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## THE USE OF TEACHING METHODS AND STRATEGIES AND HOW THEY AFFECT THE STUDENT AND TEACHER CLASSROOM DYNAMICS

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THE USE OF TEACHING METHODS AND STRATEGIES AND HOW THEY AFFECT THE  
STUDENT AND TEACHER CLASSROOM DYNAMICS

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## **Abstract**

There are many different teaching methods and strategies that are used in pedagogy, and it is critical that teachers understand and know the benefits and negatives of each method. Teaching methods can affect classroom dynamics, so knowledge of these methods can enhance or diminish interaction between students and teachers in a classroom. Although there is no evidence that one teaching method is more effective than the others, studies have shown that there are some methods that have greater impact on classroom dynamics. The results of the studies in this literature review show that the use of methods such as differentiation, blended learning, student-centered learning, and feedback in a classroom have the most influence on students' learning experiences. However, a combination of each teaching method can target the learning goals and needs of every student.

*Keywords:* teaching methods, classroom dynamics, pedagogy, student educational experience

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## Introduction

Since the beginning of the twenty-first century, pedagogy has transitioned from the traditional teaching method to a practice that is more advanced and inclusive. However, teacher-centered pedagogy and standardized testing are making this transition difficult and hindering the potential of education for students. “A growing body of research points to the limitations of traditional teacher-centered pedagogy in fostering a holistic education that respects the students’ intellectual and emotional integrity and capacity to become independent learners” (Kolb & Kolb, p. 45). Teachers today are finding ways to incorporate more modern approaches to education that encourage and motivate students to learn. These new methods that are being used in education incorporate student responsibility and accountability to foster growth and independence. “For many scholars and educators, the accommodation of learning styles is a determining factor in maximizing students’ academic performance” (Muro & Terry, 2007, p. 53).

Teaching and learning can both be rather difficult tasks if not done in an organized, thoughtful, and strategic manner. All students are different and preferred learning methods vary depending on age and personality types. Each student learns at a different pace and in a different form, so it is important that students find their preferred methods of learning. Correspondingly, it is crucial that teachers find a way to incorporate every learning method in their classroom setting to provide smooth learning for each student. Although this can be a tricky task, the correct knowledge of teaching methods can advance an average learning experience to an exceptional one. The different teaching methods that can be utilized include online learning, experiential learning, differentiation, blended learning, game-based learning, small group instruction, and student-centered learning. When used alongside one another, these methods allow for an exceptional learning experience that enhances students’ education. The following text compares,

contrasts and explains each method in detail with summarizations of all as well as the pros and cons of each method. The goal of this literature review is to discover what teaching method(s) work the best and what is the most efficient way to educate students.

## **Literature Review**

### **Teaching to Test**

Education has become focused on teaching to test in the past few decades. This means that teachers are required to teach their students how to take tests in order to pass their standardized testing requirements. Standardized testing has negatively influenced education as schools and teachers are rated based on the scores that their students produce. This form of education is pointless and unbeneficial. Students are not learning important information like they should be because the main goal in schools these days is to perform well on tests. Bloom et al. (2015) state that “high-stakes testing and scripted curriculum in K-12 classrooms have resulted in the disempowerment of teachers as well as students” (p. 2). Teachers and students have lost all control of education resulting in a lack of interest and motivation for students and frustration for teachers. For students to want to learn and be interested in their education, their teachers must be able to make learning fun and interesting; however, the “teaching to test” curriculum does not allow for personalization and specialization of lesson planning. “Teaching to the tests has led to the adoption of teacher-centered pedagogical strategies to meet the time and content demands of the tests” (Bloom et al., 2015, p. 2).

Teacher-centered pedagogical strategies are focused on teachers giving students information that they must know to pass a test to see what they know. This is ineffective and sure to leave students uninterested and unmotivated to learn. When students are forced to sit in their seats and do nothing but listen to a teacher lecture all day long, they get bored and irritated. This



leads to a lack of attention being paid and rebellion among students. Teaching to pass standardized tests and teacher-centered pedagogy are ruining the education system and failing the students.

### **Standardized Testing**

Standardized testing is a requirement for schools across the United States. “Standardized educational assessments are measurement instruments designed to quantify test-takers’ abilities in areas such as literacy and numeracy” (Howard, et al., 2017, p. 109). Whether students are in their primary or secondary education years, all students are required to take standardized tests. Standardized or high-stakes tests are typically taken at the end of the year, and teachers stress about these tests all year long. These tests were made to determine how much information students learn throughout the course of the year. Schools and teachers are rated and judged from these tests, and many times these tests are not a good indication of what students learn rather a good indication of how well students can take tests. For this reason, teachers must teach students how to properly test take. Unfortunately, this results in teachers’ lesson plans consisting of teacher-centered pedagogy and teaching to test. These tests were originally designed to test students’ abilities in literacy and numeracy, but it is argued that some also “assess domain-general cognitive capacities” such as working memory and non-verbal reasoning (Howard et al., 2017, p. 109). As a result of this, it is unclear whether standardized tests indicate numeracy and literacy competencies or their domain-general cognitive capabilities. In some cases, standardized tests may not reflect individual students’ scores and competencies due to systematic bias within a test (Howard et al., 2017, p. 109). This can make it hard for teachers to determine what kind of educational support their students may need to improve their scores and understanding. Low scores may either be a result of insufficient literacy abilities or lack of numeracy knowledge or

skills making it difficult to pinpoint what type of remediation may be needed (Howard et al., 2017, p. 109). Since standardized testing can test multiple things, some argue that standardized testing may not be a valid indication of what a student knows; instead, it may be a better indication of students' reasoning skills and memorization capabilities.

