI as a mindset is instruction needs to be challenging and enjoyable. All aspects of instruction need to be developed considering the affective and cognitive needs of the children. Students’ memory is greatly influenced by their learning emotions (Wu and Xie, 2018). Instruction has to be enjoyable and rigorous rather than severe. “In the setting of classroom teaching, teachers should pay attention to set a relaxed and pleasant environment, create a happy learning atmosphere, and guide the positive emotions of students” (Wu & Xie, 2018, p. 267). Our emotions are processed by our brains in the limbic system and have an important role in pattern making. “When information and patterns produce an emotional ‘Aha!’ chemicals are released that stimulate the brain’s reward system and keep us motivated to continue learning” (Sousa & Tomlinson, 2011, p. 14). There is an established process for this pedagogical understanding in my classroom. Planning reflects the search for understanding essential knowledge and skills in order to create lessons and instructional tasks that are enjoyable for my students and carry appropriate rigor.

“When I created stations for this unit I focused on students creating content. For every unit I look at the standards and at Bloom’s Taxonomy and try to come up with work that is intellectually challenging at their individual levels and that has some sort of enjoyment. Most of the time, they have to cut out patterns to create some sort of craft that they add to the work. I look at it as a

way to stretch out their time to reflect on what they are learning because when children cut out the pieces they are quiet because the task requires concentration and when they are putting it together they are collaborating and sharing information with their peers”.

Rigor is seen as mental constructs that are not immediately seen but that are impacting students’ learning. Enjoyment prolongs rigor, the longer the student experiments joy and motivation, the more he will invest himself on what is being learned.

The fourth pedagogical understanding that makes up the DI mindset is purposeful planning. Planning needs to be a process of analysis and reflection about content and how content will empower children to construct their own learning and understandings. It involves reflecting on what is essential for each child to have academic and personal success.

“Curriculum standards need to be unpacked to identify conceptual organizers, that is, the big ideas that students revisit multiple times during the course of their education (McTighe and Brown, 2005, p. 236). Purposeful planning is an intentional break down of standards for the teacher to be able to piece together those parts that lend themselves to develop deeper understanding and transfer of critical knowledge and correlate those with meaningful instructional tasks.

“When I look at all the standards the district allocate for a specific unit I try to focus on those that yield the most, connect to other areas of learning and real life and take students into deeper thinking and learning”.

During the planning process the teacher needs to take into account the different variables that affect or effect on student learning. Lessons need to be narrowed down to the most essential

knowledge; instructional tasks need to be aligned to preceding, succeeding or current essential knowledge for individual students to have the opportunity to analyze content and construct their own learning. Purposeful planning entails deep understanding of standards, and understanding of what teaching practices will make specific content accessible for all children. It relies on the alignment of standards to instruction and student independent work for students to be able to maximize learning and develop the understandings intended by the standards.

The fifth and last pedagogical understanding is students construct their own learning. While participating in challenging and enjoyable learning experiences children engage in a constructivist process of learning. According to a constructivist approach to learning, the goal of instruction is to guide the learner to actively make sense of the instructional materials (Moreno and Mayer, 2007). Students construct their own understandings either socially or individually, they are thinking about their learning and assigning meaning to instructional experiences. “Some of the students... worked on turning part or all of their previous unit story (literary non-fiction) into a play”. “The learner is a sense-maker who works to select, organize, and integrate new information with existing knowledge” (p. 312). Students need opportunities to create and reflect on their own learning and understandings. They need opportunities to construct and refine what they have learned. “The kids are enjoying the opportunity to write their short plays, selecting the cast, rehearsing and recording the presentation. Their stage instructions are becoming more refined”. The ultimate goal of teaching is understanding and transfer and these two are correlated. “The more the learners are situated at the center of their own learning process, the greater the extent of their understanding and mastery of desired outcomes” (McTighe & Brown, 2005, p. 236). When children take ownership of their learning they are creating opportunities for themselves to understand, create and transfer learning in an organic manner.

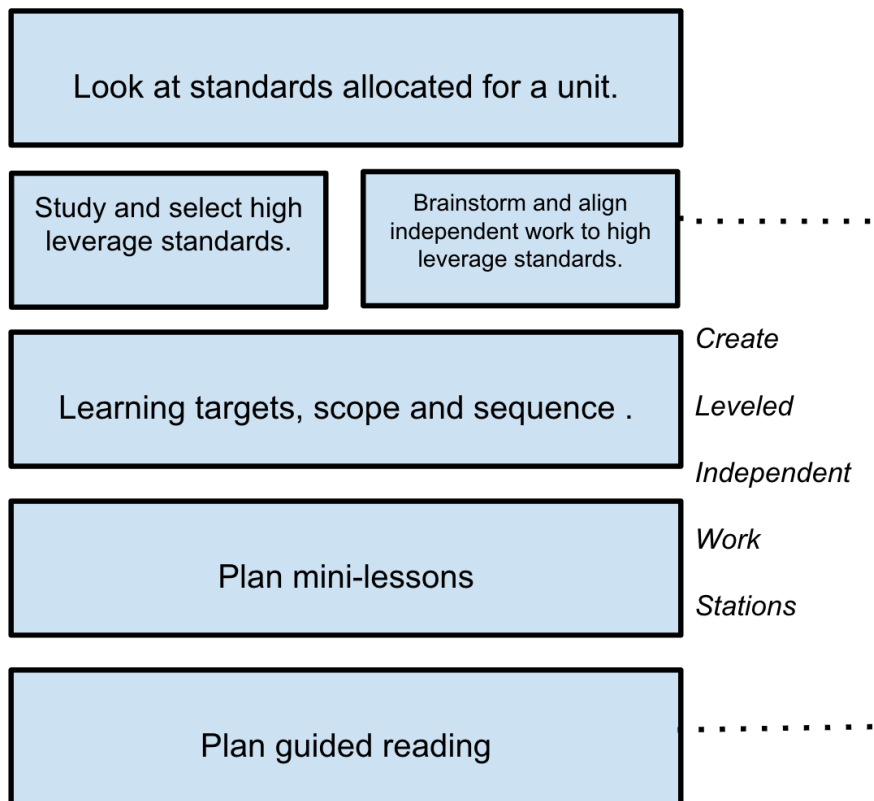
Pedagogical understandings shape our instructional vision and are constantly evolving. They are the underlying forces that grapple with and deliberate when we are making instructional decisions. They are the lens we see things through when we analyze and reflect on our practice and student learning. “I say is a mindset because there’s not only one component to it, instead many underlying pedagogies. These pedagogies arise when you are making instructional decisions”.

