

Universal Design for Learning as a Method for an Inclusive Classroom:
A Meta-Synthesis

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Abstract

The movement for students with special education needs to have access to the general education curriculum, to be educated with nondisabled peers, and to learn in the least restrictive environment has been ongoing and continues to be an issue in education today. Although past and current education laws support and encourage the inclusion of students with special education needs, many states and school districts still struggle to move to inclusion models, reform the school system, and provide appropriate support and training to teachers on best practices for teaching in an inclusive setting. This meta-synthesis looks at one possible model as an effective method for implementing inclusion. The model being considered and analyzed is known as Universal Design for Learning (UDL).

1. Introduction

1.1 Background

Research of more than 30 years supports the benefits of inclusion for both students with and without disabilities (Morningstar, Shogren, Lee, & Born, 2015). Obiakor (2012) notes that there are times when placement in the general education classroom does not improve academics for either the special education student or the general education student. Nevertheless, there is a strong movement to push for full inclusion for special education students. To understand the push for inclusion, it is important to first look at the history of education law. One of the first movements towards equality in education came during the Civil Rights Movement with *Brown vs. Board of Education* in 1954 (Kirby, 2016). The results of this case determined that students with disabilities should have the same access to public education as non-disabled peers. Before this ruling, students with disabilities were excluded from schools based on the fear that it would harm and be a distraction to both non-disabled peers and teachers. In 1975, Congress passed PL-94-142 titled the Education for All Handicapped Children Act. This law guaranteed that students with disabilities are allowed an appropriate education based on their individual needs (Scott, 2017). Inclusion was to mean more than just placement and being physically present in a school. This resulted in the learning needs of students with disabilities to be assessed and acknowledged by creating individualized education programs. The intent is that these needs would be met in the least restrictive environment (LRE) with the goal that these students be educated in the general education classroom as much as possible so that they remain with their peers. Kirby (2016) explains, ‘the implicit assumption was that special education was a service,

not a place. If special education would have a place it would be within the general education classroom” (p.179).

Education law continued to make changes to emphasize the importance of inclusion as advocates expressed concern that students with disabilities were still excluded from the general education curriculum. The Individuals with Disability Education Act of 2004 (IDEA, 2004) focused on the need for students with disabilities to have access to the general education curriculum and the same assessments as students without disabilities (Ghandi, 2007). IDEA also stressed the importance of LRE and FAPE (Free and Appropriate Public Education) (Kirby, 2016). Kirby (2016) provides a clear summary of IDEA.

The language of IDEA promotes inclusion and consequently a commitment to the destruction of barriers placed by exclusionary practices. When students are afforded an appropriate education with their peers in the least restrictive environment they are being prepared for a future of inclusion. Both concepts, LRE and FAPE, are the cornerstones for placement in special education. Policy makers saw the importance of including students with learning disabilities in the general education classrooms and crafted policy to promote these practices. (p.179)

The most recent education law passed in 2015 is Every Student Succeeds Act (ESSA). ESSA requires states devote part of education funds to create personalized learning experiences using technology (Scott, Thoma, Puglia, Temple, & D’Aguilar, 2017). ESSA also requires schools to utilize evidence-based instruction to assist learners with diverse needs (Samuels, 2016).

Despite education laws calling for inclusion and for students with disabilities to have access to the general education curriculum, there is much debate as to what inclusion actually looks like, the true meaning of least restrictive environment (LRE), and what the best practices and methods are for implementing inclusion. Ghandi (2007) notes that there is no legal definition for inclusion and that there is lack of agreement as to what it means. Education law and the regulations for implementing the law do not provide any guidelines for how schools are to define and implement LRE. (Yell, 1995). The theory of inclusion continues to be a debate as to its definition and how best to implement it.

There are different levels of inclusion and placement variations. There is full inclusion where students with learning disabilities remain in the general education classroom for the entire day, partial inclusion where students are pulled to a separate resource room for explicit instruction in the area of need as noted on Individual Education Plans (IEP), and finally students with severe disabilities that are contained in a separate classroom without any exposure to the general education classroom. The definition and implementation of inclusion varies between states. Many states define inclusion as students with disabilities spending more than 80% of the school day in the general education setting. (Baglieri, et al., 2011 as cited by Dudley-Marling & Burns, 2014). The percentage of students with learning disabilities spending 80% or more of their day in the general education setting varies between states; it ranges from a low of 3.9% in Hawaii to a high of 56.9% in Iowa (Ryndak et al., 2014).

The goal of all schools and educators is to see their students succeed. Full inclusion of students with disabilities is a vision that has been in the making since the beginning of civil rights. Proponents argue for full inclusion as a civil and social right. They advise that the school

system should be reformed and instruction methods should meet the needs and learning styles of all students in the general education classroom. Opponents express concern for lack of training, resources, collaboration, and the impact of inclusion on non-disabled students. Furthermore, they worry that students with disabilities will not get the necessary intervention they need in the general education setting.

Although these are lofty concerns and restructuring school systems will take time and legislation, there is a model of instruction that can assist teachers in an inclusive classroom and meet the needs and learning styles of all students. Universal Design for Learning (UDL) is one approach that is considered when looking to implement full inclusion for students with disabilities. This touches on one of the aspects of school reform and ESSA; to provide effective teaching strategies that address all learning styles while meeting the needs, accommodations, and objectives for students with special education needs. UDL pedagogy allows students differentiation in learning.

In effect, the learning endpoint goals stay the same, and it is the ways that student get to that endpoint of learning that is made more diverse.

In this way, each student is challenged to learn to his or her own capacity, and is challenged through both multi-level authentic instruction and assessment. (Katz & Sokal, 2016, p.41)

Sailor (2015) describes UDL as an important and recent advance in providing such differentiation in instruction. The concept of UDL stems from architectural design of buildings and structures that enable all people with varying degrees of physical and cognitive needs to access them (Courey et al., 2012). The Center for Applied Special Technologies (CAST) from

Rose and associates adapted this idea of adaptability for all into education (Sailor, 2015). The founders of UDL from CAST explain that UDL is based from brain research and focuses on three principles. They are engagement, representation, and expression. Students should be provided different means to access additional information (small group, whole group discussion, teacher led discussion, etc.), numerous ways of using new information and be allowed to show in diverse ways what they have learned (showing a PowerPoint demonstration, performing a skit, writing an essay, etc.). Sailor (2015) explores the idea that using UDL will help guide educators back to providing instruction that is relative and connected to assessment. -” We raise the potential to assess learning outcomes during instruction rather than quarterly and year-end, grade-level tests” (Sailor, 2015, p.95). UDL helps teachers instruct with differentiation and provide appropriate assessments making inclusion a possibility.

1.2 Author's beliefs and experiences

My concern in creating a classroom where all students have equal access and opportunities to the general education curriculum and to be educated with their peers is not new to me. Only recently am I able to attach the idea of inclusivity and universal design for learning to this concern. My interest in inclusivity not only grew from my teaching experiences, but also from my personal experiences with my son.

Born with FASD (Fetal Alcohol Spectrum Disorder), my son has been diagnosed with many labels, such as, ODD, ADHD, and even bipolar level 2. For him, this means he lacks coping skills, is easily frustrated and overwhelmed, especially in large groups or noisy environments, and requires extra time for processing new information. What this translates to in

the classroom is behavior problems. Between kindergarten and 8th grade, my son has attended 5 different schools.

My son began kindergarten at our neighborhood school. About 7 weeks into the school year, I dreaded seeing the school phone number appear on my phone. I knew it would be another report about my son and his behavior. I have sat through many meetings and phone calls with teachers and administrators on how best to help my son. A common occurrence was always teachers' lack of willingness to accommodate him, lack of understanding about FASD, and the preferred response to move him out of the classroom. I wanted my youngest son to attend the same immersion school as his older brothers. During the transition meeting from preschool to kindergarten, the teacher refused to have my son in his classroom. Before even meeting my son, he was rejecting him.

Eventually my son spent two years at Mount Iliamna, a school for children with severe behavior issues. After that, he spent two years in a transition classroom to help him move back into the general education classroom. He did eventually move back into the general education classroom, but still had frequent visits to the principal and many phone calls home. The common theme was Adam's refusal to do his work. Adam also told me he did not like leaving his classroom to go to special education classes, like study skills. He said he didn't think it fair that he could not take an elective like his peers, but had to attend study skills.

I question if teachers and the school had strived for true inclusion with the use of UDL (Universal Design for Learning) if my son would have been more willing to do the assignments. Giving my son choices would have been beneficial to him. For example, my son has never cared for writing. I remember one assignment that he always avoided. Every morning a poem or

famous statement was written on the board. The students were to write one or two sentences about what they thought of it, and try to make some kind of connection to the statement. Adam did not like writing and refused to do it. I requested that he be able to tell the teacher or speak into a recording device. There was a lot of resistance from the teacher.

Before teaching special education, I was a general education teacher. I taught German in an immersion school. I had a few students that needed to be pulled for resource. As a general education teacher, I was concerned about the instruction my students would miss. At the time, I did not know I could have requested my students have assistance in the classroom instead of being pulled. I also did not have the skills I do now to implement UDL or small group instruction. Lack of training is an issue. I think with professional development or training, I would have felt more confident keeping my resource students in the classroom.

In addition to my personal experience with my son and as a general education teacher, my teaching experience as a special education teacher has also sparked my interest on how best to create an inclusive classroom. My first year as a special education teacher, I worked at a school that prided itself for inclusion. I soon found out that inclusion meant placing all of the special education students and low scoring students (based on grades, school assessments, and state assessments) into one classroom. These students knew that they were lumped into such a group. I overheard comments from students expressing the dislike of being in the classroom. One student was very upset that she could not have the same teacher as her sister. Without discussion or choices, she was automatically placed in the class. My concern for these students is that they did not have peer role models, and that the expectations were set low for them.