### **Teacher-Centered Pedagogy**

In a teacher-centered pedagogy, the classroom dynamic is centered around the teacher. The teacher lectures the students, and at the end of certain chapters, students are tested on what they know. Teacher-centered pedagogy puts added stress on teachers because if the students are unable to perform on tests, the teacher is blamed. This style of teaching does not allow for students to have any sort of control over their education, and students tend to get frustrated because they have no say in how they learn. Bloom et al. (2015) state that “unless a new pedagogy materializes, students will become increasingly bored and unmotivated, and teachers will become even more stressed” (p. 2). For effective teaching, students must be interested in what they are learning, and it is also important that students be taught in a manner that they can understand. This style of learning is called learner-centered pedagogy. Unfortunately, “teachers are influenced by the larger educational culture of their schools, which can have a negative impact on the implementation of a learner-centered pedagogy” (Bloom et al., 2015, p. 3). In many states, “teachers and schools are rated according to their students' standardized test scores” (Bloom et al., 2015, p. 3).

### **Online Learning**

“Online learning is a form of distance learning or distance education, which has long been a part of the American education system, and it has become the largest sector of distance learning in recent years” (Nguyen, 2015, p. 309). Online learning is a popular choice for college

students, especially those who are working and/or those that have children and are not able to physically attend class due to lack of childcare or work conflicts. Many college students choose this method of learning so that they can gain a degree while continuing to be a present employee and/or parent. Over the past decade online learning has become increasingly popular due to an expansion in technology. There are both benefits and drawbacks to learning online. The term online learning can be interpreted in different ways, but this paper will focus on online learning in a remote setting. Hybrid and blended learning both use learning online in conjunction with face-to-face instruction, but these will be discussed later. “The internet has made online learning possible, and many researchers and educators are interested in online learning to enhance and improve student learning outcomes while combating the reduction in resources, particularly in higher education” (Nguyen, 2015, p. 309). Teachers may incorporate learning online to enhance their students’ learning experience by diversifying their days in the classroom.

### **Remote Online Learning**

Online learning took off in 2020 due to the pandemic, and it has become more common ever since particularly in higher education. After learning became strictly remote for a year, students’ eyes were opened to the possibilities of learning in a remote and comfortable setting. Being able to learn from a computer from the comfort of your own home is an appealing idea with many benefits. Some benefits of remote online learning include “its effectiveness in educating students, its use as professional development, its cost-effectiveness to combat the rising cost of postsecondary education, credit equivalency at the postsecondary level, and the possibility of providing a world class education to anyone with a broadband connection” (Nguyen, 2015, p. 310). Remote online learning allows students to complete their schoolwork anytime and anywhere.

## **Effective Use of Online Learning**

While online learning alone is an effective learning method, it is important to note that sometimes it is better used alongside other teaching methods. One way of combining online learning with another method would be mixing online class with game-based learning and allowing students to play games as assignments. This would encourage participation and aid in increased engagement for students. Online courses can tend to be less rigorous than traditional format which can lead to decreased student interaction and a lessened understanding of the material being taught. In addition, it is easier for students to get away with being dishonest about their work being their own and it allows for cheating on work more so than when doing work in a traditional classroom. It is important that instructors of online courses make their courses just as rigorous as traditional instruction to ensure that students are learning just as much. Also, measures need to be taken to keep students from cheating and being dishonest such as lockdown browser when taking exams.

In addition, it is critical that teachers of online courses find ways to keep students involved and active in their work and in the online classroom. The first step in encouraging interaction is making sure that the platform in which institutes use such as Canvas, Blackboard, etc. is easily navigated and user friendly. Students need to be able to access their work easily and communicate with classmates and/or their instructors without issue. It is easy for students to get overwhelmed or discouraged when it is difficult to find work or figure out when due dates are, and the accessibility to help from instructors is encouraging for students when confused. Moreover, when students see that their instructors are interested in what they are teaching and the work that they are asking of their students, it is easier for them to do said work. "Research has shown that how an instructor establishes their presence in online learning significantly

impacts the student experience” (Besser, 2023, p. 1) meaning that if the teacher is present then the student will most likely be present as well. It is easy for students to feel isolated when learning from home through a laptop, so knowing that there is a real instructor that is active online can be comforting and helpful for online students.

### **Benefits of Online Learning**

There are several benefits of online learning. Online learning gives working adults who may have children a chance to go back to school and receive a degree in a way that works around their schedule. Online schooling is a great way for students who are not comfortable in group settings and feel more comfortable doing their schoolwork remotely. Doing school online also gives students a sense of responsibility that traditional schooling may not. It teaches students responsibility, time management, promptness, and self-sufficiency. Online schoolwork can also be done anytime and anywhere making it easy to complete assignments in a timely manner.

### **Negatives of Online Learning**

While there are many benefits of online learning, there are also a few downsides to it as well. First, not all students have access to the internet making it difficult for them to keep up with their work unlike those who have internet at their homes. Secondly, online learning requires students to be more responsible and self-sufficient than students who physically attend class at a university. Students who attend university in a classroom can be reminded by their professors of upcoming work and due dates. Online learning students must remember to log on and check their due dates on their own which can cause them to fall behind or miss due dates. Lastly, online learning students are not exposed to social interaction with other students which can cause some to feel excluded from people and their professors. Students that choose this mode of education do not get to experience face-to-face interaction with their professors which can have a huge impact

on their learning experience. However, the next method, blended learning, makes up for what online learning on its own may lack.

