

Teachers Who Differentiate Instruction: A Comparative Study

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Abstract: Differentiated instruction (DI) is a curriculum framework that focuses on the individual student. Students achieve because teachers develop lessons to the students' readiness levels, interests, and learning styles. Students in early childhood through college have shown increased achievement when DI is implemented. The purpose of this quantitative, causal comparative study was to compare self-efficacy about DI and the frequency DI was implemented between first-year teachers and teachers with more than one-year of experience. The problem is teachers often do not implement DI in the classroom because it is perceived as too challenging. This study obtained information from 97 first through fifth grade teacher participants. The participants were randomly selected from 4 southwest Oklahoma elementary schools. A quantitative, causal-comparative research method was implemented to determine if there was a difference between teachers' self-efficacy about DI and the frequency teachers implement DI in their classrooms. The findings from the One-Way MANOVA statistical test revealed there was a significant difference of $p < .05$ between first year teachers and teachers with more than one year of experience for self-efficacy and frequency DI was implemented. By investigating whether first year teachers or teachers with more than one year of experience were more likely to implement DI, the field of education will gain a better understanding on how to improve either teacher preparation programs for first-year teachers or professional trainings/mentorships for teachers with more than one-year of experience.

Keywords: Differentiated Instruction, Self-Efficacy, First-Year Teachers, Field of Education

1. Introduction

Differentiated instruction (DI) is a framework for curriculum that considers students' differences in designing learning opportunities [30]. The teacher is guided by the students' individual readiness levels, learning profiles, and their interests. The teacher incorporates students' individual needs throughout the process of the lesson and into the content being taught [25]. Adjustments are made to the process and content based on the students' readiness levels, learning profiles, and interests [28].

The teachers' and students' roles in the classroom are important components in the DI framework. The students are active participants in the class and they are expected to collaborate with peers regularly in flexible groups. The teacher monitors students with diverse assessments such as hands-on activities, open discussions, and in flexible learning groups [28]. The teacher provides small groups with

individual instruction based on the students' readiness levels and interests. Students advance because instruction is presented to their readiness level. This is known as the zone of proximal development (ZPD) [34].

Research has revealed implementation of the DI framework significantly increases achievement across all grades and subjects [21]. Firmender, Reis, and Sweeny (2013) concluded there is a need to differentially instruct in order to reach the different readiness levels, learning styles, and interests in the classroom. Traditional, one-size-fits-all teaching will not meet the diverse needs of today's students [28]. There are too many differences between the students for the teacher to instruct the whole class using one style and one ability level [10]. Traditional lessons are not interactive or personal for the students. By not implementing DI, students are at an increased risk for academic failure [30].

According to Dixon, Yssel, McConnell, and Hardin (2014) implementing DI begins with a teachers' high self-efficacy

about teaching. Self-efficacy is an individual's self-perception to perform tasks [1]. Teachers' self-efficacy is the belief teachers can influence students through their instruction [8]. Teachers with high self-efficacy about DI will be able to follow the DI framework because they believe they can control student achievement [1 & 7]. Teachers with low self-efficacy perceive challenges such as implementing DI, to be an obstacle they may fail at; therefore, teachers feel it is a risk to implement DI [8]. Ruys, Defruyt, Rots, and Aelterman (2013) revealed first-year teachers to have a low efficacy about teaching in general because of the uncertainties of the profession.

Dixon et al. (2014) specifically stated teachers must have high self-efficacy about their teaching abilities because DI is a learning framework. The teacher will often learn new things about the students, strategies to meet the needs, and plans for future lessons. According to Bandura's Social-Cognitive Theory (SCT) (1997), individuals with high self-efficacy embrace learning situations and perceive situations as challenges to be solved. Per Bandura's SCT, low efficacious individuals believe they lack the capability to perform a task. Powell, Higgins, Ara and Freed (2009) revealed 42% of teachers felt worried about being able to boost student achievement using DI; therefore, they resorted to traditional methods. Many first-year teachers question their own ability to implement the tasks of DI. Dixon et al. (2015) revealed low efficacy in first-year teachers is related to not implementing DI.