Furthermore, I have had students that resisted coming to my classroom. Typically these are older students. They are reluctant to participate, do assignments, and at times exhibit negative behaviors. I often heard them ask if they really needed to go or ask why they couldn't stay in the classroom. This year I am working with a second grader who is very motivated and enjoys coming to my resource room. However, he still expresses concerns about missing activities in the classroom. Sometimes his peers will ask him where he is going and why he gets to leave.

Classroom teachers are also reluctant to make the necessary accommodations for students with learning disabilities. They complain that there isn't time to assist the special needs of a few students when they have a classroom of 25 plus students. I have often walked into a classroom during math, science, and/or social studies lesson to see my resource students not engaged in the lesson or perhaps working on a different lesson, independent work, or sitting in the back of the classroom. When talking to my co-workers about the idea of inclusion, they are open to the idea for those students in the high incident category, but express how it could possibly work with severe disabilities. They express concern that students with such severe needs and aid could cause a distraction to the classroom and hinder the learning of the other students.

Last year, I had three students in the fourth grade with math IEP goals. I made the decision to not pull the students to the resource room, and to not do an alternative math curriculum at a slower pace. Instead, I assisted them in the classroom. This allowed them to remain with their peers and learn the general education math curriculum. The general education teacher was hesitant about this as she was concerned they would not keep up with the class. She also mentioned that she has never had resource students stay in the classroom. My goal and hope

was for them to remain in the classroom so that they could be exposed to the general education curriculum. Depending on the lesson and their understanding, I would do a reteach with them in a small group. This small group consisted of my students and sometimes a couple of other students depending on need. At the end of last year, one student tested out of math. A second student continues to do math in the 5th grade in the classroom with his peers, and a third is on grade level, but being pulled to resource for math. My decision to keep these students in the general education classroom was a positive one. I think by keeping them in the classroom, they were able to remain and learn grade-level math.

This school year there are two third grade students that qualify in reading. I assist them twice a week in the classroom for math as they struggle with the reading portion of math story problems and reading directions. They are being introduced to multiplication. On one assignment, they were learning how to use a multiplication chart and to look for patterns. The chart was a paper copy and at best 2 inches by 2 inches with small print. They were having difficulty matching and aligning the rows and columns to find a product of a problem. After a while they began to mark on it and it became even more difficult to read. I gave each of them a laminated larger 9 x 6 copy of a multiplication chart. The students were able to use a dry erase marker to find the product and it became easier for them to line up the numbers. The teacher stated she would note this as an accommodation. As a teacher, she needs to keep track of all accommodations for data. I understand this as a teacher as well. However, my first thought was to question why the entire class shouldn't have larger charts. If two students were struggling, chances are, others were as well. In an inclusive classroom, perhaps this would be considered the norm and not a special accommodation.

Finally, the recent law, ESSA (Every Student Succeeds Act) is an updated education law to ensure that all students have equal access to education including evidence-based interventions. One of the many aspects of the new law is that schools are required to come up with an evidence-based plan and personalized learning to help the particular group of students who are falling behind, such as minority students or those in special education (Education Week, p17). In order to help meet these requirements, and to also create a comprehensive literacy program, ESSA calls for the use of UDL (Scott, et al., 2017). Today's classrooms, whether officially labeled an inclusive classroom or not, are naturally inclusive as there are always different levels of students and different learning styles. Furthermore, the classroom today is no longer homogenous. There are different socio-economic, ethnic, and cultural backgrounds, English language learners, students with behavior disorders, students with diagnosis, such as ADD (Attention Deficit Disorder), and students in gifted education programs. The reason for discussing UDL is to consider it as an effective teaching method to reach and engage a range of diverse students.

I would like to address the following questions with this meta-synthesis:

1. What are the benefits of UDL for students with disabilities and without disabilities?
2. How can Universal Design for Learning be implemented to create an inclusive classroom?
3. What are some concerns and hesitation of general education teachers of implementing an inclusion model and using UDL?

4. What do special education students and general education students think about UDL and inclusion?

1.3 The purpose of the meta-synthesis

This meta-synthesis focuses on UDL as a method for implementing inclusion in the general education classroom. The intent of this meta-synthesis had several goals. One was to review journal articles related to inclusion. I wanted to know the history of inclusion, the definition of inclusion, and student and teacher beliefs and attitudes about inclusion. Part of this search also involved looking up the history of education law as part of understanding the history of inclusion. A second goal was to review articles related to UDL and the benefits of it for all students with and without disabilities. I also wanted to know teacher and student attitude in regards to UDL. A third goal was to understand how best UDL can be implemented in schools and what resources are needed to do so. A fourth goal was to classify the articles by publication type, to identify the research design, participants, and data sources of each research study, and to summarize the findings of each study. My final goal in completing this meta-synthesis was to identify significant themes in these articles, and to connect the themes to better understand UDL and how it can function as a method of instruction in an inclusive classroom.

2. Methods

2.1 Selection criteria

The 48 articles included in this meta-synthesis met the following selection criteria.

1. The articles explored issues related to education law
2. The articles explored issues related to inclusion
3. The articles explored issues connected to UDL

4. The articles were published in peer reviewed journals related to the field of education
5. The articles were published between 1995-2017

2.2 Search Procedures

Database searches and ancestral searches were conducted to locate articles for this meta-synthesis.

2.2.1 Database searches

I conducted searches within the Educational Resources Information Center using these specific search terms:

1. (“Universal Design for Learning”) AND (implementing).
2. (Inclusion) AND (“Least Restrictive Environment”).
3. (Inclusion) AND (“Universal Design for Learning).
4. (“Teacher attitude”) AND (Inclusion) AND (“Special Education”).
5. (ESSA)
6. (Inclusion) AND (“Universal Design for Learning”) AND (Implementation)
7. (“Student Perceptions”) AND (“Inclusive Classroom”) AND (“Special Education”).
8. (Inclusion) AND (“Negative Impacts”).
9. (General Education Teachers”) AND (Inclusion) AND (Attitude)
10. (“Relationship between Universal Design for Learning and Inclusion”)
11. (“Universal Design for Learning”) AND (Training)
12. (Inclusion) AND (“Teacher Concerns”)
13. (“Universal Design for Learning”) AND (Resources)

14. (Inclusion) AND (Limits)

15. (“Universal Design for Learning”) AND (Assessment)

16. (“Universal Design for Learning”) AND (“Academic Achievement”)

17. (“Common Core Standards”) AND (Inclusion)

Additional research was completed in the Science Direct Database for years 2010-2017

using the following research term:

1. (“Universal Design for Learning”)

These database searches yielded a total of 44 articles (Abawi, 2015; Al-Azawei, Serenelli, & Lundqvist, 2016; Basham, Israel, Graden, Poth, & Winston, 2010; Brand, Favazza, & Dalton, 2012; Charley, 2015; Dalton, Band, 2012; Daniel, 1997; Delaware State Department of Education, 2004; Dessemontet, Bless, 2013; Dudley-Marling, Burns, 2014; Friesen, 2008; Gandhi, 2007; Hartmann, 2015; Hedegaard-Hansen, 2012; Hicks-Monroe, 2011; Idol, 2006; Izzo, 2012; Johnson-Harris & Mundschenk, 2014; Katz, 2013; Katz & Sokal, 2016; Kirby, 2016; Logan & Wimer, 2013; Lowrey, Hollingshead, & Howery, 2017; McGhie-Richmond & Sung, 2013; Morningstar, Shogren, Lee, & Born, 2015; Obiakor, Harris, Mutua, Rotatori, & Algozzine, 2012; Ok, Rao, Bryant, & Mcdougall, 2016; Persson, 2013; Rao, Smith, & Lowrey, 2017; Ryndak, Taub, Jorgensen, Gonsier-Gerdin, Arndt, Sauer, & Allcock, 2014; Sailor, 2016; Samuels, 2016; Scott, Thoma, Puglia, Temple, & Daguilar, 2017; Shogren, Gross, Forber-Pratt, Francis, Satter, Blue-Manning, & Hill, 2015; Skilton-Sylvester, & Slesaransky-Poe, 2009; Smith-Canter, King, Williams, Debbie, & Rhys Myrick Potts, 2017; Sopko, 2009; Spencer, 2011; Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007; Szumski, Smogorzewska, & Karwowski, 2017; Ware, 2016; Worthen, 2016).

2.2.2 Ancestral Searches

An ancestral search involves reviewing the reference lists of previously published works to locate literature relevant to one's topic of interest (Welch, Brownell, & Sheridan, 1999). I conducted ancestral searches using the reference lists of the previously retrieved articles. These ancestral searches yielded four additional articles that met the selection criteria (Coyne, Pisha, Dalton, Zeph, & Cook-Smith, 2010; Hall, Cohen, Vue, & Ganley, 2015; Katz, 2015; Sailor, 2015).

2.3. Coding procedures

I used a coding form to categorize the information presented in each of the 48 articles. This coding was based on: (a) publication type; (b) research design; (c) participants; (d) data sources, and (e) findings of the studies.

2.3.1 Publication types

Each journal article was evaluated and classified according to publication type (e.g., research study, theoretical work, descriptive work, opinion piece/position paper, guide, annotated bibliography, review of the literature). Research studies use a formal research design to gather and/or analyze quantitative and/or qualitative data. Theoretical works use existing literature to analyze, expand, or further define a specific philosophical and/or theoretical assumption. Descriptive articles describe phenomena and experiences, but do not disclose particular methods for obtaining data. Opinion pieces/position papers explain, justify, or recommend a particular course of action based on the author's opinions and/or beliefs. Guides give instructions or advice explaining how practitioners might implement a particular agenda. An annotated bibliography is a list of cited works on a particular topic, followed by a descriptive paragraph describing,

evaluating, or critiquing the source. Reviews of the literature critically analyze the published literature on a topic through summary, classification, and comparison.

2.3.2. Research design

Each empirical study was further classified by research design (i.e., quantitative, qualitative, mixed methods research). Quantitative research utilizes numbers to convey information. Instead of numbers, qualitative research uses language to explore issues and phenomenon. Mixed methods research involves the use of both quantitative and qualitative methods to present information within a single study.