### **Blended Learning**

Blended learning is a method of learning that blends traditional education with online learning to give students a mix of instruction in order to strengthen students' learning processes. "Blended learning is a blend of online and face-to-face learning which enhances students' self-learning and learning performances" (Al-Kahtani et al., 2022, p. 2). This method is also known as hybrid learning. This approach to learning has many benefits and a few disadvantages.

Blended (hybrid) learning or any use of online learning have become an established part of the higher education community. This method gained favorability with many students and teachers alike when schools were making the transition from remote to in class learning after COVID-19. Not to be confused with online learning, students get to meet with their teachers and peers face-to-face which adds extra engagement to learning that is not achieved by online learning alone. The hybrid approach can also be used as an opportunity for extra tutoring, support, or networking. Teachers can also utilize the online aspect of blended learning by providing online homework to their students that they meet face-to-face with during the weekdays. This method is most prominent in higher education as the flexibility, accessibility and improved interaction by students makes this learning approach favorable among many. With this approach it is critical to be effective to keep students engaged and satisfied with their learning environments.

### **Driving Factors of Blended Learning**

There are several driving factors of blended learning, especially in higher education. Online learning offers a more cost efficient and affordable approach to learning which attracts institutions to the idea. Blended learning is also an appealing idea to higher education students

due to its versatility. Betts et al., (2019) “With substantial reductions in state funding, increasing campus energy and operational costs, endowments generating reduced returns, and a national economic readjustment of unprecedented proportions, higher education must re-examine and reposition itself to meet new and emerging challenges” (p. 3). Blended learning is most prominent in higher education, and one reason is because it increases the number of students that both attend and graduate from the institution. “Online and blended programs provide new opportunities to expand current student markets by offering quality programming that supports the institutional missions, brand recognition, and expands an institution’s alumni base” (Betts et al, p. 3).

For institutions to be able to keep up with revenues and expenses, they must figure out a way to cut costs; offering hybrid learning is the way to achieve that goal. Not only do institutions have to cut costs, but they also must ensure that students are receiving quality education to compete with other colleges— “Recognizing that competing educational programs are now just *one click away*, quality is critical to retention and program sustainability” (Betts et al., p. 4). Institutions must find a way to also cut costs in the form of tuition for students to keep their attendance rates high. Offering the blended learning approach allows students to attend college without the possibility of mandatory room and board that some institutions require. “In addition, large class sizes, a lack of classroom space, and teacher dissatisfaction with the impact of face-to-face teaching due to the limited exposure to the target language that learners inevitably experience in timetabled classes may be significant factors in choosing to implement a blended learning approach in some contexts” (Hockly, 2018, p. 98). Most teachers are unable to fit their entire lesson plans in three hours a week. Offering an online classroom helps teachers provide

their students with as much information as possible for their students to be successful in their class.

Additionally, things such as pandemics like COVID-19 force students to learn mainly remotely if not completely online. COVID-19 came out of nowhere and took Americans by surprise—no one was prepared for what was about to happen. Schools, workplaces and even the government briefly shut down during 2020, so millions of Americans had to change course for a little while. For millions of college students, this change of course looked like online schooling rather than traditional in-person class instruction. Although this was a major change for many, it became an appealing format of education that changed several students' course of education. Blended learning opens students up to the best of both worlds; a mix of in-person and online schooling exposes students to dynamic, versatile, developing education that they would not see otherwise. Many students are attracted to the idea of an ever-changing school environment because it allows them excitement and alternation.

### **Benefits of Blended Learning**

Blended learning has become increasingly popular over the past few decades due to its flexibility and convenience. “Enhancing student learning experiences has become more important in higher education since the mid-1990s due to increased student enrollment and diversification” (Poon, 2013, p. 271). Poon also states that the blended learning approach “can influence students' perceptions of the learning environment and, subsequently, their study experiences, learning outcomes, and ultimate academic achievement” (Poon, 2013, p. 271). Having a mix of online work and in class instruction stimulates learners' minds because it offers different environments for them to work in with different types of work and approaches to learning. Poon (2013) states that blended learning “facilitates improved learning outcomes,



access flexibility, a sense of community, the effective use of resources, and student satisfaction” (p. 274). When students feel like they are a part of a community, it encourages them to be active and involved with discussions whether they be online or in the classroom. Critical thinking is encouraged with the online format, whereas that can be difficult for teachers to achieve face-to-face.

An addition of the inclusion of an online work environment has been proven to help students learn more proficiently. A report published in 2009 by the United States Department of Education included a meta-analysis about the effects of the use of online learning which found that “classes with online learning (whether taught completely online or blended) on average produce stronger student learning outcomes than do classes with solely face-to-face instruction” (Betts et al., 2019, p. 4). The use of online learning also allows students to work at their own pace, which teaches accountability and responsibility. Some say that the online learning aspect of blended learning is cost effective, too, which is a bonus to this approach. Blended learning is the most appealing learning approach for many nonworking and working adults including individuals that are “nearing retirement but cannot afford to retire” (Betts et al., 2019, p. 4). It offers those individuals “an opportunity to earn a new credential while maintaining employment or transitioning to a new career” (Betts et al., 2019, p. 4). Many universities require students in attendance to live on campus. This makes tuition for many unattainable causing students to be unable to attend certain colleges. This is where blended learning or online learning comes in to play in terms of cost efficiency; “with increasing numbers of nontraditional students seeking degree programs, at what point does affordability drive students to seek online or blended programs that do not include traditional residency-related costs, particularly if the graduate with the same degree?” (Betts et al., 2019, pp. 10-11).