### **What Evidence Demonstrates Differentiated instruction Practices in the Classroom?**

#### **Planning Documents.**

*Unit Planning.* As shown in Figure 7, for each unit I started the planning process with the study of the most essential standards. Once the HLS were identified, independent work stations planning began. The next step was to create a scope and sequence along with some flexible days that allowed for changes in the schedule, reteaching or any other school assessment or event going on during the unit. When creating the scope and sequence learning targets were created and allocated following a progression aligned to the needs of the class.





*Figure 7.* Weekly planning process for differentiated instruction.

The progression of the standards for the drama unit is shown in Figure 8. In this unit comparing and contrasting the genres was not part of the standard but I deemed important for children to make connections with previous learning and use what they already knew from previous units to construct and anchor new learning. After, I set out to create a bulleted list of the most important points of the mini lesson and anchor charts. Once scope and sequence are outlined, the process of conceiving IWSs starts and extends until the end of the lesson planning process. After the scope and sequence, I created mini lessons and guided reading lessons taking into account student readiness levels.


TEKS Objectives: <a href="#">Reading Field Guide</a> <a href="#">Writing Field Guide</a>	2.8A, 2.11Dx, 2.28A, 2.28B, 2.29A, 2.30A, 2.17A*, 2.17B*, 2.17C*, N/A 	Academic Content Vocabulary: Character, plot, setting Act, scene, narrator, dialogue, stage directions,	Spelling, Phonics and Grammar • Spiral Review Writing • Personal Narrative
ELPS: Language Arts Week of 4/8-12			
<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>
LO: The students will understand the elements of drama.	LO: The students will compare and contrast elements of drama and elements of fiction.	LO: The students will identify the elements of dialogue.	LO: The students will make inferences about the structure and elements of drama.
			<b>Friday</b>
			LO: The students will make inferences about the structure and elements of drama.

Figure 8. Scope and sequence of learning targets for the drama unit.

**Mini Lesson Planning.** Mini lessons are aligned to essential understandings and delivered whole group. Mini lessons are 10 to 12 minutes long and always start by linking new knowledge to previous knowledge (Jensen, 2009; Tomlinson & Sousa, 2009) in the form of a review and are short and straight to the point. The brain “is continually looking for ways to weave new learning and past learning into a conceptual pattern that makes sense and has meaning” (Tomlinson & Sousa, 2009, p. 34). Mini lessons are planned to produce an anchor chart that is easy for all learners to understand and consult through the unit. If an anchor chart is not a product of the lesson, a previous anchor chart is discussed and reviewed. Figure 9 presents anchor charts created during the unit of Literary Non-Fiction. During the first three days of the unit through anchor charts the students are led into compare and contrasting genres and moved onto generating inferences regarding the genre of literary nonfiction.

These anchor charts follow a similar pattern to facilitate the creation of conceptual patterns (Tomlinson & Sousa, 2009), are concise and straight to the point. Their consistent pattern is topic, definition, example and an example or sentence stem. They target auditory and visual learners because they are created at the moment of the lesson integrating student feedback. Student participation is evidenced by the use of higher level thinking questions, turn and talk, writing to learn, and oral discussions as well as reminders for the teacher to “Allow students to contribute to the chart”. Every mini lesson is followed by a demonstration of

learning (DOL), an instructional task for students to show where they are at in relation to the content of the mini lesson. This activity can be completed right after the lesson, through the day or even later in the week. The content of the DOL activity varies from students writing, using sentence stems, oral discussions, drawing and other types of formative assessments.

Essential Understandings of the Unit				
<ul style="list-style-type: none"> <li>• Good readers identify the genre they are reading.</li> <li>• Good readers determine the order of events in literary nonfiction.</li> <li>• Good readers understand character's traits, motivations and feelings.</li> <li>• Good readers think about why the author chose to write about the topic they are reading about.</li> </ul>				
LO: The student will distinguish between fiction and non-fiction.	LO: The student will distinguish between fiction and non-fiction.	LO: The students will make inferences about the features of a literary nonfiction work.	LO: The students will make inferences about the features of a literary nonfiction text and show evidence from the text.	LO: The students will make inferences about the features of a literary nonfiction text and show evidence from the text.
	(Connected to Previous Knowledge/Readers identify the genre they are reading)	(Readers identify the genre, determine the order of events in literary nonfiction)	(Readers identify the genre, determine the order of events in literary nonfiction)	
		(Readers identify the genre, determine the order of events in literary nonfiction)	(Connected to Previous Knowledge)	

Figure 9. Week 1 mini lessons for the literary nonfiction unit

Figure 9. Continued

<p><b>DOL: 3CN Story Elements</b></p> <p><b>DOL:</b> Students write about the difference of fiction and non-fiction. Fiction is _____. Non Fiction is _____.</p>	<p><b>DOL:</b> Students will write on a sticky note the elements of literary non fiction.</p>	<p><b>DOL:</b> In pairs students write on a sticky note what elements of LNF they identified in the text and what is their evidence.</p>
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**Guided Reading Planning.** Guided reading plans are aligned to essential understandings and are linked to previous knowledge. The class is divided into three groups according to student scores at the middle of the year on the Evaluación del Desarrollo de la Lectura (Fountas and Pinnell, 2010) reading assessment. The groups are levels E, J-L, K-M and level N. The lessons target essential understandings but the texts used for each group are based on the reading level of the students in the group. The standard of the lesson is the same for all three groups, but the texts and the pacing of the lessons are different. “Like the content standards, desired understandings should remain a constant target, irrespective of differences in students’ background knowledge, interests, and preferred learning modalities” (McTighe & Brown, 2005, p. 236).