2.3.3. Participants, data sources, and findings

I identified the participants in each study (e.g., students with learning disabilities, teachers of students with and without learning disabilities, parents of students with learning disabilities, students without learning disabilities, pre-service teachers). I also identified the data sources used in each study (e.g., observations, surveys, interviews, and pre and posttests with data analysis). Lastly, I summarized the findings of each study (Table 2).

2.4. Data analysis

I used a modified version of the Stevick-Colaizzi-Keen method previously employed by Duke (2011) and Duke and Ward (2009) to analyze the 48 articles included in this meta-synthesis. Significant statements were first identified within each article. For this meta-synthesis, significant statements were identified as statements that addressed issues related to: (a) the definition and description of UDL; (b) issues, barriers, and concerns with inclusion and UDL; (c) perceptions and attitudes of both students and teachers of inclusion and UDL; (d) implementation of inclusion and UDL, the relation between UDL and inclusion, the Three Block

Model of UDL and whole schooling philosophy; (e) the benefits of UDL and inclusion, and how UDL can be used in an inclusive setting; and (f) ideas for further study. I then generated a list of non-repetitive, verbatim significant statements with paraphrased formulated meanings. These paraphrased formulated meanings represented my interpretation of each significant statement. Lastly, the formulated meanings from all 40 articles were grouped into theme clusters, represented as emergent themes. These emergent themes represented the fundamental elements of the entire body of literature.

3. Results

3.1. Publication Type

I located 48 articles that met my selection criteria. The publication type of each article is located in Table 1. Nineteen of the 48 articles (39.5%) were research studies (Abawi, 2015; Charley, 2015; Coyne et al., 2010; Dessemontet & Bless, 2013; Friesen, 2008; Hall et al., 2014; Katz, 2013; Katz, 2015; Katz & Sokal, 2016; Logan & Wimer, 2013; Lowrey et al., 2017; McGhie-Richmond & Sung, 2013; Morningstar et al., 2015; Persson, 2013; Scott et al., 2017; Shogren et al., 2015; Smith-Canter et al., 2017; Spooner et al., 2007; Ware, 2016). Fifteen of the articles (31.25%) were descriptive works (Basham et al., 2010; Brand et al., 2012; Dalton & Band, 2012; Delaware State Department of Education, 2004; Hartmann, 2015; Izzo, 2012; Johnson-Harris & Mundschenk, 2014; Obiaker et al., 2012; Ok et al., 2016; Rao et al., 2017; Ryndak et al., 2014; Sailor, 2015; Skilton-Sylvester & Slesaransky-Poe, 2009; Sopko, 2009; Worthen, 2016). Twelve of the articles (25%) were review of literature (Al-Azawei et al., 2016; Courey et al., 2012; Daniel, 1997; Dudley-Marling & Burns, 2014; Gandhi, 2007;

Hedegaard-Hansen, 2012; Hicks-Monroe, 2011; Idol, 2006; Kirby, 2016; Sailor, 2016; Spencer, 2011; Szumski et al., 2017). One article was a guide (Samuels, 2016) and one was an opinion paper (Yell, 1995).

Table 1

Author(s) & Year of Publication	Publication Type
Abawi, 2015	Research Study
Al-Azawei, Serenelli, & Lundqvist, 2016	Review of Literature
Basham, Israel, Graden, Poth, & Winston, 2010	Descriptive Work
Brand, Favazza, & Dalton, 2012	Descriptive Work
Charley, 2015	Research Study
Courey, Tappe, Siker, & LePage, 2012	Review of Literature
Coyne, Pisha, Dalton, Zeph, & Smith, 2010	Research Study
Dalton, Band, 2012	Descriptive Work
Daniel, 1997	Review of Literature
Delaware State Department of Education, 2004	Descriptive Work
Dessemontet, Bless, 2013	Research Study
Dudley-Marling, Burns, 2014	Review of Literature
Friesen, 2008	Research Study
Gandhi, 2007	Review of Literature
Hall, Cohen, Vue, & Ganley, 2014	Research Study
Hartmann, 2015	Descriptive Work

Hedegaard-Hansen, 2012	Review of Literature
Hicks-Monroe, 2011	Review of Literature
Idol, 2006	Review of Literature
Izzo, 2012	Descriptive Work
Johnson-Harris & Mundschenk, 2014	Descriptive Work
Katz, 2013	Research Study
Katz, 2015	Research Study
Katz & Sokal, 2016	Research Study
Kirby, 2016	Review of Literature
Logan & Wimer, 2013	Research Study
Lowrey, Hollingshead, & Howery, 2017	Research Study
McGhie-Richmond & Sung, 2013	Research Study
Morningstar, Shogren, Lee, & Born, 2015	Research Study
Obiakor, Harris, Mutua, Rotatori, & Algozzine, 2012	Descriptive Work
Ok, Rao, Bryant, & Mcdougall, 2016	Descriptive Work
Persson, 2013	Research Study
Rao, Smith, & Lowrey, 2017	Descriptive Work
Ryndak et al., 2014	Descriptive Work
Sailor, 2015	Descriptive Work
Sailor, 2016	Review of Literature
Samuels, 2016	Guide
Scott, Thoma, Puglia, Temple, & Daguilar, 2017	Research Study
Shogren et al., 2015	Research Study

Skilton-Sylvester, & Slesaransky-Poe, 2009	Descriptive Work
Smith-Canter, King, Williams, Metcalf, & Rhys Myrick Potts, 2017	Research Study
Sopko, 2009	Descriptive Work
Spencer, 2011	Review of Literature
Spooner, Baker, Harris, Ahlgrim-Delzell, & Browder, 2007	Research Study
Szumski, Smogorzewska, & Karwowski, 2017	Review of Literature
Ware, 2016	Research Study
Worthen, 2016	Descriptive
Yell, 1995	Opinion Paper

3.2 Research design, participants, data sources, and findings of the studies

As noted, I located 19 research studies that met my selection criteria (Abawi, 2015; Charley, 2015; Coyne et al., 2010; Dessemontet & Bless, 2013; Friesen, 2008; Hall et al., 2014; Katz, 2013; Katz, 2015; Katz & Sokal, 2016; Logan & Wimer, 2013; Lowrey et al., 2017; McGhie-Richmond & Sung, 2013; Morningstar et al., 2015; Persson, 2013; Scott et al., 2017; Shogren et al., 2015; Smith-Canter et al., 2017; Spooner et al., 2007; Ware, 2016). The research design, participants, data sources, and findings of each of these studies are identified in Table 2.

Table 2

Authors	Research Design	Participants	Data Sources	Findings
Abawi, 2015	Qualitative	12 teachers, 12	Transcript from	There was an increased

		parents, 10 students, 2 teacher aides, 4 external education staff, Principal, and the Head of the Special Education Program	narratives and data analysis of National Assessments of students in a Junior School (ages 5-12).	growth in student academic achievement even as the number of students with special needs rose. The study looked at the elements of a whole school wide inclusive philosophy that helped create the increase in scores. A main element is the pedagogy of personalized learning. Students are provided with multiple means of expression, engagement, and choice. Teachers are also trained in this pedagogy. Students reported liking the personalized learning and teachers reported more engagement. The decision making on instruction became student-centered.
Charley, 2015	Quantitative	245 general education teachers, 51 special education teachers, from 12 schools (8 elementary, 2 middle, and 2 middle/high schools	Cross-sectional Survey	Teachers' attitudes towards inclusion are affected by their self-efficacy. General educators do not receive regular training in inclusion like special educators and, thus have a lower level of self-efficacy about teaching in an inclusive classroom and are less likely to have a positive attitude about inclusion. An increase in teacher attitude towards inclusion increases the ability to integrate students with disabilities into the classroom. The author contends that increased training in inclusive teaching strategies will increase teacher self -efficacy which

				will result in the proper inclusive teaching methods used in the general education classroom to benefit all students.
Coyne, Pisha, Dalton, Zeph & Smith, 2010	Quantitative	9 teachers of K-2 students, 23 students with significant intellectual disabilities	Students were grouped into and intervention group and a control group to study a UDL structured technology for reading. Data Analysis of pretest and posttest reading performance was completed.	After teachers received training in UDL literacy instruction, student scores in the experimental (intervention) group achieved higher scores in reading comprehension using the <i>Woodcock-Johnson Test of Achievement III</i> . This points to the usefulness and effectiveness of UDL to increase student-reading abilities for this group of students. It should be noted that this is a small data sample.
Dessemontet & Bless, 2014	Quantitative	28 classes: 202 pupils in classrooms with a child that has ID (intellectual disability) and 202 pupils in classes without students with Special Education Needs (SEN) in second-year primary classrooms	A quasi-Experimental study with pretest and posttest in academic achievement/ Analysis of data	There were no major changes in the progress of general ed students when children with intellectual disabilities were included in the general education classroom. The conclusion is that including students with learning disabilities in the gen ed classroom does not negatively impact gen ed students.