## **Blended Learning Challenges**

There are challenges to blended learning, and most of them stem from the online portion of the blend. For some students it can be challenging to keep themselves responsible for their work online as they may struggle with self-accountability. Another issue that some have with blended learning is that not all students have access to the internet at home which makes it challenging for those students to keep up with their work when at home. Also, some students may struggle with figuring out how to use their computers to complete their work. However, teachers must also “be technologically competent, to effectively use and manage technology for teaching, and also to create and upload learning materials to students” (Rasheed et al., 2020, p. 2). When students are face-to-face in a classroom with their teacher, they can ask their teacher questions if they are having trouble. If students are working remotely from home, it may be an entire day before they hear back from their teacher if they send her an instant message or email. This can cause confusion and setbacks for students which is why critics will say that blended learning may not be the best approach for learning. It is also easier for teachers to help their students face-to-face in a classroom. Rasheed, Kamsin and Abdullah (2020) stated that “it is the responsibility of educational institutions in providing the necessary training and technological support to both teachers and students in order to ensure the effective utilization of the available technology, and in addition, to efficiently utilize the online component” (p. 2).

## **Online Learning vs. Blended Learning**

Online learning and blended learning are similar in the sense that they both use the internet to enhance learning and they both offer a different perspective of education. While online learning is simply education online, blended learning is a mesh of both in person instruction and online learning. Online learning is utilized mostly by higher education students

that cannot physically attend school. Blended learning is mostly utilized in grade school as a way to change up the school experience to make education interesting.

### **Experiential Learning**

Experiential learning is a concept in which students are engaged by hands-on experiences which allows for “learning by doing” and can also be defined as “learning through reflection on doing”. This theory stems from constructivism which is based upon “the idea that learners build on their existing foundation to learn new information” (Western Governors University, 2020). “In its most simple form, experiential learning is constructing knowledge and meaning from real-life experience” (Yardley et al., 2012, p. 161). This method is great for students who learn by doing things “hands-on” and is a great tool which allows for reflection of concepts. It creates student engagement with the topic at hand as well as teacher engagement. A deeper understanding of concepts can be achieved with experiential learning, which is why it is a popular teaching method. Schreck, Weilbach & Reitsma (2020) state “Experiential learning stimulates original thinking and develops a wide range of thinking strategies and perceptual skills which are not called forth by books or lectures” (p. 1). McCarthy (2016) states that “previous research has shown that learning styles are influenced by personality type, educational specialization, career choice, current job role and tasks, and cultural influences” (p. 92).

### **Kolb’s Model of Experiential Learning**

In 1984, David Kolb published a model of experiential learning which focuses on learners’ thought processes. Bergsteiner et al. (2010) “Kolb’s theory posits that learning is a cognitive process involving constant adaptation to, and engagement with, one’s environment” (p. 30). The core belief behind experiential learning is that one’s environment and their ability to adapt to changes in environment shape their learning process. Kolb believed “learning is a

holistic process and results from synergetic interactions with the environment, with people making choices about which parts of the environment to engage with” (Bergsteiner et al., 2010, p. 30). “Kolb’s learning style theory integrates individual students’ approaches to perceiving and processing information” (Muro & Terry, 2007, p. 53). Kolb believed that learners have two different modes, perceptual and internalization. The perceptual modes ranging from feeling and thinking, which he interpreted as concrete experience and abstract conceptualization, and the internalization modes ranging from doing to watching which he interpreted as active experimentation versus reflective observation. Kolb also believed that there are four different learning modes: diverger, assimilator, converger, and accommodator. Muro and Terry (2007) “when students complete the inventory that is derived from the model, they can gain additional insight into their own preferences and explore approaches that will maximize their learning performance in a variety of contexts” (p. 59). Using Kolb’s model can help students figure out which learning method works best for them. Kolb’s model can also help teachers better understand how students learn best and how to incorporate all learning styles into their lessons.

### **Constructivism and How It Relates to Experiential Learning**

Constructivism is a learning theory that “is based on the idea that people actively construct or make their own knowledge, and that reality is determined by your experiences as a learner” (Western Governors University, 2020). Constructivists believe that learning is active rather than passive, while experiential learning theorists like David Kolb believe that learning is a mixture of both active and passive learning. The idea of constructivism portrays that students must use their own knowledge that they already have to learn new information and transform their minds; students must actively use their minds to obtain new information and ideas.

There are several principles of constructivism that are the basis of the theory; these include knowledge is constructed, people learn to learn as they learn, learning is an active process, learning is a social activity, learning is contextual, knowledge is personal, learning exists in the mind, and motivation is the key to learning (Western Governors University, 2020). It is critical that teachers understand this concept due to its ability to “enhance(s) students’ logical and conceptual growth” (Olusegun, 2015, p. 66). Classrooms that apply the constructivism theory of learning tend to be laid back and lack structure which can be chaotic, but students do tend to respond well to this type of learning. In a constructivist classroom, teachers act as a guide or facilitator rather than instructor because students are guiding their own learning. Western Governors University (2020) “Constructivist classrooms focus on student questions and interests, they build on what students already know, they focus on interactive learning and are student-centered, teachers have dialogue with students to help them construct their own knowledge, they root in negotiation, and students work primarily in groups”.