Each lesson starts with a quick review of the spelling pattern of the week and follows with a review of the teaching point of the mini lesson for groups E and J-L, and occasionally group levels K-N. The rest of the lesson is tiered and addresses the HLS targeted that week. Figure 10 shows the guided reading lesson plan for one of the weeks of the literary nonfiction unit. During this week the learning target for Monday is the student will distinguish between fiction and non-fiction. This learning target progresses in complexity through the week until students are led to make inferences about literary nonfiction towards the end of the week. However, for the groups level J-L and level K-N the lesson plan touches on making inferences

about the text through oral discussions right at the beginning of the unit on Monday, while the level E group builds up slowly until the end of the week to make inferences about a nonliterary fiction text towards the end of the week. At the end of the lesson students produce a DOL. This product is also based on student readiness. For this week the DOL for group level 8 is collected on Wednesday and supported by sentence stems, after the student has worked through the comprehension of the text, while DOLs for groups J-L and K-N.

Guided Reading					
Level 8	<ul style="list-style-type: none"> <li>Book: Dos Buhos en Paris</li> <li>Book Intro/New Voc</li> <li>Review Literary Non-Fiction using Go</li> <li>2CN: Features of LNF seen on the book</li> <li>Re read for fluency</li> </ul>	<ul style="list-style-type: none"> <li>Book: El 4 de Julio en Cleveland</li> <li>Review LNF: Memoria <i>Una memoria habla de sucesos reales de la vida del autor o el narrador.</i></li> <li>Ss read the book</li> <li>Order of Events in the story using GO</li> <li>Re read for fluency</li> </ul>	<ul style="list-style-type: none"> <li>Book: El 4 de Julio en Cleveland</li> <li>Review LNF: Memoria <i>Una memoria habla de sucesos reales de la vida del autor o el narrador.</i></li> <li>Ss read the book independently.</li> <li>2CN: Features of LNF seen on the book</li> <li>Este libro es ficción no literaria porque _____!</li> </ul>	<ul style="list-style-type: none"> <li>Book: El 4 de Julio</li> <li>Ss discuss LNF: Memoria</li> <li>Re read book for fluency</li> <li>Review how readers make inferences.</li> <li>Use picture</li> <li>Focus on pages 8-13</li> <li>Why do you think the author starts each page with the words Un año ya...?</li> <li>Why does the author chose to write a book about the 4th of July in his city? What makes you think that?</li> <li>Is that stated in the text or you can infer it?</li> <li>Infer _____ because _____</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Allow students to finish stations</li> <li>Catch up</li> <li>Small Group assessment</li> </ul>
Level 20-24	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: La Historia de Laura</li> <li>Review Literary Non-Fiction using Go</li> <li>Read pages 1-7</li> <li>2CN: Features of LNF seen on the book</li> <li>Discussion: Why do you think Laura's mom couldn't speak when she saw Lisa?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: La Historia de Laura</li> <li>Review Literary Non-Fiction/Memoria</li> <li>Verbal retelling of previous pages.</li> <li>2CN: Features of LNF seen on the book</li> <li>Discussion: Why do you think Laura's mom couldn't speak when she saw Lisa?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: La Historia de Laura</li> <li>Review Literary Non-Fiction/Memoria</li> <li>Verbal retelling of events ad pages 1-7</li> <li>Ss read pages 8-11</li> <li>Sticky Note: Why Mom is asking Lisa if she does not have any other friends?</li> <li>Review how readers make inferences</li> <li>Is Lisa agreeing with mom's request?</li> <li>What evidence you have to support your inference?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: La Historia de Laura</li> <li>Review Literary Non-Fiction/ Memoria</li> <li>Verbal retelling of events ad pages 1-11</li> <li>Ss read pages 12-13</li> <li>Sticky Note: Why does the author use the words: Laura, dijo Mamá cortante. Necesito una respuesta.</li> <li>What evidence you have to support your inference?</li> <li>How do you think Lisa felt when mom said Lisa is black and you are white?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Small Group assessment</li> </ul>
Level 30	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: Bailo para Contar Historias del Mundo</li> <li>Review Literary Non-Fiction using Go</li> <li>Read pages 1-8</li> <li>2CN: Features of LNF seen on the book</li> <li>Discussion: ¿Pa piensas que algunas personas tiraron flores al escenario? ¿Que te hace pensar eso?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: Bailo para Contar Historias del Mundo</li> <li>Review Literary Non-Fiction/Memoria</li> <li>Verbal retelling of previous pages.</li> <li>Ss read pages 9-11</li> <li>2CN: Features of LNF seen on the book</li> <li>Discussion: Why would a dance company make a world tour? How does Tilda feels about the tour?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: Bailo para Contar Historias del Mundo</li> <li>Review Literary Non-Fiction/Memoria</li> <li>Verbal retelling of events ad pages 1-11</li> <li>Ss read pages 12-15</li> <li>Review how readers make inferences.</li> <li>Why is the company presenting a different play in every stop?</li> <li>What evidence you have to support your inference?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: Bailo para Contar Historias</li> <li>Review Literary Non-Fiction/ Memoria</li> <li>Verbal retelling of events ad pages 1-15</li> <li>Ss read pages 18-20</li> <li>What elements help Tilda to represent each character? Why are these elements important?</li> <li>What evidence you have to support your inference?</li> </ul>	<ul style="list-style-type: none"> <li>Review Spelling Pattern of the Week</li> <li>Book: Bailo para Contar Historias</li> <li>Review Literary Non-Fiction</li> <li>Why was Tilda excited and sad at the same time when the tour came to an end? What is your evidence?</li> <li>Ss work on story elements (BME, characters, setting)</li> </ul>

Figure 10. Guided reading plans of the first week of the literary nonfiction unit.