<p>Friesen, 2008</p>	<p>Qualitative</p>	<p>One Grade 7 classroom in Canada with mixed ability levels.</p>	<p>Pre and Posttests in Mathematics. Analysis of test results from pre and post UDL instruction.</p>	<p>Changing from standard instruction to UDL instruction in a 7th grade classroom with mixed ability and students with identified disabilities increased improvement in math proficiency in the study of geometry.</p>
<p>Hall, Cohen, Vue, & Ganley, 2015</p>	<p>Mixed Methods</p>	<p>284 middle school students (144 boys and 140 girls) - 64 with Learning Disabilities, ten teachers</p>	<p>Two treatment conditions were created. The effect of a strategic reader tool used with UDL on learner performance and teaching methods for online and offline lessons was examined. Analysis of data from student pre-test and post-test intervention, and interviews with teachers.</p>	<p>A reading technology digital tool on the internet, <i>Strategic Reader</i>, was implemented as part of UDL teacher training. The comprehension reading scores for students with learning disabilities increased using the online compared to the offline method. The study shows that technology is effective means for allowing teachers to reach more students and increase student engagement.</p>
<p>Katz, 2013</p>	<p>Quantitative</p>	<p>631 students from grade one to twelve, with mixed abilities (learning disabilities, English language learners, gifted students, and typical students), 58 educators</p>	<p>Data Analysis of quasi-experimental control group with pretest - posttest design.</p>	<p>Intervention, using the three-block model of UDL, increased student active (academic) and social engagement with increased peer interactions as a result of inclusivity. The intervention involved teachers co-planning together, creating multiple intelligence activities that allowed for small group work, the differentiation in</p>

				<p>the complexity of the activities, and designing rubrics that also allowed for differentiation in assessment. This study did not include students with severe disabilities.</p>
Katz, 2015	Mixed Methods	58 teachers from ten schools, and over 600 students from grades 1-12.	Observations and Surveys. Prior to and after intervention	<p>After implementing the three-block model of UDL, teachers reported more student engagement, reduced cases of challenging behaviors, increase student-to student interaction. They also reported feeling more confident in teaching in an inclusive setting, noticed reduced workload, and increased job satisfaction. Some concerns were lack of time for collaboration, resource that promoted differentiation, concerns about parents views, lack of administrative support, and school wide support</p>
Katz & Sokal, 2016	Qualitative	101 students from 51 classrooms, grades k-12. (11 students w/ disabilities).	Interviews - before and after an inclusive intervention model was implemented	<p>After implementing inclusive interventions, students with and without disabilities changed their perception about their academic abilities. The belief in their abilities increased. Furthermore, their perceptions on learning changed from the idea that learning comes from the teacher to learning can help you be successful. Students</p>

				<p>became more aware of the process of learning - relying less on external sources (teacher, lecture) and more on peer and/or self-directed learning. Students expressed more awareness of being in control of their learning and made more connections with peers rather than stating that their learning was solely the result of teacher instruction and lecture. After the intervention, more students noted that they preferred group and/or partner learning</p>
<p>Logan, & Wimer, 2013</p>	<p>Qualitative</p>	<p>203 teachers from middle schools, k-8, and high schools</p>	<p>Survey</p>	<p>High school teachers are more willing to use practices and strategies to create an inclusive classroom. If teachers did not feel confident, they were less likely to consider teaching inclusion; thus indicating that hands-on training could increase confidence in teaching in an inclusive setting.</p>
<p>Lowrey, Hollingshead, & Howery, 2017</p>	<p>Qualitative</p>	<p>7 general education teachers from Canada and the United States</p>	<p>Narrative Inquiry</p>	<p>There is a concern that the language still used by teachers has not allowed inclusion to move beyond physical inclusion and access to the curriculum to a sense of belonging, engagement, and progress in the curriculum. Implementing UDL changed teacher language to use words like belonging, students feeling a sense of independence in their learning, and becoming</p>

				more intentional in lesson planning.
McGhie-Richmond & Sung, 2013	Mixed Methods	Teacher Candidates. Pre-service teachers and practicing teachers in the Faculty of Education at a mid-size university in Western Canada	An introduction was provided about the principles of UDL. Then teacher candidates were asked to assess a lesson plan based on the UDL principles. Data Analysis of original lesson Plans before training and lesson plans after a course in UDL	Quantitative results reveal that candidates made substantial changes. But significant differences between pre-service and practicing teachers was observed. Candidates expressed a better understanding of their role and responsibilities as an educator in making inclusion work. Based on qualitative results, they stated benefits from the UDL framework.
Morningstar, Shogren, Lee, & Born, 2015	Quantitative	65 inclusive classrooms, from 11 schools, k-4 grades, each selected by School wide Inclusive School Reform (SWIFT). Classrooms included all levels of learners, even with significant disabilities. The percentage of students with disabilities ranged from 8%-27%.	Classroom Observations	Best practices were noted as to how inclusive classrooms provide supports for participation and learning for all students, even those with learning disabilities. The following supports were noted as best methods used to support learning and participation: UDL, behavioral interventions, teacher collaboration, and adaptations and modifications.
Persson, 2013	Mixed Methods	Politicians, managers,	Interviews, Classroom	Ability grouping and special education groups were taken

		headmasters, special educators, teachers, pupils, parents, and other staff in Sweden	Observations, review and analysis of written documentation and logbooks from special education teachers.	out of this school setting and created a school-wide inclusive setting. Academic achievement scores increased for those students with special needs.
Scott, Thoma, Puglia, Temple, & D'Aguilar, 2017	Quantitative	Various State Teaching Programs	Surveys	Although the majority of university programs introduce and teach the idea of UDL, there are varying degrees as to how in depth future teachers are trained in UDL and how best to apply it to a classroom that has students with intellectual disabilities, and have little practice in using UDL. The study also found that there is also little preparation in helping teachers see the connection between meeting the academic and transition goals of students with intellectual disabilities and UDL
Shogren et al., 2015	Qualitative	11 focus groups: 6 with students without disabilities and 5 with students with disabilities. Conducted at 6 schools selected by SWIFT. A total of 86 students: 53 without disabilities and 33 with	Interview	When taught in a full inclusion school, students reported a sense of community and a positive school culture. They noted the value of individualized instruction. The interview also confirmed other research that students, those with and without disabilities, feel negative about grouping students or pulling students from the classroom to provide support.

		disabilities, ranging from first to eighth grade.		
Smith-Canter, King, Williams, Metcalf, & Rhys Myrick Rotts, 2017	Mixed Methods	11 classrooms across 6 schools with both Special Education classrooms and co-teaching classrooms. Classrooms ranged from elementary, middle to high school classrooms	Survey, Observations	After receiving professional development training, teacher participants reported increased understanding and ability in implementing UDL principles, planning, and how to use technology support efficiently.
Spooner, Baker, Harris, Ahlgrim-Delzell & Browder, 2007	Quantitative	72 graduate and undergraduate students enrolled in education classes. The students were selected from four college courses	Data Analysis of variance with repeated measures for control group and treatment group on the ability to create universally designed lesson plans prior to and following training.	After a 1-hour training on UDL, both special educators and general educators were able to improve lesson plans that were universal to all students and could be used for students with mild or severe cognitive disabilities. Participants were able to create a UDL lesson plan in 20 minutes. The study concludes that teachers should be informed about UDL to help them create lesson plans for all learners.
Ware, 2016	Mixed Methods	149 4th grade students, both special education and general education students that have received instruction in an inclusive setting for two years.	Data Analysis from reading assessments, Surveys	There were no significant changes in reading scores for students with disabilities when moved into an inclusion classroom. Reading scores for general education students without disabilities decreased when moved into an inclusion setting. This differs from other studies on

		Also, 10 elementary school teachers		inclusion that show both groups of students benefit from inclusion. The survey found that all teachers agree that differentiation is important for student learning and that inclusion increases student self-esteem, however, 80% of the teachers disagreed that special education students have higher achievement when included.
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3.2.1. Research Design

Seven of the 19 studies (36.8%) used quantitative research design (Charley, 2015; Coyne et al., 2010; Dessemontet & Bless, 2014; Katz, 2013; Morningstar et al., 2015; Scott et al., 2017; Spooner et al., 2007). Six of the studies (31.6%) used a mixed method approach to research (Abawi, 2015; Hall et al., 2015; Katz, 2015; McGhie-Richmond & Sung, 2013; Persson, 2013; Smith-Canter et al., 2017; Ware, 2016). Six of the studies (31.6%) used quantitative research design (Friesen, 2008; Katz & Sokal, 2016; Logan & Wimer, 2013; Lowrey et al., 2017; Shogren et al., 2015).

3.2.2 Participants and data sources

Twelve of the research studies (63.16%) reviewed in this meta-synthesis focused on data from UDL regarding teacher training, implementation, attitudes of students and teachers, and student engagement. Seven of the research articles (36.84%) analyzed inclusion in terms of its definition, beliefs of opponents and proponents of inclusion, implementing inclusion, teacher efficacy, and perception of inclusion for both teachers and students. Eight of the articles

(42.10%) focused on general education teachers and their attitudes and beliefs on inclusion, using UDL in the classroom, and training (Charley, 2015; Coyne et al., 2010; Katz, 2015; Logan & Wimer, 2013; Lowrey & et al., 2017; McGhie-Richmond & Sung, 2013; Smith-Canter et al., 2017; Ware, 2016). Three of the articles (15.78%) were on special education teachers and their attitudes and beliefs on inclusion and UDL (Charley, 2015; Persson, 2013; Smith-Canter et al., 2017). Three of the articles (15.78%) focused on training in pre-service teachers, graduate, and undergraduate programs (Charley, 2015; Persson, 2013; Smith-Canter, 2017). Eleven of the research articles (57.89%) focused on special education students in an inclusive setting, and/or in an inclusive setting using UDL instruction (Abawi, 2015; Coyne et al., 2010; Dessemontet, 2013; Friesen, 2008; Hall et al., 2014; Katz, 2013; Katz & Sokol, 2016; Morningstar et al., 2015; Persson, 2013; Shogren et al., 2015; Ware, 2016). Ten of these studies on special education students also included results and attitude of general education students in an inclusive classroom and receiving UDL instruction ((Abawi, 2015; Dessemontet, 2013; Friesen, 2008; Hall et al., 2014; Katz, 2013; Katz & Sokol, 2016; Morningstar et al., 2015; Persson, 2013; Shogren et al., 2015; Ware, 2016). When the research studies included both students with disabilities and those without disabilities, students without disabilities represented less than half the students in the studies. The participation of students with disabilities in the research studies ranged from 10.90%-38.40% (Hall, 2014; 2013; Katz & Sokol, 2016; Shogren et al., 2015). One study included half students with learning disabilities and half without learning disabilities (Dessemontet & Bless, 2013). Two of the studies did not provide the breakdown of students with and without disabilities (Friesen, 2008; Ware, 2016). Furthermore, two of the research studies involved schools that are considered full inclusion schools and implement UDL into teaching

practices as a standard (Katz, 2013; Morningstar, 2015). Two of the studies included students with severe learning disabilities (intellectual disabilities) and students with severe behavior disorders (Coyne et al., 2012; Morningstar et al., 2015).