The relation between the constructivism theory and the experiential learning theory is that experiential learning theory is a narrower topic which relates to constructivism by deducing the active learning theory into learning that is based on experiences and hands-on work. In other words, experiential learning is a theory that states that learning is hands on, and things are learned through experiences while constructivism is vaguer in that people learn by building on previous experiences. Constructivists believe that as learners “perceive each new experience, learners will continually update their own mental models to reflect the new information, and will, therefore, construct their own interpretation of reality” (Olusegun, 2015, p. 66). Experiential learning theorists believe that students learn by doing things hands-on, which is a branch from

constructivism. Both theories are focused on student-centered learning, and they value the students and their progress.

### **Student-Centered Learning**

Wong (2021) “Student-Centered Learning (SCL) is a paradigm that places students in the driver’s seat of the learning process, allowing them to decide for themselves what they need to learn and how they might learn it” (p. 93). The pedagogical requirements of classroom dynamics have evolved since the beginning of the 21<sup>st</sup> century, and teachers must meet the new standards of education; education is becoming more student-centered, and less teacher centered. “Student centered learning teaches students to be independent, have self-regulation, and take responsibility for their learning activities, and manage themselves in the learning process” (Agustini et al., 2021, p. 1). Student-centered learning encourages students to think critically, and problem solve. In student-centered learning, teachers focus on mediating student learning rather than guiding and controlling what the students are supposed to be learning. This method of learning requires teachers to take a backseat and let their students take the task of learning into their own hands. Like online or blended learning, student-centered learning forces students to be motivated and have self-regulation.

When students oversee their own learning, it is critical that they can keep themselves on track and focused. “A student will get good learning outcomes if the student is aware and responsible in the learning process and knows how to learn efficiently” (Agustini et al., 2021, p. 3). As times are changing, the education system is evolving as well. Many would argue that our education system needs to be ‘fixed, and many believe that student-centered education is the solution. “Instead of maintaining the current, adult-centered, hierarchical structure where students are the receivers of a predetermined set of knowledge, we argue it’s time to redesign the

model and system of schooling with students at the center” (Kaput, 2018, p. 7). Montessori education is a popular method of student-centered learning that embodies every aspect of what SCL is, and Montessori education is becoming more and more popular among parents each year due to its nurturing nature.

### **Benefits of Student-Centered Learning**

Student-centered learning allows students to be in control of their education, and students typically respond well to this teaching approach. Students are allowed to determine what their days should look like and choose to learn the way in which they learn best. Being able to schedule their own school days allows for students to optimize their time. This method teaches students accountability, responsibility, critical thinking skills, problem solving, self-regulation, and self-reliance. SCL allows for personalization and ownership of one’s education, and this may encourage students to put more effort into learning. The SCL approach in grade school prepares students for higher education because college requires students to depend on themselves to complete their work. College professors do not coddle or keep up with which students turn in what work. Professors’ jobs are to present students with work and information that students must know to pass their classes, but they are not expected to help remind students to do or turn in their work on time. Applying SCL to classrooms at all ages allows for maturation and growth which will help student development. For these reasons, it may be a good idea to implement student-centered learning into primary and secondary education. However, critics would disagree and say that the cons outweigh the pros.

### **Disadvantages of Student-Centered Learning**

Although there are several benefits to student-centered learning, there are a few disadvantages that should be addressed as well. Students and teachers both may say that the time

and energy that goes into student-centered learning is not worth the few benefits that come from SCL. Teachers might argue that “preparation and execution of SCL is greatly time intensive, and that it is difficult to ‘cover everything’ in the course content” (Sorensen et al., 2023, p. 3).

Because every student is different, some students may excel and be able to rise to the challenge of SCL while others may struggle. SCL requires students to practically create their own learning tactics for certain learning objectives without teachers’ guidance and control. Some students find this method ambiguous and demanding which makes it hard for them to rise to the challenge.

Rather than beneficial, some students find SCL stressful and challenging. These same students may require extra attention, guidance, and time, so perhaps “bi-directional student-teacher feedback and guidance” (Sorensen et al., 2023, p. 3) may be a more conventional approach to SCL.

### **Montessori Education**

Montessori education was founded by Dr. Maria Montessori in the early 1800s (National School Choice Week, 2023). Montessori education is a type of student-centered learning in which an educational environment is created to be a nurturing place that allows students to choose their own work. “Montessori pedagogy has features that enhance wellbeing contemporaneously and predictively, including self-determination, meaningful activities, and social stability” (Lillard et al., 2021, p. 1). Denervaud et al. (2019) “Children are free to choose their own learning activities from a specific set of sensory and self-corrective materials, without external feedback such as grades or evaluations” (p. 2). “Some of the hallmarks of Montessori education include: multi-age classrooms, learning equipment made of ‘real’ materials such as wood and ceramic rather than plastic, and self-paced learning” (National School Choice Week, 2023). Montessori education has gained much traction over the last century, and it continues to



become more and more popular each year. This type of student-centered learning focuses on students' sense of self, confidence, and curiosity which makes it such a valuable method of education. Some argue that Montessori education offers more benefits than traditional education, and "at least when strictly implemented, Montessori education fosters social and academic skills that are equal or superior to those fostered by a pool of other types of schools" (Lillard & Else-Quest, 2006, p. 1894). There are several studies that show the benefits and success of Montessori education compared to traditional classroom settings.