**Independent Work Stations.** IWSs are aligned to essential understandings and differentiated by readiness and interest. “For every unit I look at the standards and at the Bloom’s Taxonomy and try to come up with work that is intellectually challenging at their individual levels and that has some sort of enjoyment”. IWSs are created after careful analysis of the essential understandings and the majority of the stations focus on creating a product using

content they have learned. “Using tiered activities or assignments can ensure that children with different learning needs will work with the same essential understandings ideas and used the same key skills but at different levels of complexity, abstractness, and open-endedness (Wu & Chang, 2015, p. 249). Figure 11 shows several stations used during the first week of the poetry unit. Each IWS has an exemplar that students can consult if needed. These exemplars are completely done for the students at the beginning of the year and as the year progresses exemplars become more about the mechanics of the station than about the content. In station 1, Comprehension Station the students have to read and write the poem “Hello Ocean” and color words that contribute to imagery. They identify rhyme, repetition, onomatopoeia and alliteration. These are concepts they learned about during the mini lessons and will apply in the writing station, later in the week. They have to trace and make a representation of the sea and use the provided pictures or create their own sea creatures on the blue paper to glue their work on. In station 2, Writing Station the students have to create a short poem including rhyming words, sensory details and onomatopoeia. They also have to draw what they want their readers to visualize through the use of sensory details. These two stations are aligned to the first EU, Good readers visualize and comprehend a poem by understanding the elements of poetry and the second EU, Good readers create mental pictures while they read. In station 3, Independent Reading Journal the students are expected to select a portion of the book they have in their independent reading folder and make a journal entry following the prompts provided. Although this is a choice based station, students are encouraged to choose poetry books and the personal connections, visualization and inferences sentence stems from the menu in order to target EU. In station 4, Spelling Station the students work on the spelling pattern of the week, word segmentation, syllable blending and create a funny story using two or three of the words on the

list. Although this station is not strictly aligned to EU, it supports the development of discrete skills to access EU and leads the children into creating an original story at their own writing level, challenging its creation by the clever inclusion of three words from the list. The fifth station, Computer Station is part of the daily rotation and provide the students with interactive lessons targeting native language development through personalized instruction and also ties in cultural aspects from different Spanish speaking cultures. This station is aligned to standards and uses a spiral approach to target grade level standards. The content covered is differentiated and depends on what the program deems appropriate for a specific student. It is a district initiative and expectation to support language development and can't be manipulated.

<p>Essential Understandings of the Unit</p> <ul style="list-style-type: none"> <li>• Good readers visualize and comprehend a poem by understanding the elements of poetry.</li> <li>• Good readers create mental pictures while they read.</li> <li>• Good readers make inferences as they read.</li> </ul>		
<p>Learning Targets:</p> <ul style="list-style-type: none"> <li>• The student will identify the structure of a poem.</li> <li>• The student will understand how rhythm creates images in poetry.</li> <li>• The student will identify how rhyme and repetition contributes to create images in poetry.</li> <li>• The student will identify how rhyme and repetition contributes to create images in poetry.</li> </ul>		
<p>Station 1 Comprehension</p>	<ul style="list-style-type: none"> <li>• Students read and write the poem "Hello Ocean".</li> <li>• They color words that contribute to imagery (rhyme, repetition, onomatopoeia and alliteration).</li> <li>• They trace and make a representation of the sea to glue their writing on.</li> <li>• Can use pictures provided or use their own.</li> </ul>	

Figure 11. Literacy stations for the poetry unit.

Figure 11. Continued


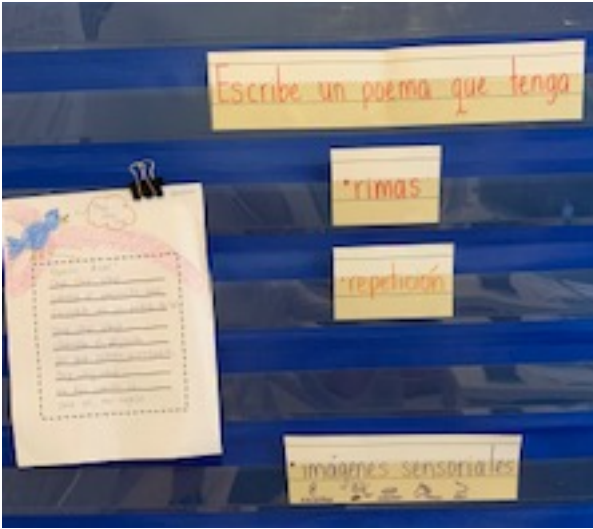
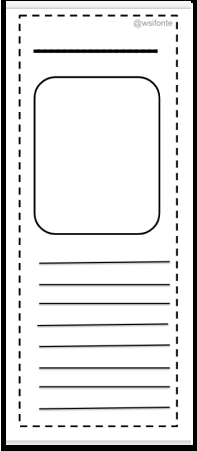
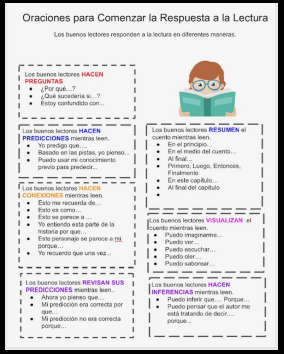
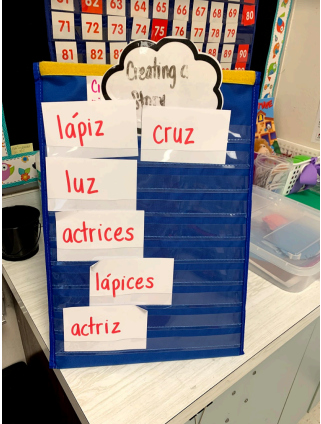
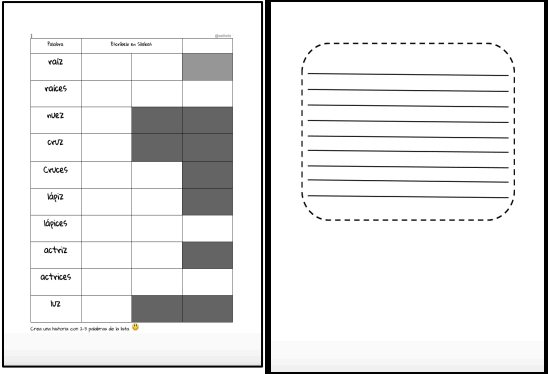