Pretest and posttest data analysis provided the majority of the data sources in the research studies. Ten of the studies (52.6%) included data analysis (Abawi, 2015; Coyne et al., 2010; Dessemontet & Bless, 2014; Friesen, 2008; Hall et al., 2015; Katz, 2013; McGhie-Richmond & Sung, 2013; Persson, 2013; Spooner et al., 2007; Ware, 2016). Six (31.6%) of the studies were surveys (Charley, 2015; Katz, 2015; Logan & Wimer, 2013; Scott et al., 2017; Smith-Canter et al., 2017; Ware, 2016). Five (26.3%) of the studies were interviews (Abawi, 2015; Katz & Sokal, 2016; Lowery et al., 2017; Persson, 2013; Shogren et al., 2015). Observations and narrative inquiries made up of the remaining of the research types. There were a total of four (21.1%) observations (Katz, 2015; Morningstar et al., 2015; Persson, 2013; Smith-Canter et al., 2017), and a total of two (10.5%) narrative inquiries (Abawi, 2015; Lowrey et al., 2017).

3.2.3 Findings of the studies

The findings of the 19 research studies included in this meta-synthesis are summarized as follows.

1. Teacher beliefs, perception, and self-efficacy have an impact on teacher attitudes about inclusion. Teachers are open to the idea of inclusion but express concerns about the lack of resources, time, support, and training to implement inclusion. They are concerned that they do not have skills or resources to implement inclusion, and to provide differentiated and individualized instruction. Special education teachers are more open to the idea of inclusion but noted negative attitudes from general education teachers. General education teachers do believe

it can be socially beneficial for students with disabilities but question the academic benefits. They contend that students with disabilities will not get the specialized instruction and curriculum they require. Finally, some worry that academic achievement of students without disabilities will decline.

2. After training and practice in using UDL, teachers felt open to the idea of inclusion and capable of creating lesson plans that would reach all students. Teachers reported more engagement from their students, reduced behavior issues, more confident teaching in an inclusive setting, and more excited about teaching as the lessons became more student directed rather than teacher directed. They still stressed that more time in training and practice would be beneficial. They worry that it still takes more time and collaboration to implement UDL than is provided to them. Pre-service teachers in undergraduate and graduate programs stated after training that they felt more open to the idea of teaching students with disabilities and incorporating UDL into lesson planning. Increased training is shown to increase teacher self-efficacy in using inclusive teaching methods

3. How best to implement inclusion in schools was also prevalent in the research studies. Collaboration, co-teaching, Three Block Model of inclusion, UDL as an instructional method combined with the use of technology, and the whole schooling approach were discussed. The Three Block Model considers three main items needed for a school to incorporate inclusivity in the classroom. The first part is teaching students social and emotional learning. The second part is to implement best instructional practices that will reach all diverse learning such as UDL and collaboration. The third structure looks at system wide support in the areas of training for all staff, support from principals and administrators as well as the

community. This third component also encompasses the beliefs of whole schooling. This is the idea that all resources should be shared equally in a school for inclusion to be effective.

4. When UDL was used as a teaching method, students reported feeling a sense of belonging, liked working in groups, enjoyed having extra supports in the classroom, and also liked having options on accessing new information and expressing what they have learned. Teachers report liking that the lesson planning is pro-active as they plan ahead for modifications and differentiation for all students rather than adjusting lessons at the last minute. Three of the research studies reported an increase in academic achievement after the use of UDL. Five of the studies showed that student engagement increased after using UDL. Some studies have indicated that highly engaged students have an increased desire to be in charge of their learning, and they earn higher grades (Katz, 2013). Students also express more positive social interactions and more connections with peers.

3.3 Emergent themes

Six themes were prominent after analyzing the 48 articles in this meta-synthesis. The emergent themes include: (a) the definition and description of UDL; (b) issues, barriers, and concerns with inclusion and UDL; (c) perceptions and attitudes of both students and teachers of inclusion and UDL; (d) implementation of inclusion and UDL, the relation between UDL and inclusion, the Three Block Model of UDL and whole schooling philosophy; (e) the benefits of UDL and inclusion, and how UDL can support an inclusive classroom; (f) ideas for further study. These six theme clusters and their formulated meanings are represented in Table 3.

Table 3

Theme Clusters	Formulated Meanings
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<p>Definition and Description of UDL</p>	<ul style="list-style-type: none"> ● Developed by the Center for Applied Special Technology (CAST) in 1998, an education resource organization. ● Based on the architectural design concepts for handicapped individuals. ● Transferred concepts to learning: helps create a physical, social, and academic environment conducive to all learners of all levels. ● Based on research in neuroscience that learning takes place in 3 parts of the brain: recognition, strategic, and affective networks. ● From this research, principles of lesson planning and curriculum design were developed to increase student engagement so that all students can have exposure to the general education curriculum. ● Uses a variety of teaching methods like cooperative learning, self-monitoring, embedded assessment to move away from teacher centered learning to student centered learning ● A method of teaching that allows for students multiple ways of accessing information, processing information, and representing their knowledge. It is considered student centered as opposed to teacher led and centered. ● Three main principles of UDL: Representation, Expression, and Engagement ● Representation: Students are provided different ways of obtaining information. Teachers plan lessons on how to teach or represent the information so that all learners can access new information. ● Expression: Students are provided with options to show and share what they have learned ● Engagement: Teachers plan on how they will keep students interested in the curriculum and motivated. ● 4th Element: Multiple means of assessment. This is a recent addition to the UDL principles. ● The revision in 2004 of IDEA (Individuals With Disabilities Education Act) and ESSA (Every Student Succeeds Act) refer to Universal Design as an effective method for instruction and assessment.
<p>Issues, Barriers, and Concerns with Inclusions and UDL</p>	<ul style="list-style-type: none"> ● Teachers have different ideas and understandings of what inclusion is. ● There are various levels of inclusion in regards to how much of the day special education students spend in the general education classroom. There is also the separation

	<p>of academic and social inclusion.</p> <ul style="list-style-type: none">● There is continued debate as to the best methods in creating an inclusive classroom and the practicality of an inclusive classroom.● Supporters of full inclusion believe that students with intellectual disabilities and behavior disorders should be educated with peers without disabilities to the maximum extent possible, if not for 100% of the school day.● In the United States, 62.8% of special education students spend 80% of their time in the general education classroom. However, there is concern as to the quality of the instruction these students receive.● General education teachers express concern that they do not have the proper training in instruction to add differentiation to lesson plans for individualized instruction that is needed in an inclusive setting.● Teachers are also concerned about the lack of time for collaboration with service providers that is needed for inclusion. There is also worry about the distraction created when students with severe support needs are included in the classroom● Teacher attitude can impact the quality of instruction in an inclusive classroom. Teacher's will naturally construct categories of students, which can influence how a classroom is managed, and, as a result, naturally create exclusion of students.● The purpose of IDEA (2004) is to allow for students with disabilities equal opportunity to receive an education in the least restrictive environment and have access to the general education curriculum.● Proponents of inclusion contend that there is no clear guideline as to what a least restrictive environment (LRE) is or what constitutes a free and appropriate education (FAPE). These regulations appear in IDEA; however, they do not provide specific methods for implementation. The methods for implementing and understanding of LRE vary among states.● Proponents point to studies and research that supports students with special education needs being included in the general education classroom and curriculum.● Opponents express concerns that students with special needs will not receive the specialized instruction that they need to be successful.● Opponents stress that special education is needed because
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	<p>students with special education needs require a different curriculum, more intensive and individualized instruction, and extra supports from trained teachers and paraprofessionals.</p> <ul style="list-style-type: none"> ● There is a concern that including students with disabilities in the general education classroom could have a negative impact on students without disabilities. ● Opponents and Proponents argue for or against inclusion respectively based on two models: the constructivist model versus the medical model.
<p>Perceptions and Attitudes of both Teachers and Students of Inclusion and UDL</p>	<ul style="list-style-type: none"> ● Teachers agree that inclusion and exposure to the general education curriculum could be beneficial to students with disabilities. In one study, 100% of teachers agreed that self-esteem increases with inclusion, but 80% disagreed that students with disabilities being taught in an inclusive classroom would benefit academically (Ware, 2016). ● Teachers are concerned that they do not have the appropriate skills, training, and resources to teach students with special needs. ● Teacher self-efficacy impacts attitude on inclusion. Lack of training impacts teachers' beliefs on their ability and skill set to teach students with disabilities. ● Special education teachers report negative attitudes from general education teachers regarding inclusion. ● General education teachers report that modification and accommodation requirements are disruptive to instruction. ● General education teachers' attitude on inclusion depends on level of disability of student. They were most positive about teaching students with language and/or physical disabilities compared to teaching students with severe disabilities and emotional disorders. ● After receiving training in UDL, teachers reported feeling more confident and prepared in teaching students with learning disabilities. ● After a 3-hour training, teachers reported implementing UDL methods into lesson planning. ● Teachers did express concern about the amount of time needed to design and implement a UDL lesson. ● Some teachers reported they needed more practice using UDL and did not feel successful at it all of the time. ● Teachers like the idea of UDL being proactive in writing

	<p>lesson plans for all students rather than incorporating modifications or adjusting instruction for a few learners during or after the lesson.</p> <ul style="list-style-type: none"> ● Teachers said more in class supports would still be needed for those students with severe behavior and emotional needs. They still worry that behaviors will still disrupt the classroom. ● Teachers express concern that special ed teachers helping in classroom are not familiar with gen ed curriculum. ● Students report feeling more in charge of their learning and feeling more independent when in instructed under UDL. ● Under UDL instruction, students report feeling a sense of belonging when doing group work. ● General education students stated that they like the idea that they can help others learn. ● Special educations students liked being included in lessons with peers rather than being pulled to resource. ● Students report feeling more support with co-teaching and feeling in charge of their learning. ● There are some concerns from students on inclusion. High achieving students are concerned that behaviors of students with disabilities will disrupt the classroom resulting in lower grades ● General education students worry about having time to work on collaborative assignments with special education students. ● Special education students felt having a special aid in the gen ed classroom interfered with peer interaction.
<p>Implementation of Inclusion and UDL, the Three Block Model of UDL and Whole Schooling Philosophy</p>	<ul style="list-style-type: none"> ● Increased training with professional development will increase teacher confidence in teaching inclusion. ● Professional development should involve training in collaboration, UDL, differentiated instruction, and technology training. ● Implement Whole School philosophy and environment. ● Integrate UDL to support all tiers of instruction. Instruction should coincide with MTSS (multi-tiered instructional supports) and should incorporate meaningful assessments.