A study conducted in 2006 by Lillard and Else-Quest found that "by the end of kindergarten, the Montessori children" --as opposed to non-Montessori children—"performed better on standardized tests of reading and math, engaged in more positive interaction on the playground, and showed more concern for fairness and justice" (Lillard & Else-Quest, 2006, p. 1894). Lillard also performed another study in 2021, and the results of that study are as follows. "A structural equation model that accounted for age, gender, race, childhood SES, and years in private school revealed that attending Montessori for at least two childhood years was associated with significantly higher adult wellbeing on all four factors. A second analysis found that the difference in wellbeing between Montessori and conventional schools existed even among the subsample that had exclusively attended private schools. A third analysis found that the more years one attended Montessori, the higher one's wellbeing as an adult" (Lillard et al., 2021, p. 1). In other words, Montessori education has the ability to impact students on a long-term basis and can positively influence one's well-being as an adult.

Denervaud et al. (2019) assessed two hundred and one students; half of the students in the study were from Montessori settings, and the other students attended school in a traditional setting. They "evaluated scholastic development in a cross-sectional study of kindergarten and

elementary school-age students with an emphasis on three core executive measures of cognitive flexibility, working memory update, and selective attention (inhibition)” (Denervaud et al., 2019, p. 1). Denervaud et al. (2019) found that “Montessori participants outperformed peers from traditional schools both in academic outcomes and in creativity skills across age groups and in self-reported well-being at school at kindergarten age” (p. 1). The study also “revealed a significant impact of creative skills on academic outcomes influenced by the school experience” (Denervaud et al., 2019, p. 1).

Overall, Montessori education has shown that the use of a nurturing, student-led educational environment can positively impact the minds of young students. “A logical model for Montessori education predicts that Montessori features like choosing one’s activities, using real, hands-on materials, and collaborating with peers would result in a range of positive personal and social outcomes” (Lillard et al., 2021, p. 2). Montessori education has been proved to enhance creativity, well-being at school, and both cognitive and socio-emotional intelligence due to its encouragement of self-corrective and sensory materials and lack of grades and evaluations. “The materials are designed so that if children make mistakes, they can see and correct them without close teacher supervision or intervention” (Lillard, 2013, p. 159) which helps students develop a sense of independence and helps to develop critical thinking skills. “Choice and its progeny, a sense of control or agency, have been shown to predict stronger intrinsic motivation, self-efficacy, happiness, and a sense of competence” (Lillard et al., 2021, p. 2). Montessori education is an excellent method of student-centered learning that is proven by research to have many benefits and positive impacts.

## **Montessori Education and Children with ADHD**

Montessori education can be a helpful tool for students with attention-deficit hyperactive disorder (ADHD) because it allows the student to lead their own education. Students with this disorder have a hard time being still and paying attention in a traditional classroom setting, but the nurturing nature and use of sensory materials in Montessori education can help a student with ADHD to learn and focus. Gkeka et al. (2018) define attention as “a cognitive process in which mind concentration is accumulated on particular environment stimuli” (p. 5). The Montessori method allows students to choose which educational environmental stimuli they want to work with which is why this method has the potential to be beneficial for a student with ADHD. “One of the most crucial factors in the Montessori Method is paying attention to inclinations and willingness of children in the primary stages of education” (Gkeka et al., 2018, p. 5). In a way, it seems likely that the Montessori method was designed for children that have trouble focusing and staying on task because “Maria Montessori saw that children stay concentrated long enough if they are interested in the materials they are working with” (Gkeka et al., 2018, p. 5). As previously stated, Montessori education uses real materials such as wood and ceramic which adds a certain dynamic to education that is missing in traditional classrooms. Use of these materials can be intriguing to students because these are materials used in the real world.

“The Montessori Method will benefit children in the following ways: a) Building concentration skills and an active mind: children working as if the teacher does not exist will lead them to identify errors on their own and correct themselves. b) Perspective of the world: Montessori sensorial materials demonstrate attributes of objects (volume, length, temperature, color). c) Build self-esteem: by working on their own, children will realize that they are able to succeed at difficult tasks if they try long enough. d) Social skills: by acting towards each other

with ‘grace and courtesy’ they will begin to consider a Montessori classroom as a social environment” (Gkeka et al., 2018, p. 5). It can be argued that students can also learn these skills in a traditional classroom setting, but children with ADHD struggle to pay attention to instruction if not being stimulated properly. Being able to move from task to task at their own pace can benefit children with ADHD by tapping into their hyperactive nature. A Montessori style classroom lets attention deficit children thrive in an environment designed to encourage students to move around the classroom and experience different strategies, stations, and materials at their own pace.

### **Game-Based Learning**

Game-based learning, also known as gamification, is a teaching/learning approach that takes gaming principles and implements them into learning activities to introduce new concepts and engage students in learning. This approach allows students to enjoy themselves while learning at the same time which, in turn, encourages student engagement and achievement. Game-based learning can be used in all grade levels including post-secondary education. It is critical that teachers find ways to encourage young people to be present during school. “Young people develop their identities in light of flexible communities in which new technologies play a major role: they like to be connected, need immediate responses, require social interaction, and desire experiential learning” (Admiraal et al., 2011, p. 1185). There are studies that “pointed out that game-based learning might be superior to traditional classroom instruction as it could increase students’ motivation for learning and provide them with opportunities to explore and acquire new knowledge and skills” (Qian & Clark, 2016, p. 51).