1.1. Background

Differentiated instruction (DI) is widely accepted for effective learning across all grades and subjects (Little et al., 2014; Reis et al., 2011). The goal of DI is to ensure teachers focus on the process for learning by instructing with diverse approaches [30]. Instruction is purposeful and interactive for students. A key component of DI is small group learning. Students work in groups, while the teacher facilitates. Instruction is meaningful because students learn in small settings based on their ability needs, interests, and/or learning styles [30]. The small setting allows students to progress through their zone of proximal development (ZPD). ZPD is a social constructivist theory developed from Vygotsky (1986/1934). The premise of the theory is students learn through active involvement with teachers or peers. Achievement occurs when instruction is scaffold to students' individual needs. Students explore new concepts, while teachers facilitate and provide students with constructive guidance [23].

There are perceived challenges with implementing DI in the classroom. Many teachers struggle with developing diverse instructional strategies for the students [27]. Adjusting lessons based on students' needs was reported as a challenge by teachers [8]. According to Smit and Humpert (2012) teachers expect diversity in their classroom, but do not feel capable to teach to the many differences students have. Some student teachers reported feeling not prepared for teaching DI because of the lack of training from their

teacher preparation program [26].

Bedir (2015) suggested self-efficacy about teaching as the reason some teachers struggle with areas of instruction. Some teachers have a difficult time adapting to new curriculum, strategies, or students, while other teachers do not. A teachers' self-efficacy is the belief a teacher can bring about positive change in his/her students [7]. Low self-efficacy may be the reason teachers struggle with following through with implementing ideas learned from professional development [8].

1.2. Statement of the Problem

The problem addressed with this research was teachers often do not implement DI in the classroom, even though it has shown to increase student achievement [30]. The reason teachers do not implement DI is it is perceived as too challenging [7]. DI can be difficult for teachers to implement because it involves knowing how to utilize authentic assessment, such as incorporating different texts, higher level questions, and flexible groups with students [27]. Some teachers even struggle with DI after receiving professional development with differentiating the process of higher-level questions to small groups [8]. Dixon et al. (2014) revealed many teachers do not believe their students could be managed in flexible groups; therefore, instruction was not provided in small groups. One of the biggest challenges teachers will face as they begin their career is learning how to use DI [30]. Petrilli (2011) found only 20% of teachers implemented DI due to the complexities of the framework. This is a problem because DI is an individualized teaching and learning approach that significantly increases achievement [8].

Dixon et al. (2014) revealed teachers across all grade levels and subjects have difficulties with understanding various components of DI. Ruys, et al. (2013) stated first-year teachers will have high efficacy about DI if teacher education trainings included DI in the preparation program. Other research indicates first-year teachers are more likely to not embrace the DI framework due to low self-efficacy about teaching [7]. Based on the conflicting research on first-year teachers and teachers with more than one year of experience, it was necessary to investigate if there was a difference in first year teachers' self-efficacy about DI and teachers' self-efficacy with more than one-year of experience and the frequency DI was implemented.

1.3. Purpose of the Study

The purpose of this quantitative, causal comparative study was to investigate if there was a difference between first year teachers' self-efficacy about DI and the frequency DI was implemented in their classroom compared to teachers with more than one year of experience. It was necessary to compare first year teachers and teachers with more than one year of experience to learn the type of teacher who was likely to embrace the DI framework [7]. DeNeve et al.

(2015) revealed first-year teachers struggle with implementing DI because they lack self-efficacy about teaching in general. The role of mentors for first-year teachers was found to be a contributing factor for why some teachers are more likely to implement DI [26].

Some teachers do not implement DI, while other teachers do implement DI [7, 10, 33]. To determine if there were statistical differences between both categories of teachers' self-efficacy about DI and the frequency DI was implemented, the data was compared, described, and analyzed with statistical tests. Two school districts in southwest Oklahoma were chosen to participate in this study. The four schools consisted of demographics which represented diversities in ethnic, socio-economic, and academics. The sample included teachers currently teaching in an elementary mainstream classroom.

Parameters were established through an online survey to determine eligibility. Both, first-year teachers and teachers with more than one year of teaching experience were given the *Teacher Self-Efficacy Scale* [32] and a personal teaching demographics questionnaire. The survey determined teachers' self-efficacy about DI and provided the researcher with the years of experience data for comparison. Teachers were also given the *Reflecting on Practices for Differentiating Instruction in Response to Learner Need* [6], to measure the frequency DI was implemented in the classrooms. The *Teacher Self-Efficacy Scale* [32] scored teachers on their efficacy regarding instructional practices and willingness to apply DI. Data was collected from an online Qualtrics survey and analyzed to compare the significant differences between first year teachers and teachers with more than one-year of experience regarding their self-efficacy about DI and the frequency DI was implemented.