	<ul style="list-style-type: none"> ● Invest in appropriate technology. ● There should be changes in pre-service and teacher preparation programs. ● Provide positive behavior supports. ● Utilize the Three-Block Model of inclusion. ● Pre-service teachers should have practicum experience in full inclusion schools.
<p>The Benefits of UDL and How UDL can Support an Inclusive Classroom</p>	<ul style="list-style-type: none"> ● UDL allows teachers to proactively write lesson plans that incorporate differentiation and tiered level of instruction. ● UDL supports an inclusive setting; instruction reaches all levels of learners as interventions and individualized instruction are built into lesson plans. ● Numerous studies point to the benefits of inclusion academically and socially. ● UDL incorporates technology into lessons. When students have access to technology, they are more motivated and engaged in work. ● Students are more motivated to learn and increase engagement when taught at their instructional level. ● UDL and inclusion allow all learners to have access to the general education curriculum set forth in IDEA 2004. ● UDL can help reduce costs, as fewer resources are needed. ● UDL focuses on student strength, motivates students to be in charge of their learning, thus reducing behavior problems. ● Studies indicate that inclusion has shown no adverse effect on students without disabilities.
<p>Items for Further Study</p>	<ul style="list-style-type: none"> ● There is a lack of research on effectiveness of UDL with students with severe support needs and disabilities, and students with behavior disorders. ● More research is needed on the impact of full inclusion on academic outcomes of students without disabilities. ● Current research on UDL is not consistent because the intensity of how UDL is applied is inconsistent ● Research studies should focus on how effectively UDL allows access to the general education curriculum, and if curriculum standards are being taught when UDL is used. ● Studies need to be done on how best to implement UDL with fidelity.

	<ul style="list-style-type: none"> ● UDL has been around since early 90s, but is still a new concept in the classroom. Therefore, more long-term studies need to be completed. ● It is suggested that more single case studies that focus on just a few students with specific disabilities should be completed. ● There is limited research as to what level pre-service teachers are being trained in UDL and to what intensity, as well as if they use it once hired on as a teacher. ● The research on UDL points to data that shows increased student engagement but there is limited research on academic results.
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4. Discussion

In the discussion section, each of the emergent themes is summarized based on the analysis of the 48 articles included in this meta-synthesis. Within some of the emergent themes, I have made connections to my own beliefs and teaching methods as a special education teacher.

4.1 Definition and description of UDL

First developed in the early 1990s from the Center for Applied Special Technology, UDL was offered as a pedagogical method of teaching that could reach diverse learners as it considers the different levels and learning styles of students. The concept of UDL finds its origins in architectural design. Buildings and walkways are now built to so that all people with or without disabilities can use them rather than adding the accommodations later at an added cost. Common examples are the use of door levers rather than doorknobs, or curb ramps built into sidewalks. The notion of adding built in accommodation was transferred to the creation of UDL. The reauthorization of the Individuals with Disabilities Education Act (IDEA) in 2004 and the law

Every Student Succeeds Act of 2015 both recognize UDL as an effective means of instruction in order for all students to access the general education curriculum.

UDL is an instructional method that uses neuroscience research of the three networks of the brain that influence how people learn. The three networks of the brain are the recognition networks, strategic networks, and the affective networks (Delaware State Department of Education, 2004). From this research, the three main principles of UDL were developed. They are Representation, Expression, and Engagement.

With UDL, students are offered multiple means of representation when accessing the curriculum and learning new information. Multiple means of representation works with the recognition network of the brain; this network determines how students collect new information, and organize it based on what they see and hear. Some students may process information using a traditional teaching method of teacher lecture and text reading, while others may prefer a video, pictures, or hearing the information on tape. Another approach to representing new information is to make connections to what students already know, or scaffolding.

UDL also allows students options for expressing what they have learned. This utilizes the strategic networks of the brain. Students decide how they will organize what they know and how to share it with others. An example of a traditional method is an essay or a multiple-choice exam. UDL would consider a student making a skit, a video, or answering questions verbally as an alternative means of expression.

Multiple means of engagement are meant to maintain student interest and keep them engaged and interested in learning. This accesses the affective networks of the brain. The affective network is the area of the brain that activates when a student is engaged. When this

network is stimulated, students understand the why of learning and they make connections to their own experiences and lives. Some examples of engagement are peer group work, collaboration on reports, movement with learning, repeating information, chances for students to respond to information, and manipulates used in math. Students are also given objectives at the beginning of lessons so they understand the purpose of a lesson and can refer back to the goal as they learn.

A fourth element of UDL is assessment. Students receive daily feedback on their progress and whether or not goals are being met. With immediate feedback, students will see successes as well as allow them to set their own goals. It helps teachers to scaffold information to students and provide and adjust the supports a student may need to reach a goal. It is important for teachers to assess the process of how students learn as well as what they have learned. This means assessing them on being engaged, and participating in goal setting and not just on a final product or knowledge they may have gained. Spencer (2011) points out that when assessing students, the skill should be kept apart from knowledge. An example given is a student's ability to write a paper. This ability should be kept separate from the knowledge a student has learned.

In summary, The goal of UDL is to provide teachers with a method for lesson planning that will allow a diverse student population access to the general education curriculum. UDL incorporates various teaching strategies with built in accommodations that provide for personalized learning, and it acknowledges that each student has his or her own learning style and needs.

Although the majority of my instruction is direct instruction in a resource room setting, I implement options for engagement and expression whenever possible with special education

students. With my kindergarten students that are learning letter name and sounds, I give them the option to write in rice, trace on sandpaper, or write in the air to make the letter as they say the sounds. When learning vowel combinations, my second graders like to draw pictures that include the vowel team and/or do a rhyme or movement to it. My third graders enjoy playing the teacher during sight word drills and phonics drills. When they play the teacher, they get to refer to the word chart and use a pointer. In math, students use place value blocks to learn regrouping. For fractions, students like to draw pictures, cut up different shapes, and even create fractions with real food. I have brought in treats and asked each student to divide the treat into a given fraction. From my own experience, the students are more engaged and excited about a lesson when options for learning besides traditional methods of teaching and drill are used. Finally, I discuss the goals of each lesson or unit with my students before a lesson. After a lesson we review and discuss the goals and the students discuss if they feel they have reached a goal or are on the right path to reaching the goal. Writing goals on the board keeps students engaged and interested in what they are learning. There have been a few times that I have neglected to write the goals on the board. My students are quick to point it out and ask about them before the lesson begins.

4.2 Issues, Barriers, and Concerns with Inclusions and UDL

Advocates for full inclusion argue that the general education classroom is the least restrictive environment, and that full inclusion means students with disabilities are in the general education classroom 100% of the day. They stress that benefits of full inclusion can be academic as well as non academic in areas of language, social skills, and behavior. Yell (1995) notes that in the court case of *Daniel R.R. v. State Board of Education* (1989), these non

academic benefits must also be considered in determining the best placement of students with learning disabilities.

Furthermore, advocates stress the importance of going beyond just the civil rights of education laws for students with disabilities to considering the social rights “that guarantee citizens the capacity to participate fully in society.” (Skilton-Sylvester & Slesaransky-Poe, 2009, p. 33) They contend that all students must learn to become part of community now to prepare for life as adults later in society. Supporters of inclusion also argue that it can help non-disabled students have positive attitudes towards individuals with disabilities and help create a more harmonious society (Begeny & Martens, 2007 as cited in Hicks-Monroe, 2011). A report from Kids Together (2009) states that other benefits are increased achievement of IEP goals, greater access to general curriculum with higher expectations, increased collaboration with school staff, and increased parent participation. Other studies noted that students with mild disabilities included in the general education classroom avoid low self-esteem from being excluded and showed improvements in standardized tests (Hicks-Monroe, 2011).

Reasons for opposing inclusion are many. Some parents are concerned that the individual needs, supports, and interventions students with disabilities require cannot be met in the general education classroom. Other concerns are that schools, teachers, and administrators are not prepared for inclusion as full inclusion is complex, that there is not enough evidence to confirm the effectiveness of inclusion, and that school-wide support for inclusion may not always be in place (Hicks-Monroe, 2011). Furthermore, teachers and parents express concern that integrating students with disabilities into the general education classroom could negatively impact the learning of students without disabilities.

Teachers also express concerns in the lack of training on how best to educate and manage students with special needs. There is also the fear that non-disabled students would not receive the necessary instruction, would not be challenged, and that grades and assessment scores would decline. Some teachers are open to the idea of inclusion, but are not sure how they would implement it into the classroom. Hicks-Monroe (2011) refers to Heyne's barriers to inclusion as the following: Attitudinal barriers, Administrative barriers, Architectural barriers, and Programmatic barriers. Teachers have concerns about sharing space if collaboration is required for inclusion and do not fully understand what inclusion is, the rights of individuals, and what the best inclusion models are. Administrative barriers are lack of training provided to staff, and funding for inclusion. Staff may not have the training and information on how to serve people with disabilities. Skilton-Sylvester and Slesaransky-Poe (2009) identify that for inclusion to be successful and to move beyond just simple placement of students, three steps must take place in schools: one, focus on the needs of learners as a community rather than an individual; two, change the mindset that students with disabilities need to change in order to mean norms to the mindset that the format of schools and classrooms need to change, and finally, three, consider the value of students with disabilities as a member of a community rather than focused on the deficits of the student.