## **Designing Effective Educational Games**

For students to effectively learn from a game-based method, they must be involved mentally and actively interact with the game. The authors of the article *Aspects of Game-Based Learning* state, “To support learning we have to create appropriate mapping of education and engagement” (Pivec et al., 2003, p. 219). The authors also explain that in order to create an effective educational game, steps have to be taken. These steps include: reflecting upon didactical approaches and related topics and defining clear goals for the activities. Pivec et al. (2003) explain that the constructivist theory, an explanatory approach to learning, should be followed which include the characteristics of: “interaction, coping with problems, understanding of the whole, etc” (p. 220). There are seven pedagogical goals that designers using this method take into account: “1) to provide an experience with the knowledge-construction process, 2) to provide experiences encouraging appreciation of multiple perspectives, 3) to embed learning in realistic and relevant contexts, 4) to encourage ownership in the learning process, 5) to embed learning in social experience, 6) to encourage the use of multiple modes of representation, and 7) to encourage self-awareness of the knowledge construction process” (Pivec et al., 2003, p. 220). Because it is so hard to reach deep levels of learning through educational games, “designing games for specific educational purposes presents an interdisciplinary challenge as it requires a deep understanding of game design theory, knowledge of the academic topic, and a foundation in relevant learning theories” (Qian & Clark, 2016, p. 51).

## **General Effectiveness of Game-Based Learning**

Although many may argue that GBL is an effective teaching method that helps student engagement, it is tough finding evidence to support that claim. There are so many types of educational games readily available for teachers to utilize in their classrooms which may help

students to learn information, but are these games useful for deep and long-term learning? In two experiments performed by Erhel and Jamet, they sought to identify conditions that make DGBL most effective. They studied both learning instruction and entertainment instruction. “Results showed that the learning instruction elicited deeper learning than the entertainment one, without impacting negatively on motivation. In our second experiment, we showed that if learners are given regular feedback about their performance, the entertainment instruction results in deep learning” (Erhel & Jamet, 2013, p. 156).

### **Types of Games Used in Game-Based Learning**

There are several types of educational games that teachers use to educate and encourage their students with. Computer/video games are a popular mode of gamification; in fact, they are the most prominent type of game that is used for educational purposes. Board games are another popular type of game used in classrooms to educate students with, and many teachers will have their students create their own board game based on the current lesson or information that is being taught. This is a good way for students to review the information at hand multiple times which encourages long-term memory therefore making the students more confident about the information they have learned. “Quest Atlantis and The Radix Endeavor provide complex holistic problem-based environments that can support active and situated learning, require authentic collaboration, and offer challenge and immediate feedback” (Qian & Clark, 2016, p. 51). Kahoot! is an online, popular quiz game that many teachers use to see what their students know, and many students find it a fun way to learn information. Another popular game of choice for teachers is Jeopardy. The opportunities for games used in education are endless which is why this is a popular teaching method for teachers and students.

## **Benefits of Game-Based Learning**

Game-based learning can have a positive impact on both students and teachers as it motivates and engages students causing them to learn more which helps teachers and students both meet educational goals. One key benefit of game-based learning is that students tend to not get as bored when learning through a game as they do when in an average classroom setting. According to Qian and Clark (2016), “research has showed that entertainment games are able to promote meaningful learning through providing players with adaptive challenge, curiosity, self-expression, discovery, immediate feedback, clear goals, player control, immersion, collaboration, competition, variable rewards, and low-stakes failure.” Games also add competition and make students think critically, which are two things that all students should know about. “Critical thinking skills include scientific reasoning, systems thinking, computational thinking, decision making and problem solving” (Qian & Clark, 2016, p. 51). Social interaction is another benefit of adding gamification to classrooms; enabling students to play games with/against each other helps students to get out of their shell and connect with their peers. Compared to the traditional lecture to testing aspect of education, gamification encourages competition, social interaction and critical thinking which are things that cannot be included in a teacher’s lecture. “Additionally, 21<sup>st</sup> century skills are difficult to evaluate using traditional assessment practices such as the popular standardized testing. Games, on the other hand, necessitate the development of 21<sup>st</sup> century skills which are valued in the new digital economy and provide a means of assessing these hard to evaluate skills” (Qian & Clark, 2016, p. 51).

## **Small Group Instruction**

Small group instruction is a teaching method in which instructors divide their class into small groups of three to five students to help students who are struggling with information which

improves engagement and participation. Smith et al. (2022) “by meeting with students in smaller groups, teachers hope to differentiate instruction to varied student needs, provide specific feedback and support to accelerate student learning, and even build relationships and promote positive social interactions” (p. 348). Another way that groups can be divided is by allowing students to pick their groups. Students picking their own groups can be both beneficial and a hindrance; students like being able to work with their friends or people they know, but this can also cause lack of attention and room for students to slack off.

This type of instruction can be used in all types of education from mathematics to reading, and it has also been proven to be effective in special education. Small group instruction has been proven to be effective at all age levels from primary education to postsecondary education. No matter what age, subject, or ability levels of students, small group learning is a method that can be beneficial for all students because of the classroom dynamics it creates. It allows students to receive extra help that is not achievable in a large group setting. It also allows students to be surrounded by other students that are on the same level and may be struggling with the same concepts or curriculum. For small group instruction to be effective, instructors must ensure that student groups have structure and know correct learning behavior. Instructors must also keep students on task and ensure that students participate and actively learn.