1.4. Research Questions

The independent variables for the study were categorized as first-year teachers and teachers with more than one year of experience. The dependent variables were teachers' self-efficacy about DI and the frequency DI was implemented. The dependent variables were coded with an interval scale and the independent variable was coded with a ratio scale. First year teachers received a score of 1, teachers with more than one-year of experience were scored with a 2, and individuals working in the school, but were not active teachers were scored with 3. A score of 3 disqualified anyone from participating in the surveys. Teachers from each category received a mean score from 1-5 for both self-efficacy about DI and for frequency DI was implemented. The hypotheses were based on research, including data obtained from the SCT [1].

Q1. What is the difference in teachers' self-efficacy about DI and frequency DI is implemented between first-year teachers and teachers with more than one year of experience?

Hypotheses

H1₀. There is a difference in first year teachers' self-efficacy about DI and teachers' self-efficacy with more than one-year of experience and the frequency DI is implemented.

H1_a. There is not a difference in teachers' self-efficacy about DI and teachers' self-efficacy with more than one-year of experience and the frequency DI is implemented.

1.5. Nature of the Study

This study used a quantitative, causal comparative investigation. This methodology was appropriate because it allowed the researcher to determine if there was a statistically significant difference between first-year teachers' self-efficacy about DI and teachers' self-efficacy with more than one-year of experience and the frequency teachers implement DI. The purpose of this quantitative, causal comparative study was to investigate if there was a difference between first year teachers' self-efficacy about DI and the frequency DI was implemented in their classroom compared to teachers with more than one year of experience. To achieve this purpose, the researcher compared self-reported surveys from participants to determine participants with one-year of experience and teachers with more than one-year of experience, self-efficacy about DI, and the frequency DI was implemented in their classrooms.

Causal comparative research with surveys was the most appropriate method for this investigation because the researcher could identify any significant differences for self-efficacy about DI and implementation of DI between first year teachers and teachers with more than one year of experience. The surveys were anonymously collected by using an anonymous online survey. The use of surveys was selected because participants' responses are believed to be more honest compared to interviews or other one-on-one research methods [5]. Encryptions were enabled on the principle investigator's computer, so it was not possible to identify any of the participants. The two surveys and the demographic questionnaire were embedded into one survey. Qualtrics was the software the surveys were developed from. Qualtrics screened participants through demographic questions. If a participant was ineligible, the survey went to the end. Surveys allow for rapid response and with the sample size used in this study it was necessary for the turnaround time to be quick. In addition to being time appropriate, the surveys were aligned with the purpose. Teachers self-reported their efficacy about DI and the frequency DI was implemented.

Power tests were conducted to estimate the sample size needed to reject the null hypothesis. Results of the power tests indicated the sample needed to be a minimum of 40-45 for each group studied to obtain a power of .80. The study included a sample size of 45 first year teachers and 52 teachers with more than one year of experience. This study obtained information from a total of 97 first through fifth grade teacher participants. A sample size of 97 allowed the confidence interval to be 10 and the confidence level to be 95% [20]. With a 95% confidence interval, the alpha level was .05 for the study. The participants were randomly selected from two southwest Oklahoma school districts. All teachers currently working at the selected school sites in southwest Oklahoma were offered the survey. Participants

qualified if they were considered mainstream first through fifth grade teachers. Mainstream is a teaching term that refers to teachers working in mixed-ability classrooms to teach a range of subjects [30]. The demographic questions identified qualifying participants by asking criteria questions. One group was teachers working in their first-year and the other group was teachers working with more than one-year of experience.

The dependent variables in this study were self-efficacy about DI and the frequency DI was implemented. The independent variables were first-year teachers and teachers with more than one-year of experience. Carol Tomlinson is a leading researcher in DI and developed the survey, *Reflecting on Practices for Differentiating Instruction in Response to Learner Need* [6] to identify teachers' frequency to implement DI for readiness levels, learning styles, student interest, diverse assessments, and flexible groups. The *Teachers' Self-Efficacy* scale measures teachers' self-efficacy about teaching in the classroom. This study used the *Teacher's Sense of Efficacy scale* [32]. There were three demographic questions, which identified the participants' years of experience in the profession, grade level, and subjects taught.