		
<p>Station 2 Writing</p>	<ul style="list-style-type: none"><li>• Students will create and illustrate their own poem using rhyme and repetition to create images in the readers' minds.</li><li>• They can choose to use rhyme, repetition or both.</li><li>• They have to illustrate what they want their readers to visualize.</li></ul>	 



Figure 11. Continued

<p>Station 3 Independent Reading Journal</p>	<ul style="list-style-type: none"> <li>Students have a folder with one self-selected book and one leveled book.</li> <li>They select a portion of the book they want to read and make an entry journal following the prompts provided.</li> <li>They are encouraged to choose making inferences.</li> </ul>	
<p>Station 4 Spelling Station</p>	<ul style="list-style-type: none"> <li>Students use syllable cards to form these words.</li> <li>Then, they segment the words on the handout.</li> <li>After they create a story using 1-3 words.</li> <li>Finally, they make a paper craft and attach it to their work.</li> </ul>	 
<p>Station 5 Daily Computer Station Required by the District</p>	<ul style="list-style-type: none"> <li>Students visit Imagine Learning Español daily for 20-25 minutes.</li> <li>Lessons target native language development through personalized instruction and focuses on different aspects of Spanish speaking cultures.</li> </ul>	

IWSs follow a pattern through the units because the brain is constantly seeking to establish patterns (Tomlinson & Sousa, 2009). Their content is different across units through the year but the mechanics of the stations are always the same. For example, in the spelling station children always have to read the words, make up the words with syllable tiles, break down the words on the handout and create a story using two or three words from the list. When they get to the station every week they don't have to grapple with the mechanics of the station because it is always the same. However, they have to grapple with creating a story that has a beginning, middle and end and cleverly integrate words from the list. Each station has individual mechanics that never change, allowing the students to quickly connect with the content and rigor of the station. By keeping the mechanics of the station through the unit, the teacher ensures children can engage with content and rigor more quickly because the task of making sense of the mechanics has been removed.

IWSs not only address essential understandings and rigor but also the developmental stage of the children. IWSs always offer a paper craft that motivate children to engage in working towards the attainment of essential understandings and also engage them in reflecting on learning. "They have to cut out patterns to create some sort of craft that they add to the work. I look at it as a way to stretch out their time to reflect on what they are learning because when children cut out the pieces they are quiet because the task requires concentration and when they are putting it together they are collaborating and sharing information with their peers". Neuroplasticity implies that the duration of learning stimulates neuron cells more powerfully and promotes memory of the brain (Wu & Xie, 2018).

There is an extension to IWSs, called the Google Classroom Station. This station addresses the needs of students reading above grade level. Students have the opportunity to

extend essential understandings through a multimodal method. “When readiness levels are appropriate, such processes as tiering, curriculum compacting, and centers can be used to extend and refine the learning of students already having requisite knowledge and skills” (McTighe & Brown, 2005, p. 238). As shown in Figure 12 for the literary nonfiction unit, students go through a series of steps where they have to watch a video on how to illustrate stories and create an original literary nonfiction piece. After they create their writing piece they have to create illustrations that convey the meaning of the story. This project has a second part to it where students will transform their pieces into a drama play, overlapping units and using previous knowledge to construct knowledge around the drama unit essential understandings. In this station students are interacting with multimodal environments and creating content. When students engage in consuming information from the station and creating content, their actions are determining what happens, how and what they learn (Moreno and Mayer, 2007).

**Wilma Sifonte Diaz**  
Apr 18 (Edited Aug 1)

### Cuento/Obra de No-Ficción Literaria Parte 1

1. Mira el Video de como ilustrar cuentos.
2. Crea un cuento de ficción no literaria.
3. Ilustra varias partes de tu cuento.
4. Cuando termines pide a la maestra la segunda parte del proyecto.

**0** Turned in | **11** Assigned

**How to get started illustr...**  
YouTube video 6 minutes

**Proyecto 2 No Ficción Lit...**  
Google Slides

**Narrative Nonfiction**  
YouTube video 2 minutes

Figure 12. Google classroom station targeting above grade level readers.

**Journal.** Classroom environment plays an important part in differentiation. A warm and inviting learning environment will lead students into feeling safe and nurtured. Nurturing students varies, from belonging and feeling part of the class to listening to their personal stories and making them feel physically comfortable. “Brain science research shows that the human brain controls the emotional function of the person, and a series of physiological responses may affect the person's emotions, which will affect memory, and ultimately affect the effect of teaching” (Wu & Xie, 2018, p. 268).

Figure 13 shows the setup of my classroom as described in a drawing included in the journal. It includes a rug area where we can all sit together and dive into a lesson or have meaningful conversations about school events and conflicts we have had. It also has four areas of clusters of tables where children can work together if they chose and different set ups with steppers, cushions and low tables and sitting where they can get comfortable to work and learn. Part of a positive classroom environment is recognizing needs that are not strictly instructional but that contribute to student achievement. Children thrive when their primal needs come first to their cognitive needs. “Most children enjoy learning new things but learning is really tiring and I understand that”. Children can learn deeply and think critically but they still have infantile and primary needs that need to be taken care of. “...And every day I tell my students how much I love them and how important they are to me”.