Whereas those who support full inclusion argue the least restrictive environment is the general education classroom, opponents believe otherwise. The issue arises that the general education may not always be the appropriate place for students with disability. They question how can the general education environment be the least restrictive if students lack support to access the curriculum. Inclusion must be more than just a physical placement, but

also ensure that students are engaged and learning the curriculum. The supports may not always be available for this to happen. They contend that the location of where instruction is given is not as important as to the quality of the instruction. – “seeking inclusion at the perceived expense of effective instruction by thrusting students into environments for which they are unprepared-and which are unprepared for them-is neither fair nor just.” (Anastasiou & Kauffman, 2011 as cited by Dudley-Marling & Burns, 2014, p.20). Some would argue that this concern that students have effective instruction is to ensure that they meet grade level expectations needed for assessment and normative testing requirements seen in district and statewide tests. Dudley-Marling (2014) stress several times that such testing requires students with disabilities to meet the standardized ability levels of what has become known as the average student. They argue that a revision in assessments would look at the progress of a student based around the competence of the student, and that it would consider the diverse population seen in schools today. “Learner variability dictates a need for assessment variability” (Dalton & Brand, 2012, p. 1).

Proponents of inclusion respond to such concerns by arguing that the idea of LRE is flawed, and it encourages and perpetuates the notion of segregated settings in order to justify meeting the demands of individual needs. The solution is not in helping students overcome whatever disability they may have, but to create a curriculum that is designed to meet the needs of all learners, despite the disabilities. They contend that the current curriculum structure focuses on the average student and does not support all students, and is “especially unfair for students with diverse backgrounds or who have differences in their abilities to learn.” (Hartman, 2015, p. 57) The student should not have to adjust to the curriculum, but rather the curriculum

to the student. If students with learning disabilities are segregated based on the justification that their needs can best be met away from the general education classroom, then the chance for them to be exposed to the general education curriculum is reduced. Morningstar et al. (2015) refer to several studies, which support the positives of being exposed to the general education curriculum such as improved academic, communication, and social results. Still other studies find that access to the general education curriculum can lead to success in the areas of postsecondary schooling and employment. Indeed, advocates for full inclusion suggest the new question should not be where to teach students with disabilities but rather what and how to teach students with all the necessary supports in general education (Morningstar et al., 2015).

They suggest the solution is to redefine and reconsider how the education system looks at disability. The current approach to thinking of disabilities is known as the deficit model or medical model (Dudley-Marling & Burns, 2014 & Sailor, 2016). When a student has a deficit, they lack the necessary skill or ability to function on grade level and to keep up with the average student in testing and assessments. Thus the notion is that they must overcome these obstacles to learning and, therefore, should receive special instruction, interventions and support from a specially trained teacher (Dudley-Marling & Burns, 2014). As a result, the system may unknowingly create a system of exclusion rather than inclusion. Dudley-Marling & Burns (2014) stress that the current system of classifying students using the deficit model is flawed for this reason, and the inclusion of students should be considered under a constructivist stance on inclusion. This model stresses restructuring the school system itself rather than individual remediation. The idea of an “average” student is archaic as there is an ever-increasing change in the student population based on race, culture, background, and disabilities.

The stance is that schools should move away from this disability model to a constructivist approach to inclusion. They state that all students learn in a social environment and that a student can contribute to his/her learning through experiences, individual strengths, and social interactions. That is not to say that differences or disabilities are to be ignored and that supports should not be given in the classroom where needed. Each child will learn at a different rate, and that measuring this rate is not important, but that the student is learning. Rather than requiring that students with disabilities overcome a perceived lack of an efficient rate of learning, requiring them to prove they can fit into the general education classroom, and adjust to what society considers normal, social constructivists posit that the educational environment should be required to make adjustments for the student (Dudley-Marling & Burns, 2014).

In order for this to be accomplished, proponents argue there is a need for reform in the education structure and how schools are currently organized. They contend that current school structure needs to move away from age-grade curriculum, tracking and ability grouping, and normative testing procedures (Dudley-Marling & Burns, 2014). Sailor (2016) suggests that the current model of providing specialized services to select group of people makes full inclusion impossible. Educators should focus on the strengths of a student rather than the disabilities.

The changes that need to be implemented are many ranging from different instruction techniques within the classroom, collaboration, training for all staff, to the preparation of teachers and special education teachers, and lastly taking a whole-school approach to inclusive education (Sailor, 2016). The concept of a whole school approach looks at

how best schools can maximize their resources equitably to all students and advocates for full inclusion. Additionally, the whole school reform movement contends for full inclusion to succeed, multi-level instruction is necessary for students to have access to school wide curriculum (Katz, 2016). Szumski et al. (2017) conducted a meta-analysis of various research studies on inclusion. The results show that a student with special educational needs benefit academically in an inclusive setting.

4.3 Perceptions and Attitudes of both Teachers and Students of Inclusion and UDL

The effectiveness of inclusion can be impacted by the attitudes and self-efficacy of teachers. General education teachers feel they are not prepared to teach in a classroom that has students with disabilities. They say they are not prepared because they do not have proper training in differentiated instruction, the time for creating differentiated lessons, support from administrators, and the time for collaboration with special education teachers. Their level of acceptance of inclusion is also associated on the type of disability. They are less receptive to teaching students with severe disabilities or behavior disorders as it could cause disruption in the classroom, thus having a negative impact on general education students.

Special education teachers point out the negative attitudes of general education teachers having students with disabilities in the classroom. They may also feel protective of special education students, as they may not receive individualized instruction. Unfamiliarity of the general education curriculum is also a concern.

A teacher's self-efficacy for teaching students with disabilities rises as they receive more training and experience. As teachers become more confident in teaching inclusion, they are more willing to enroll in more training opportunities and utilize inclusive teaching practices (Charley,

2015). In turn, they are able to differentiate lessons for a diverse student population.

After receiving UDL training, teachers liked the benefit of pro-actively incorporating built in modifications into lesson plans (Smith-Canter et al. 2017). They also noted more confidence integrating technology into lesson plans. Using technology in lesson planning encouraged teachers to do backwards lesson planning. As the teachers prepared lesson plans, they consider each of their students' abilities and what application or technology would help them meet the objective of the lesson. Teachers offered that they would continue to make changes to lesson plans to include UDL and felt more prepared to teach students with disabilities. It was also noted that as student academic assessments improved and engagement increased, teacher self-efficacy also increased because they felt they were making a positive difference in students' desires to learn. (Katz, 2015; Charley, 2015).

There is also positive feedback from students that are taught in an inclusive setting. Students reported feeling a sense of belonging. General education students liked that all students were engaged and included in-group learning, and peers supported each other as opposed to anyone being picked on or singled out from the group. They also liked that they could help other students learn, and that they would know how to help people when they are older. Special education students liked being included with peers and remaining in the classroom instead of being sent to resource. Both groups of students liked having the support of two teachers in the classroom. After the 3-Block UDL intervention, Katz (2016) reported that more students preferred working in small groups than before the intervention because they became more comfortable asking questions and felt accepted by their peers.

It should be noted that some students reported it was harder for them to concentrate

in-group settings due to increased noise levels (Katz, 2016). Other general education students have expressed concern about students with severe disabilities and/or behavior disabilities and the interruption it can cause in the classroom. Shogren & et al. (2015) stated that even with a positive school culture and feelings of acceptance in an inclusive environment, there were still some issues with students being picked on in uncontrolled areas of school like the bus, bathroom, or recess time.

After UDL instruction, students stated they learn best when working in groups and being active as opposed to doing independent work and workbooks. They liked having materials available that worked best for how they learned. Students with disabilities liked the use of technology. In a study by Katz & Sokol (2016), students changed their idea of what learning is and became more self-aware of the process of learning after being taught in inclusive classroom with UDL instruction.

In the school where I currently teach, the general education teachers refer to special education students as my students. This concerns me, as they are less open to ideas to assist the students in the general education classroom and ideas for collaboration. Last year I insisted that one of my students remain in the classroom with his peer to do math so he would have access to the grade level math curriculum and not fall further behind in his math skills. The teacher did not like this idea, but the student, with pre-teaching and small group work, was able to remain in the classroom with his peers, and was exposed to the general education curriculum. This year he remains with his peers in class for math and needs less supports. Another special education student, who qualifies for reading support, is failing in her daily journal work for math. A daily math warm-up problem is provided to students to complete in a math journal. The teacher gives

the support of reading to the student the math problem; she then states she expects the student to complete the work independently. The student continues to be frustrated with her journal work and continues to fail in it. I have offered that perhaps she could have a model to go with each problem, be allowed to verbally express how she might solve it, or given assistance in a small group, then given a similar problem to try on her own. This is an example of not providing differentiation and expecting the student to continue to do the journal independently only to result in her continued frustration and failure. As a special education teacher, I will continue to offer support to my students, offer suggestions for differentiation and support to general education teachers so that my students can experience success. Even though our school may not be utilizing UDL instruction or offer inclusive classrooms, supports for differentiation can still happen.

4.4 Implementation of Inclusion and UDL, the Three-Block Model of UDL, and Whole Schooling Philosophy

In order for inclusion to be implemented effectively, several variables must be considered. First, changes in pre-service teaching programs should teach both general education and special education teachers best teaching methods in inclusion, and how to utilize UDL in lesson planning. Second, the Three-Block Model is considered an effective means for incorporating school-wide inclusion as it utilizes multi-level instruction. Third, professional development and training for current teachers in UDL, collaboration, and a whole-school approach to inclusion are important.