A quantitative, causal comparative investigation allowed the researcher to determine if there was a difference with first year teachers' self-efficacy about DI and teachers' self-efficacy about DI with more than one year of experience and the frequency DI was implemented. Self-efficacy has been linked to teachers' willingness to implement a variety of materials, use innovative approaches, and find better ways to teach [7]. Research has revealed not all teachers are implementing DI in the classroom [7 & 8]. Based on this research, it was hypothesized there was a difference in self-efficacy about DI for first-year teachers and teachers with more than one-year of experience in the frequency DI was implemented. By investigating if first year teachers or teachers with more than one year of experience were more likely to implement DI, researchers and educators will gain a better understanding on how to improve either teacher preparation programs for first-year teachers or professional trainings/mentorships for teachers with more than one-year of experience.

2. Discussion

2.1. Theoretical Framework for Differentiated Instruction

The framework for DI is based on three different learning theories [30]. Vygotsky's (1934/1986) ZPD theory is derived by the understanding students learn when they are taught to their individual readiness level. The learning style's theory is constructed by the learner's ability to retain information when instruction is presented to the learner's multiple intelligence. Interest theory suggests when instruction is taught with moderate challenge and strategies engage the learner to the preferred learning style, interest will occur [30]. Each theory adds separate components to DI, while

empowering each theory at the same time. When instruction is taught to the students' ZPD, interest is piqued. The same is true when students learn through their desired learning style [30]. When instruction is taught to the students' interest, there is a desire to apply effort from the student. Students are more likely to stretch their readiness level when there is a sincere interest for learning [30].

2.2. Zone of Proximal Development Theory

A critical aspect of DI is teaching to the individual's ability level. Teich, (2020) investigated the role ZPD theory had when it came to achievement in students. The findings concluded the students receiving the scaffold learning experience had significantly higher gains [10]. Achievement is directly related to students receiving moderate challenge. This can be conducted when the teacher implements DI because instruction is presented in small groups. The students are engaged when instruction is personal [13]. Eun (2019) revealed students not only had academic gains when instruction was presented in small settings, but relationships were heightened.

Vygotsky's (1934/1986) ZPD theory addressed how children learn through a scaffold approach [23]. Gains occur because instruction is taught to the individual learner's needs and ability levels; rather than focusing on the individual's age. If a learner only works at their age level, academic growth will not occur [9]. This is because the learner will not be challenged. The role of the teacher is to reflect on the ZPD and incorporate slightly more challenging content. This scaffold approach will allow the learner to make academic gains [8]. The ZPD theory is a social theory. Success for the learner occurs when the teacher considers the academic abilities of their students and becomes the "scaffolder" by creating slightly more challenging tasks [23].

2.3. Learning Style's Theories

Gardner's (1999) multiple intelligence theory is constructed from learning styles' theories. The multiple intelligence theory includes nine intelligences in which learners are grouped: 1) visual, 2) verbal, 3) kinesthetic, 4) logical, 5) musical, 6) intrapersonal, 7) interpersonal, 8) auditoria, 9) naturalistic. Multiple intelligence theory defines "smart" as not only academic achievement scores, but in any of the nine categories [23]. For example, a math genius may be gifted with formulating equations, but cannot verbally explain how to apply the formulas. While another person may be able to explain how the formula is applied, but struggles in the logistics of the problems.

Multiple intelligence theory provides a new understanding of intellects. This is relevant since intellect quotient (IQ) tests only identify logical and linguistic intellects. IQ tests alone cannot reveal true intelligence [9]. However, multiple intelligence theory allows the teacher to identify the learner's true learning strength. When the teacher is aware of the strengths within the classroom, instructional plans can be made to improve the students even further. Students achieve

academic success when teaching diverse instruction [25]. This is because the learner is presented information that is individualized to their needs.

2.4. Interest Theory

Motivation for learning affects academic success. Even if the teacher creates lessons that are to the students' ZPD, the student must have an intrinsic desire to perform [11]. Kosovic et. al., (2017) developed an expectancy-value model based on the interest theory framework. The model is divided into three parts: 1) students feel they can be successful with a learning task, 2) the task is meaningful, and 3) the learning environment is conducive to their needs. Each of these components is vital to increasing student motivation [17].