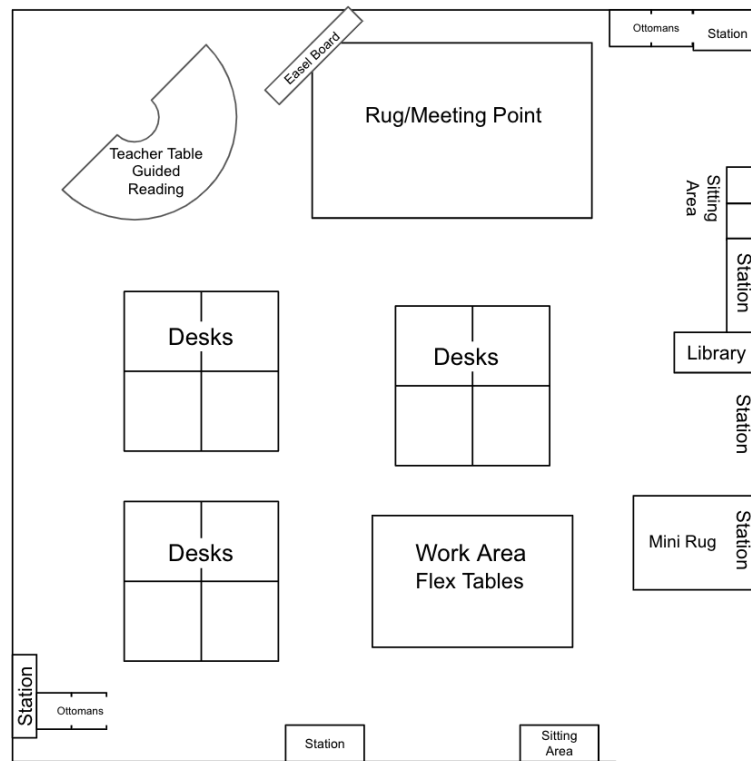


Figure 13. Classroom set up.

DI has many parts and it can take years to master all the details that would make the framework work efficiently in all areas of daily instruction. However, a small but steady step is a great way to start. “DI is not a prescribed framework composed of pieces that work together. It is more a toolbox that the teacher can use as it fits to address children’s needs”. This toolbox is constantly being filled through reflection and evolving pedagogical knowledge. Throughout the year you can add tools to the box, use several of them, or simply store some others for future use. Tomlinson (1995) states DI is flexible, uses a variety of approaches to content, process and product in anticipation and response to student variance.

### Results of Research

The results of the research will be presented by question.

## **How would a Bilingual Elementary School Teacher Implement Differentiated Instruction in the Classroom?**

After careful analysis data revealed DI implementation in this classroom had varied levels of implementation, was aligned to essential understandings and is aligned to brain research.

**Varied levels of Implementation.** DI implementation in this classroom had varied levels. Some aspects of DI were implemented on a daily basis and some others were implemented to some degree or, to a fraction of the class. However, varying levels of the different pieces of the framework in the implementation process did not seem to hinder the ability to plan for instruction that is effective and tailored to students' needs. Some aspects of differentiation can take priority over others when teachers are embarking in developing their own capacity. In this study emphasis was put on those aspects that would yield more student growth such as differentiation of content and process. Differentiation of product was only used with students that had shown greater levels of reading achievement in class. There was also little evidence of pre assessments other than standardized tests conducted at the beginning and middle of the year. No evidence was found on differentiated assessments, although a high volume of formative assessment activities was identified in the data.

**Instruction Aligned to Essential Understandings.** Instructional alignment was one of strengths identified in planning documents. There was a clear connection between the standard and all instructional tasks at differing readiness levels. Instructional alignment is an important factor in instructional planning. It impacts learning and plays a significant role for the efficacy and the application of complex aspects of learning including those related to motivation and transfer of learning. "Once the essential knowledge, understanding, and skills have been

specified for a unit of study, it is critical that they work like a magnet for everything else in the unit” (Tomlinson & Sousa, 2009, p. 51). All elements of the curriculum need to be tightly aligned to standards, essential understandings, knowledge and skills of the unit for outcomes to be predictable and constructive for all students in the classroom.

**Instructional Tasks Aligned to Brain Research.** Many of the instructional tasks in these units were connected to the way the human brain learns. Instruction was chunked into smaller sections to facilitate processing and linked to previous knowledge. By chunking lessons in smaller units of instruction students can process information by activating their hippocampal cortex into the formation, learning and initial memory coding of explicit memory, giving place to the formation of long term memory (Wu & Xie, 2018). Mini lessons, IWSs and guided reading lessons followed a mechanical pattern and fostered high levels of interest, creativity, and academic rigor. They also looked for divergent thinking, providing students opportunities to generate creative ideas by exploring different ways of solving problems. The brain is constantly looking for patterns and strives to establish connections in order to find meaning. The more exposure students have to the essential understandings, the more sense they will derive from these experiences. While deriving sense from these, they create their own patterns, understandings, and connections and extend existing cognitive networks (Sousa & Tomlinson, 2011). The more sense it makes, the more the brain is likely to retain it in its long term memory storage.

### **How would a Bilingual Elementary School Teacher Describe Differentiated Instruction in the Classroom?**

DI was described in this study as a mindset shaped by teacher’s pedagogical understandings. The pedagogical understandings contributing to the implementation of DI in the

classroom were student as whole, growth mindset, instruction needs to be challenging and enjoyable, purposeful planning and students construct their own learning. Teacher understandings in this case were based on experience and assumptions about students and how they learn. This set of beliefs influenced effort and persistence on providing quality instruction for students to be able to construct their own learning (Kagan, 1992; Suprayogi et al., 2017). There is a specific set of pedagogical understandings that drive instruction in this classroom and steer instructional decisions towards practices that align with DI.

### **What evidence demonstrates differentiated instruction practices in the classroom?**

There is substantial evidence of DI in this classroom. Instructional units are planned around essential understandings and the standards that would develop students' intellectual capacity the most. Mini lessons always follow the same pattern and are always linked to previous knowledge. The consistency in the pattern allows students to absorb new knowledge more efficiently and facilitate making connections. They also appeal to a variety of learning styles. Guided reading plans reflect DI by readiness, using leveled texts that address essential understandings without abandoning rigor. All IWS materials are aligned to EU and were created for the specific content of each unit and based on the needs of current students in the classroom. The content of these vary according to student readiness levels but the process is the same for subgroups within the class. The enrichment piece of the IWSs only target students that are reading above level. It focuses on students constructing learning through the use of multimodalities. These stations are aligned to essential understandings and address the need for differentiated product. Classroom environment is also differentiated according to students' physical and emotional needs by providing a warm and inviting climate and different physical environments for students to learn.