University programs should offer curriculum that train pre-service teachers in the principles and methods of UDL. It is important that all universities have a common terminology

of UDL, sameness in design of courses, and opportunities beyond lecture classes to create and teach lesson plans that use UDL (Sopko, 2009). Teachers should be provided with practicum opportunities utilizing UDL so that they have authentic practice in a classroom (Sailor, 2016). Universities should also train teachers to use UDL as an assessment tool, and how UDL can help students with intellectual disabilities reach academic goals (Scott et al., 2017).

The Three-Block Model is an effective means for integrating inclusion (Katz, 2013). The first part to this model, known as creating compassionate learning communities (Katz, 2015), focuses on the social and emotional well being of students. It supports social inclusion as it focuses on increasing students' self-autonomy, confidence, and respect for others and peers in a diverse learning environment. When students feel safe and accepted, they are then able to focus on the academics of school. Furthermore, including social and emotional learning curriculum with positive behavior supports in an inclusive setting has been shown to reduce unwanted behaviors. The second part, inclusive instructional practices, supports teachers in implementing teaching practices that reach all learners. These practices include co-operative group learning, differentiated instruction, student choice in learning, scaffolding, regular feedback, and differentiated assessment. Included in these practices are multi-tiered systems of supports (MTSS). Using this system can identify the learners, based on data from assessments, that need more supports and can allow the teacher to prepare lesson plans that provide those supports using differentiation and the instructional methods as mentioned. MTSS can also help schools determine the best way to use staff and technological resources to provide the extra supports students need as the data will show what students need extra supports and to what intensity. To effectively incorporate these practices, teachers are taught full year and unit planning using UDL

(Katz, 2013). The third block looks at what supports are needed to support teachers using UDL. The supports needed are administrative support, funding to allow for necessary resources and professional development, proper staffing and planning time to support co-teaching and co-planning.

A third component is the whole-schooling approach that calls on a school-wide inclusive setting to teach to a diverse population of students. In a whole-school setting, there are no segregated classes based on levels of learning, resources are shared, and supports are provided from the administrative level. The administrative level should allow care and time for collaboration between teachers and training for UDL. Teachers that were provided training in UDL stated they felt more prepared to teach in an inclusive setting, and an increased understanding of UDL and how to implement it (Spooner et al., 2007 & Smith-Canter et al., 2017).

Adequate funding is also integral part of the whole-school approach. Funding allows for professional development of teachers for learning inclusive instructional methods, like UDL, allows for proper paraprofessional support and training, and the acquisition of technology in the classroom to support an inclusive setting. It is also important that support at the administration level is also provided to allow time for professional development and collaboration. By not having segregated classrooms, there is also less need for added rooms and space in the classroom, and there is less need for specialized curriculum (Sailor, 2016).

As a special education teacher, I plan to continue to look for professional development opportunities in learning differentiated instruction. If given the chance, I would also like to observe a full inclusion school, visit the SWIFT (Schoolwide Integrated Framework for

Transformation) center in Kansas to learn more about full inclusion schools, and receive training in UDL. I would like to take what I learn, and share it with my coworkers, school, and implement what I have learned with my students. Furthermore, I would support any future legislation and funding that supports inclusion. With added training and knowledge, I can ensure that any future endeavors for inclusion in our schools can be done properly.

4.5 The benefits of UDL and how UDL can support an inclusive classroom

UDL is a teaching method that can bring inclusion into the classroom effectively. Inclusion needs to be more than just a location or a classroom for a student to be educated. It needs to be a place where all diverse learners can learn and access the required general education curriculum, where they are engaged and in control of their own learning, and accepted by their peers. Students with disabilities cannot be expected to remain in the general education classroom without supports or differentiated instruction, which UDL provides. UDL allows students with disabilities to learn the general education curriculum. A study from the National Center for Inclusive Education reports that when students with disabilities spent more time in the general education classroom learning the curriculum, their math and reading scores increased, they had less absences, and less disruptive behaviors (Dudley-Marling & Burns, 2014). Students with learning disabilities, when given supports in the general education classroom, achieve more or as much academic achievement as their peers in a segregated setting (Dessementet & Bless, 2014).

Personalized learning that matches the ability of the learner, a mix of learning tasks and choices for expression, and individualized goal setting can help students feel a sense of empowerment and self-confidence (Abawi, 2015). UDL allows for scaffolding and regular

feedback, which increases a student's confidence. Using UDL in an inclusive setting also increases student engagement between peers, and between peers and teachers. Katz (2013) refers to studies that have shown student engagement increases academic achievement. Other research studies have shown that instruction with UDL improved mathematics and reading comprehension scores (Friesen, 2008; Hall et al., 2015).

UDL can help teachers create lesson plans that proactively plan ahead for modifications and accommodations. As modifications and accommodations are needed in an inclusive setting to benefit all learners, UDL can help teachers plan for this rather than adjusting lessons to fit individual students during the lesson, which takes added time and stress. Teachers are able to create, plan, and teach a lesson plan regardless of learning differences and accommodation needs. Proactively planning for all learners will reduce time and the stress accommodating for students on the spot.

After using UDL in instruction, teachers noted improved student self-concept, student engagement, and a decrease in unwanted behaviors. As a result, teacher's reported increased job satisfaction and an increase in confidence in teaching in an inclusive setting (Katz, 2015). They became more engaged as well because they noted students began to take more control of their own learning and it gave time for more student-teacher interaction. Teachers also felt they were making more of an impact and difference to students' lives.

Technology is also an effective means for implementing UDL in the classroom. I use technology several ways. First, when I work with kindergarten and first grades students on letter recognition and sounds, I instruct in the classroom whenever possible. When the teachers are doing small group, I will also work with a small group using iPads. As I focus on one student,

the other students are engaged with a learning module on the iPad. The program gives feedback to the student, and keeps track of results and data for the teacher. For my fourth grade math students, I am using a math program that is competency based. I can look at the data and note the skills that a student needs more help with and make games and assignment around that skill accordingly. There is an opportunity to apply for a grant for two classrooms in our school. It requires an essay and two hours of online training. My hope is to apply to this grant and bring this technology to more of our students.

4.6 Items for further study

When putting in the various search terms into the databases, it became apparent that there is lack of research on the academic impact of inclusion on general education students. More research on this subject would be beneficial as opponents of inclusion express concern about the declining academic achievement of students without disabilities when being taught with peers with disabilities. There have been studies showing that general education students increased their tolerance and understanding of students with special needs, but lack of research for academic benefits. There are many variables to consider when looking at the educational impact on general education students in an inclusive setting, such as class size, the number and type of disability students in the classroom, the teaching methods, and the level and intensity of inclusive practices used.

Furthermore, UDL research focuses on academic achievement for students with disabilities and not on academic achievement for students without disabilities. As there is a growing community pushing for full inclusion, and UDL has been referred to in recent legislation as a teaching method in inclusive classrooms, more research data is needed as to the

academic results for students without disabilities.

Even though UDL has been around since the early 1990s, it is still considered a new concept in education. Therefore, more long-term data is needed to show its effectiveness. Also, the research on UDL shows increased student engagement, but there is limited data on academic achievements. Finally, there is lack of research on the effectiveness of UDL with students with severe support needs and behavior disorders. It is important to gather more data on this student population as general education teachers express the greatest concern teaching them in an inclusive setting compared to teaching students with language or physical deficits. To gather data on this student population, it has been recommended that single case studies that focus on specific disabilities and a few students should be completed.

In regards to training teachers and pre-service teachers in UDL, there needs to be more studies that follow up with teachers to determine if they continue to use UDL and how often. Many of the pre-service programs report teaching UDL to pre-service teachers, but do not provide the practice in using UDL or requiring them to do internships or student teaching using UDL. Also, the studies should look at the frequency and intensity with which teachers use UDL, as well as look at if UDL is being used to consistently teach to the academic standards set forth by districts and states. Guidelines should also be made as to the most effective way UDL should be implemented, as there is no consistency between schools, district, and states. Once there are universal guidelines, more research studies should be completed.

5. Conclusion

The findings of this meta-synthesis reveal the controversy of inclusion. Proponents point to the numerous studies available that show the academic and social benefits of inclusion.

Opponents state that special education is needed to provide the necessary individualized instruction those students with special needs and learning disabilities require. As I have found from the research, there are many different levels of inclusion and many different viewpoints that make it a contentious issue. Even though there is a growing trend for inclusion, and teachers are becoming more open to the idea, there is still the question on the best way to implement full inclusion, and as to the best teaching methods to use. Inclusion requires preparation and commitment. Inclusion is more than a placement, but a method.

The least restrictive environment may be considered the general education classroom. Nevertheless, this is not the case if teachers are not prepared to teach a diverse student population. If teachers do not use differentiated instruction, are not trained to teach to different abilities or interests, and are not provided with the proper supports, then the general education classroom is not prepared for inclusion. Today's classroom is made up of diverse students. There should be support at the administrative level for professional development, support staff, and time for collaboration and lesson planning for differentiation. The effort should be made to create a learning environment that can support inclusion and a commitment to the diverse student population. If the teachers that taught my son had been provided training in UDL, and professional development training in working with students with behavior disorders and FASD, I believe it would have benefited my son. If he had been offered differentiated instruction, perhaps his education would not have been interrupted with so many school transfers.

UDL is an effective teaching method that can help meet the demands of an inclusive classroom. It offers teachers the ability to teach to a diverse student population. It is a chance for all students to access and progress in the general education classroom. UDL gives students

variations on how new information and curriculum is presented, on how they can demonstrate what they have learned, and increases student engagement. Students learn better if teaching is matched to their abilities and scaffolding takes place when learning new material and information. UDL allows this to happen. As a teacher, it is my job to ensure that all of my students have the supports they need to be successful. UDL is a method that can help students experience success and give them an education in the least restrictive environment. As the discussion of inclusion moves from questioning if it is appropriate to use in schools to how to implement it in schools, UDL needs to be a part of that discussion.

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