The components of the expectancy-value model are aligned with the process, content, and products of the DI model [30]. Teachers need to present the information to allow the students to feel successful about the learning. This is done when instruction is presented to the learners' ZPD. The content should be made meaningful to the learner through various instructional approaches. By allowing the learner to present a range of products for assessment, the teacher is creating an environment conducive to the learner's needs [30].

The framework of DI is the combination of learning theories working together. Learning occurs because students are taught to their level of understanding and are provided a choice [13]. The choice enhances the motivation because the students are personally interested when offered a personal option in the learning [18]. For example, a teacher is instructing on fluency and provides multiple pathways to learning by providing the students with a choice of listening to a recorded text, buddy read, independent read, or poetry read. All students achieve the learning objective of fluency through the different approaches. By offering the students choice, the students' motivation for learning and interest will be piqued [17].

3. The Differentiated Instruction Model

According to Tomlinson (2020), a teacher in a DI classroom will make regular effort for the needs of students. The teacher is led by the feedback received from students when the teacher is facilitating learning. The instruction is modified based on the students' responses during the instruction. To do this, the teacher must remain flexible throughout the instructional process and be willing to move the content levels according to the students' readiness, interest, and learning styles. Successful implementation of DI is done only when the teacher has a range of instructional and management strategies.

There are clear differences between traditional learning and DI. Per Lai et. al. (2020) the traditional curriculum is not going to meet the needs of diverse learners because teachers use a one-size-fits-all method. Traditional curriculum can be a problem for the learners since learning occurs through individual pathways [19]. The learner's learning style is not

considered in the traditional classroom. In the traditional curriculum, teachers tell students information as opposed to having students explore information. The teacher is the expert of content in the traditional classroom. The students are passive listeners as the teacher informs the students of the content. The teacher and students in the DI classroom are active. The teacher supports inquiry learning from students by implementing diverse strategies [19].

In the DI classroom, the students are actively involved in multiple learning settings, often referred to as flexible groups. All students in the classroom are learning the same academic objective, but are taught through different instructional strategies to achieve the objective. When students are working in flexible groups, the teacher is able to individualize instruction to small groups' and individual students' needs. Students are able to progress on their needed skills, while working with different types of text and learning activities within the small groups. Teachers can differentiate through content, process, and product [35].

3.1. Content

Content is what the students need to learn. It is the knowledge the students need to receive through the instruction [30]. All students in the classroom typically need to achieve the same content. With the diversities of learning, not all children are able to process information the same way [35]. Teachers implementing DI recognize the diversities within the classroom and are comfortable with using a range of strategies to teach the same content objective.

The content can be perceived as the overarching goal of learning. There are many ways to reach the goal within the classroom. In the DI classroom, the teacher considers diverse learning approaches when presenting the content; therefore, the teacher uses different instructional methods to teach the content. The teacher continually monitors the class by using flexible groups, hands-on activities, and group discussions [31]. If teachers are not confident at implementing instructional strategies, the class will only implement pieces of DI or none [2].

A teacher begins to implement DI by creating informed decisions in the classroom [30]. This is an ongoing process for the teacher and the learners. Teachers determine objectives based on the previous day's assessments and students' responses. As students engage in the learning, the teacher questions the students to observe progress of the learning. Decisions are made based on the students' responses [31].

Jitendra et. al., (2019) defines the goal of learning as getting students to access prior memories and efficiently storing new learning moments. For each student, this retrieval and storage process will be different because each student has their own ability level and intelligence. As teachers make decisions about content, it is essential to consider the students' background knowledge diversities [14]. When teachers provide students with diverse learning style activities, students can retain the information [3].

3.2. Process

The process of learning includes the activities the teacher instructs with to teach the content objective. Each activity is aligned with the objective. The activities can be differentiated to engage or motivate the learners to achieve the content. Some ways teachers may do this is by reflecting on the students' ZPD and allowing students to work in flexible groups [24]. The process of the DI model is individualizing learning for students. With the range of diversities in the classroom, teachers need to use flexible groups and teach to the students' ZPD. Hill (2020) demonstrated the effect to the students' ZPD had on academic achievement when students were provided choice of text. Students improved academically and were more motivated for the subject when they were taught in their ZPD [12].

Learning occurs because students are taught to their understanding and are provided a choice [9]. For example, a teacher is instructing on fluency and provides multiple pathways to learning by providing the students with a choice of listening to a recorded text, buddy read, independent read, or poetry read. The teacher can facilitate the learners in the centers and challenge each student, despite the range of learning activities simultaneously occurring in the classroom. The result of this learning experience will be higher achievement and interested learners [12 & 9].