## **Interaction between the Research and the Context**

The topic and scope of this study were beneficial for both the context of Hockey Elementary and my own practice. Hockey Elementary has been serving its community for decades. However, faculty composition and administrators are constantly changing. This represents a hindrance for the implementation of any instructional practice, especially when a team approach is key to develop it. While conducting this study we faced many changes in the structure of our team. One of the new teachers was moved to another team to cover for a sudden resignation. Several substitute teachers came in to cover for her and this created disequilibrium in our own planning and teaching efforts. This was a major change in our team and it affected any advancement we had made before to work collaboratively, placing all efforts in supporting substitute teachers and students in their room. My planning was affected because rather than collaborative, it turned into a one sided effort to meet the needs of the kids.

Although it was not an ideal year for our team, we had really high hopes for next year and were starting to have conversations about how our planning and collaboration was going to look like for next year. Our excitement did not last long. Towards the end of this study we were notified that the district had decided to eliminate the bilingual program in our school in grades kindergarten through second, what caused my exit from this campus. There were other members that decided to leave the campus; our team was broken up once again. It rested on one of the new teachers to start over the next school year with three other new teachers. We were also notified that our administrator had found a position in a new district.

I contacted Hockey's administrators and shared with them my findings. The findings were met with a lot of enthusiasm and openness. They pointed out one of the reasons students in my class had success last year was because of instructional alignment, engagement and

classroom environment. They also recognized my teaching philosophies and confirmed these were accurate expressions of the way I teach my students. They recommended me to make a more effective use of the daily DOLs and take them into account for reteaching, and also to be cognizant of student instructional reading levels when planning for guided reading instruction. They also agreed on fostering pre assessments in order to accurately gauge the needs of the students. They did not entertain the idea of opening a space for teachers to have professional discussions or DI professional development. One of the points of conversation and reflection was the constant wave of changes this campus goes through and how district decisions affect its stability. District policy allows teachers to move to other positions within the district or other campuses during the school year, disregarding how these moves affect students in schools. This year the school is going through a district monitoring phase where all professional development and instructional planning activities have been already designed by an out of district company that is mentoring the school.

The lack of stability in campuses as Hockey impact instructional planning, collaboration and professional development efforts. Administrators and teachers are in constant pressure to address unexpected situations that although not directly linked to effective instruction impact effective instructional planning, collaboration and instruction. Although teachers on my team and administrators faced many unexpected changes, I have to say I am grateful for their support and encouragement. They always extended me the courtesy of respecting my work and trusted my commitment to the children. The only resistance I came across in the study was from the district. The office of Assessment and Accountability did not deem necessary for me to use student work samples in this study as a mean of improving my teaching practice.

## Summary

The findings in this study revealed DI could be implemented in any classroom. DI is shaped by the teacher' beliefs, competence and ongoing professional learning. DI is described as a compilation of understandings and beliefs that lead the teacher into decision making patterns that benefit the learning process of all students in the classroom. It stems from a clear understanding of standards and how these can be implemented on a daily basis in a way that reaches all students in the classroom. It branches out to careful consideration and design of instructional activities that will lead all students into constructing their own understandings of standards, while taking into consideration other needs that contribute to improve the learning experience such as social and emotional needs, learning styles, preferences and classroom environment.

## CHAPTER V

### SUMMARY

#### **Summary of Findings**

DI in this classroom was implemented at varying levels. Some aspects were implemented in depth, and some others only implemented to some degree or, to a fraction of the class. However, the variance in the degree of implementation does not take away the efficacy of the framework. Some aspects of differentiation can take priority over others when teachers are working on developing and sharpening their own practices. One of the most important aspects for any instructional approach to work is instructional alignment. Its presence impacts learning and plays a significant role on the efficacy and the application of complex aspects of learning including those related to motivation and transfer of learning.

Descriptions and understandings on DI have been constructed around experience, pedagogical understandings and perception of students. They were connected to an academic description of DI and shaped by my perception of what were the needs of the students and how I could best meet them. DI was described as a mental construct or mindset that leads the way for the teacher to plan instruction that reaches all students in the classroom.

Instruction was planned in consistency with recent brain research. Lessons were split into smaller units to facilitate processing, linked to previous knowledge, fostered excitement and interest, and multiple ways to deliver instruction to a variety of students were also used. Instructional tasks were aligned to essential understandings and followed a mechanical pattern, facilitating processing and fostering high levels of interest, creativity, and academic rigor. Instructional tasks allowed students to construct their own patterns, understandings, connections and extend existing cognitive networks. They follow the same pattern, allowing students to absorb new knowledge more efficiently and facilitate making connections.

Instructional units are planned around essential understandings and the standards that would develop students' intellectual capacity the most. They also appeal to a variety of learning styles and target students readiness levels. Guided reading plans reflect a DI by readiness, using leveled texts that address essential understandings without abandoning rigor. All IWS materials were created for the specific content of each unit and based on the needs of current students in the classroom. The majority of the stations target readiness and interest. The enrichment piece of the IWSs only target students that are reading above level. All activities focus on students constructing learning.

### **Discussion of Results in Relation to Literature**

In this study DI was implemented at varying levels, not all the components of DI were working at the same time. Some aspects of DI were prioritized over others in order to address student needs. Although differentiation of content, process and product occurs in the classroom, there were more opportunities for students to participate of differentiated content than from differentiated process and product. DI in the classroom can have different foci according to the unit the teacher is implementing and the variety of students in the class. "Accordingly, the differentiation in this unit includes is based largely on readiness, interest and learning profile addressed as appropriate" (Tomlinson, 2003, p. 17). This aspect of varied degrees of DI in a given unit challenges the notion of a negative competency of DI (Smith & Humpert, 2012) when it is limited to only certain aspects of the instructional approach. "In the same way, there is a large variety in DI implementations, e.g., the teachers put different learners in different groups (according to their level or interest), present different sets of exercises, provide enrichment materials for a bright student, put forward more or less strict demands as to the attainment of the learning objectives, allocate more or less time, give more encouragement to certain students,

allow a student to work alone instead of in group settings, choose a different starting point in the experiential learning cycle” (Suprayogi et al., 2017, p. 291).