Instruction with DI is necessary for today's classroom because teachers are able to provide an equal opportunity for all diversities in the classroom [30]. Students bring different culture, social, and academic experiences to the classroom. The educator paces and directs instruction based on the individual learner's schema [15]. Schema is described as adding moments to the learner which can connect to the learner's previous moments [15]. If the teacher does not activate the students' prior knowledge, true comprehension will not occur [15].

Bendici (2020) strengthened schemata theory by researching the effects between learning and prior experiences with the topic of study. The findings were based on an experimental study. Surveys were used to identify the students' prior knowledge on reading topics. The follow-up survey concluded students lacking prior knowledge on the topic were likely to mind-wander [3]. Schemata theory assists in understanding why students have academic achievement when instruction is taught to their interest or learning style. Students' minds are engaged on the topic; therefore, learning is a natural occurrence.

The process of learning with the DI model suggests teachers reflect on the individual needs and incorporate approaches for learning based on those needs [4]. The DI classroom should have students engaged in discussions, questions, and groups to optimize the inquiry process. Teachers that created learning experiences for students had higher learning outcomes [16]. In addition, the teacher felt confident through this method of instruction because their students achieved. When the student achievement began to increase, the teachers became more confident with their

active learning approaches [16].

3.3. Products

Products are the tools of assessment. If the student is not engaged into the process, the students may not provide accurate data or responses on the products. It is important for teachers to provide students with a range of authentic products, since assessments guide the instruction. Accurate data is essential for effective instruction; therefore, the products need to be interesting for the students. Bendici (2020) concluded students will "mind wander" if learning is not made interesting and meaningful. Mind wandering can lead to inaccurate assessments because the students are not interested in the content. In DI, teachers use checkpoints and questions to progress monitor the students [31]. To avoid mind wandering, the teacher should select content that is based on prior knowledge. Students will be motivated to learn when the instruction is presented at their readiness level [30].

Reflection is an active role for the classroom teacher (York-Barr et al., 2016). Once the teacher learns how to pause and facilitate learning, the teacher can obtain assessments through observations. Facilitations and observations are key strategies teachers use to gather data. The students are the center of the classroom. Students become motivated through inquiry learning and active involvement [4]. Assessments drive the instruction, not the lesson plan book created by the teacher. The teacher continually reflects before, during, and after the lesson to determine the pace and direction of the learning objectives. The teacher maintains flexibility and is open to new ideas for enhancing the learning environment [9].

Effective teachers continually monitor students and make adjustments based on students' needs. The teacher is aware of students' interests and learning styles when developing lessons. All students are engaged throughout the learning experience [35]. According to Ziernwal et. al. (2022), the DI model for teaching diverse learners begins by assessing all students to know their individual needs. The teacher creates groups and aligns instruction based on the learning objective to ensure all students are appropriately challenged.

There is not an exact formula for the implementation of DI, but there are key ideas to implement which will meet the needs of all diversities [30]. Assessments are the cornerstone of the instructional process. Lessons need to be reflected on the students' prior abilities. Students have diverse readiness levels; therefore, teachers need to be mindful of the actual abilities of their students [24]. One essential part of gathering accurate data is by utilizing authentic assessments. Authentic assessments are motivating for students because the students can engage in their diverse learning styles. An example of authentic assessments could be projects or presentations instead of tests.

3.4. Flexible Groupings

Individualizing instructional formats are a key component of student achievement. Reis et al. (2011) revealed students

improve in reading to a significant level when instruction was presented to cooperative groups of students. The students engaged in book talks and interactive literacy activities within small groups. Reading achievement was contributed to the social interactions from peers and the teacher as well as content being leveled to their needs. Active involvement enhances the learning [4]. It is suggested in the DI model for teachers to engage learners socially [30].

The classroom should be active. The students will be asked the questions throughout the lesson; rather than the teacher asking the students questions. An example of how this will be implemented is having the students involved in inquiry learning to discover outcomes, while the teacher's role will be a facilitator. Students will be guided to success instead of told information. Integration with curriculum is an example of how teachers can actively engage students meta-cognitively into the learning. Integration allows teachers to diversify text, content, and interests into each lesson. One instructional approach Tomlinson (2015) suggested is thematic units. Thematic units stretch the students' ZPD and interest levels. The use of themes allows the teacher to integrate multiple subjects into each lesson. Integrating themes challenge students to use their current knowledge in other subject areas to make academic gains in another [19]. Students learn how the subjects connect, instead of viewing learning as individual objectives. In addition to academic achievement, students have increased motivation for the learning process [19].

In the DI classroom, teachers use small groups to teach different learning styles [24]. For example, kinesthetic learners will work in a group which offers hands-on learning, while other groups may challenge students with discussions, texts, or academic projects. According to Clark et. al. (2021), cooperative group learning allowed time for the teacher to work with students' individual needs. Students received the process of instruction in their ZPD, content was delivered to the students' interests, and the grouping options allowed students to learn in different pathways. Connor et al. revealed significant predictions for future learning can be made based on the interactions of instructional time and the type of learning formats students received [4].

Students perform higher when instruction is individualized in small settings. Bendici (2020) measured how the classroom environment effects academic achievement in early childhood education. The findings concluded individuals achieve higher when instruction is presented to small groups. Students improved in each format when the teacher interacted with the student. Interactions were more likely to occur when instruction was presented to small groups [3].

The students must be in academic engagement in order for learning to occur [17]. Flexible groups are an instructional strategy that allows students to maintain academic engagement [3]. Students are able to make progress through choice because the brain processes knowledge in different ways [4]. When the teacher only considers the students' ZPD when instructing, learning may not be retained because the student is not intrinsically engaged [17]. Retention happens for learners when information is presented to the individual's

learning style. By providing diverse instruction or choices for learning, the individual will be able to learn at their ability level and retain the information.

4. Methodology

Causal comparative research with surveys was the most appropriate method for this investigation because the researcher could identify any significant differences for self-efficacy about DI and implementation of DI between first year teachers and teachers with more than one year of experience. The surveys were anonymously collected by using an anonymous online survey. The use of surveys was selected because participants' responses are believed to be more honest compared to interviews or other one-on-one research methods [25]. The two surveys and the demographic questionnaire were embedded into one survey. Qualtrics was the software the surveys were developed from. Qualtrics screened participants through demographic questions. If a participant was ineligible, the survey went to the end. Surveys allow for rapid response and with the sample size used in this study it was necessary for the turnaround time to be quick. In addition to being time appropriate, the surveys were aligned with the purpose. Teachers self-reported their efficacy about DI and the frequency DI was implemented.

Power tests were conducted to estimate the sample size needed to reject the null hypothesis. Results of the power tests indicated the sample needed to be a minimum of 40-45 for each group studied to obtain a power of .80. The study included a sample size of 45 first year teachers and 52 teachers with more than one year of experience. This study obtained information from a total of 97 first through fifth grade teacher participants. A sample size of 97 allowed the confidence interval to be 10 and the confidence level to be 95% [9]. With a 95% confidence interval, the alpha level was .05 for the study. The participants were randomly selected from two southwest Oklahoma school districts. All teachers currently working at the selected school sites in southwest Oklahoma were offered the survey. Participants qualified if they were considered mainstream first through fifth grade teachers. Mainstream is a teaching term that refers to teachers working in mixed-ability classrooms to teach a range of subjects [30]. The demographic questions identified qualifying participants by asking criteria questions. One group was teachers working in their first-year and the other group was teachers working with more than one-year of experience.

The dependent variables in this study were self-efficacy about DI and the frequency DI was implemented. The independent variables were first-year teachers and teachers with more than one-year of experience. Carol Tomlinson is a leading researcher in DI and developed the survey, *Reflecting on Practices for Differentiating Instruction in Response to Learner Need* [26] to identify teachers' frequency to implement DI for readiness levels, learning styles, student interest, diverse assessments, and flexible groups. The

Teachers' Self-Efficacy scale measures teachers' self-efficacy about teaching in the classroom. This study used the *Teacher's Sense of Efficacy scale* [32]. There were three demographic questions, which identified the participants' years of experience in the profession, grade level, and subjects taught.

A quantitative, causal comparative investigation allowed the researcher to determine if there was a difference with first year teachers' self-efficacy about DI and teachers' self-efficacy about DI with more than one year of experience and the frequency DI was implemented. Self-efficacy has been linked to teachers' willingness to implement a variety of materials, use innovative approaches, and find better ways to teach [7]. Research has revealed not all teachers are implementing DI in the classroom [5, 6]. Based on this research, it was hypothesized there was a difference in self-efficacy about DI for first-year teachers and teachers with more than one-year of experience in the frequency DI was implemented. By investigating if first year teachers or teachers with more than one year of experience were more likely to implement DI, researchers and educators will gain a better understanding on how to improve either teacher preparation programs for first-year teachers or professional trainings/mentorships for teachers with more than one-year of experience.