DI is defined in this context by a cumulation of pedagogical ideas and beliefs. In this context DI is a teaching mindset composed by several pedagogical understandings. These understandings revolve around the idea of providing an optimum environment to children in order for students to construct their own learning. Teaching understandings guide educators actions, decisions and teaching approaches (Supragyogi et al., 2017). DI is seen as a combination of pedagogical ideas that drive teacher efforts to meet learners’ needs. This combination of beliefs have an indirect but strong influence on teaching practice (Etmer, Gopalakrishman, and Ross, 2000).

DI is evidenced in this classroom by the planning of instructional activities that address different type of students. Instruction is delivered in smaller blocks within the time allocated for reading and language arts. Different needs are addressed whole group, small group and with IWSs targeting specific needs. Instructional activities in this classroom create opportunities for students to engage with the essential understandings of each unit according to their own differences and needs. They are designed in a way that helps students to understand and apply content in a personal and meaningful manner. “DI provides opportunities for students to work independently and with others on authentic literacy tasks, while providing explicit instruction on reading and writing strategies, and creating a motivating and supportive literacy environment” (Tobin & McInnes, 2008, p. 8).

### **Personal Lessons Learned**

The first lesson learned was DI implementation entails a continuous improvement cycle for the teacher. This research has left some open areas for me to explore and develop. I am

looking forward to next year where I'll have a new opportunity to delve into a new cycle of professional learning and continue implementing DI and empowering my students. The second lesson learned was DI calls for a team approach. I know that I could have accomplished a lot more this year if our team wouldn't have gone through so many changes. I missed opportunities to engage in professional conversations and collaboration because of all the efforts we had to place on covering the loss of a teammate. The third lesson I learned through this research was to pace myself and be forgiving. Professional learning is very exciting, especially when you have the opportunity to apply immediately in your own classroom. But it can also be a source of worry and concern when you realize how much you still have to learn. I have learned to encourage myself to develop a slow but steady pace and to celebrate my strengths and develop my weaknesses. This is a journey of continuous improvement and reflection and the only way we can empower children is by engaging in a continuous cycle of self improvement.

### **Implications for Practice**

Hockey Elementary serves a widespread range of learners from diverse backgrounds. Learner variance is what makes Hockey an ideal campus to promote DI in every single classroom. A DI approach will benefit students by promoting equity and excellence and focusing on teaching best practices. A consistent and supported DI approach will effect in better student achievement, and increased student engagement. Teachers will also benefit from DI implementation as organizational structures and supports will need to be put in effect to support the process. These structures and supports will foster collaboration among teams, ultimately enhancing content and pedagogical knowledge.

This research study confirms findings on current research on DI. DI in this classroom was implemented at varying levels, confirming implementation tends to focus on certain aspects

of DI. It also confirms teachers understandings and beliefs guide instructional practice and decision making in the classroom. This research also provides specific examples of lesson planning, alignment and IWSs that can be used in other bilingual and monolingual settings as well. This study contributes to the relatively small amount of literature that discusses DI in bilingual educational settings.

### **Lessons Learned**

Through this study I learned several lessons. First, DI is a flexible approach that can be implemented in the classroom in phases. Teachers do not need to implement all the facets of the approach at unison for students to benefit from it. Second, there is value on approaching DI planning and implementation with a team of educators. Each member of the team would bring unique contributions and ideas that would derive deeper learning and rich discussions. Third, teachers' beliefs guide instructional practices and decisions. Assessing, revising and including new research findings into our teaching beliefs will make our instructional decisions more effective and will ultimately empower all students.

### **Recommendations**

I recommend Hockey Elementary's administrators to open a space for teachers to reflect on and discuss DI, without prompting for any immediate action. This space could take the form of a traditional or virtual learning community where teachers can learn from each other about DI. A learning community fostering DI discussions will develop interest in DI, help in gauging current knowledge and practices and will also be a mean to identify teacher leaders that can serve as motivators and facilitators.

After the space for professional discussions and reflection has been created and maintained, a formal plan of action can take place. This plan of action must provide for DI



professional development at all levels, administrators, instructional coaches, teachers and teacher assistants. The first step of the plan would be for administrators to immerse themselves on DI and the many ways and shapes it can take in the classroom. This will allow them to serve as mentors and coaches to teachers by providing effective feedback. The second step would be to train instructional coaches on the DI framework focusing on how it looks like at the elementary level and what type of support would benefit teachers the most. The third step would be for coaches coach and mentor grade levels on how to integrate DI practices in their current planning framework establishing a slow but steady pace in a subject area chosen by teachers and their teams. The fourth step, would be for instructional coaches to train and mentor teacher assistants on how they can facilitate and collaborate with teachers in creating and implementing DI in classrooms. The fifth step would be for administrators, instructional coaches and teachers to come together and assess what they have reached and find ways to improve advances. Throughout this process the learning community must be kept open and promoting professional conversations regarding DI learning, refinement and practice.

### **Closing Thoughts**

This study on DI in the bilingual classroom intended to explore the implementation process, understandings and evidence of DI. DI implementation can be overwhelming for teachers seeking to meet the diverse students in their classrooms. It can also be misconstrued by the absence of adequate professional development and conclusively disregarded as an effective instructional approach. One of the purposes of this ROS was to foster conversations and discussions with colleagues and administrators regarding the need for a more consistent DI approach in our campus.

Our classrooms are composed by students from different backgrounds and experiences. They are the heart of our profession and our vocation revolves around what they need to reach their full potential. Our children deserve to be treated and educated as individuals, thinkers, builders and the change agents they are. Providing education that is tailored to students' needs is our duty and responsibility towards our society. When we look at strengths and weaknesses as valuable in students' educational journey we are advocating for a better future for our children. We are building the stepping stones for them to continue and develop into productive and sensitive adults.

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