4.1. Findings

The findings revealed there was a significant difference between first year teachers and teachers with more than one year of experience for self-efficacy and for implementation of DI. The hypothesis was: H1₀. There is a difference in first year teachers' self-efficacy about DI and teachers' self-efficacy with more than one year of experience and the frequency DI is implemented. The alternative hypothesis was: H1_a. There is not a difference in teachers' self-efficacy about DI and teachers' self-efficacy with more than one year of experience and the frequency DI is implemented. The null hypothesis was rejected and the hypothesis was accepted based on the findings.

A quantitative, causal comparative investigation allowed the researcher to determine if there was a difference between self-efficacy and frequency DI was implemented between first year teachers and teachers with more than one year of experience. Self-efficacy has been linked to teachers' willingness to implement a variety of materials, use innovative approaches, and find better ways to teach [7]. Research has revealed not all teachers are implementing DI in the classroom [5, 6]. Based on this research, it was hypothesized there was a statistical significant difference in self-efficacy and frequency DI was implemented between first-year teachers and teachers with more than one-year of experience. By investigating which type of teacher, first-year teachers and teachers with more than one year of experience, were more likely to implement DI, researchers gained a better understanding on how to improve either teacher preparation programs for first-year teachers or professional

trainings/mentorships for teachers with more than one-year of experience.

4.2. Significance of the Study

This study was significant to the field of education because DI is an effective instructional framework for all grade levels, subjects, and learners [30]. However, many teachers are not implementing DI [8]. This study was an important first step in understanding who was likely to implement DI in the classroom due to conflicting responses [2, 11]. It was important to reveal if years of experience in the teaching profession and/or self-efficacy contribute to the implementation of DI. According to Bedir (2015), first year teachers are not as likely to implement DI compared to teachers with experience because they are not taught how in teacher preparation programs. On the contrary, according to Patall (2013), the less years of experience a teacher has, the more likely the teacher will embrace instructional challenges [22]. These variables assisted in identifying the type of teacher willing to embrace the DI framework. Ultimately, all teachers need to be successfully implementing DI [30].

5. Conclusion

The purpose of this quantitative, causal comparative study was to investigate if there was a difference between first year and more than one year of experience teachers' self-efficacy about DI and the frequency teachers implement DI in their classroom. It was necessary to compare first year teachers and teachers with more than one year of experience to learn the type of teacher who was likely to embrace the DI framework [5, 14].

Dixon et al. (2014) revealed teachers across all grade levels and subjects have difficulties with understanding various components of DI. Ruys, et al. (2013) stated first year teachers will have high efficacy about DI if teacher education trainings included DI in the preparation program. Other research indicates first year teachers are more likely to not embrace the DI framework due to low self-efficacy about teaching [7]. Based on the conflicting research on first-year teachers, it was necessary to investigate if there was a difference in first year teachers' self-efficacy about DI and teachers' self-efficacy with more than one-year of experience and the frequency DI was implemented.

The findings from this study revealed first year teachers are significantly less likely to implement DI due to low self-efficacy levels compared to teachers with more than one year of experience. These results assist the field of education now that the type of teacher has been identified. Teacher preparation programs can evaluate this study to determine changes that need to occur in the program to boost first year teachers' self-efficacy about DI. Changes that could be considered for improving first year teachers is instructional practices within the teacher preparation program. During student-teaching, classrooms and mentors should be carefully sought out prior to the student-teacher attending student-teaching. Based on these findings, teacher

preparation programs can instruct teaching theories by using the DI model. Pre-service teachers need to observe and participate in the DI model in order to learn how to differentiate instruction [30]. In addition to modeling the DI model, teacher preparation programs should allow pre-service teachers to practice differentiating instruction. This will improve the pre-service teachers' efficacy before entering into the first year of teaching. It was important to reveal if years of experience in the teaching profession and/or self-efficacy contribute to the implementation of DI. These variables assisted in identifying the type of teacher willing to embrace the DI framework. The goal is to have all teachers successfully implementing DI [30].

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