### **Benefits of Small Group Instruction**

Including small group instruction into classroom dynamic is beneficial in several ways. Whether the small groups are to help struggling students or to engage students that have no issues with learning, this method keeps students engaged and allows for one-on-one teaching and mentoring. “When researchers have examined the effects of small-group or one-on-one instruction in targeted skills across many studies, they have consistently demonstrated positive



effects of such instruction” (Smith et al. 2022, p. 349). Small group instruction also allows for social interaction and peer support; students can learn a lot from their peers. “One potential benefit that may be derived from participation in small group instruction is the opportunity for students to learn additional, educationally relevant information by observing their peers” (Farmer et al., 1991, p. 190).

In a study produced by Kirkebøen et al. (2021), the results showed that “low-performing students predicted to receive small-group instruction by newly trained teachers increase their average test scores by about 6 percent of a standard deviation in the year following the intervention. The share of low-performing students is reduced by about 3 percentage points, corresponding to a reduction of 5-25 percent for different measures of low performance” (p. 5). They concluded that “small-group intervention is cost-effective” (Kirkebøen et al., 2021, p. 5). The most substantial benefit that small group instruction brings is that no matter what age group or the abilities of the students, this method is an effective teaching strategy that encourages participation and has been proven beneficial in numerous studies worldwide. “When provided as intervention or supplemental grouping, small-group instruction is at least as effective, and can be twice as effective, as whole-group reading” (Smith et al., 2022, p. 349).

### **Small Group Reading Instruction**

Reading instruction in small groups is beneficial for several reasons. Whether it be to help students in special education, students with learning difficulties, or students that have social deficits, small group instruction has been proven to help students in more ways than one. Foorman & Torgesen (2002) argue that “by coordinating research evidence from effective classroom reading instruction with effective small-group and one-on-one reading instruction we can meet the literacy needs of all children” (p. 203). Many students struggle with reading and

find it intimidating, but dividing students into small groups can take the intimidation away and allow for students to discuss and interact with other students that may be struggling with reading in the same way.

Stacy L. Weiss (2013) describes how to effectively execute small group reading instruction in a general education classroom. Weiss' views are those of someone who sees benefit in small group instruction. The main idea of her article is learning-related behaviors and how they assist in small group reading instruction. "Even in small groups that have a clearly defined and consistent structure with research-based reading instruction, some students will need additional support from the instructor to stay on-task and actively participate in the group" (Weiss, 2013, p. 295). Weiss believes that small group instruction is beneficial for not just learning how to read but also teaching other valuable behaviors. Weiss (2013) states "although this small group environment is designed to teach students how to read, it also provides an opportunity to develop students' learning-related behaviors including attending to task, follow directions, persisting with challenging tasks, and working independently" (p. 294-295). Effective teacher intervention and instruction during small group reading and one-on-one reading have the potential to shape the minds of young readers and develop strong reading habits.

### **Maximizing Small-Group Reading Instruction**

"One explanation of why so many students lag in reading, especially in at-risk schools, is that general education teachers may lack sufficient knowledge or school personnel required to help the large numbers of students failing in whole class instruction" (Kamps et al., 2008, p. 101). For this reason, implementing small group reading instruction can be beneficial because it is easier to instruct smaller groups of students rather than a whole classroom. Although small group reading instruction has the potential to be extremely beneficial for students, it must be

implemented correctly to be effective. Foorman & Torgesen (2002) “Findings from evidence-based research show dramatic reductions in the incidence of reading failure when explicit instruction (in these components) is provided by the classroom teacher” (p. 203). Foorman & Torgesen (2002) state that phonemic awareness and phonemic decoding skills, fluency in word recognition and text processing, construction of meaning, vocabulary, spelling, and writing are components of reading instruction that are always present during both prevention and intervention. Clear instructions and guidance on reading education is crucial for clear understanding by students.

A teaching and learning guide from the *International Literacy Association* describes the best way to maximize small group reading instruction. The first point of the guide explains why differentiation by text level likely does not work. They argue that by teachers differentiating and grouping students based on text level, they may not be directly meeting students’ needs. The example they give is “If Amir is in group M and struggles with decoding and encoding vowel teams, how are we ensuring he masters them just by having him in a certain level of text? Phonics instruction is incidental, at best, when differentiating this way” (Smith et al., 2022, p. 349). In addition, they argue that teachers may not be able to give accurate feedback or facilitate growth when students are accidentally reading texts that are too easy due to incidental phonics instruction. The authors of the guide then proceed to focus on what can be done to maximize the effectiveness of small group reading; the basis is to “shift from differentiation by text levels and instead differentiate by reading skills needed” (Smith et al., 2022, p. 349).

The first step of the shift would be to assess the students to learn what they know and then group them accordingly. They recommend that for readers in the beginning stages, “a battery of initial assessments” should be done “to fully understand the child’s strengths and areas

of need” (Smith et al., 2022, p. 350). The battery should involve assessment of students’ knowledge of the alphabet and phonics. Additionally, if students’ scores and assessments vary, observation of the student should be done to further assess the students’ knowledge. When forming the groups, the guide suggests doing the grouping “based on one of three instructional foci: (1) decoding, (2) fluency, and (3) comprehension” (Smith et al., 2022, p. 351). It is recommended that teachers keep the number of groups in their classroom to three or four to keep things more manageable, and “once students are able to access grade-level text fluently, we suggest using the same text for the different groups” (Smith et al., 2022, p. 351). This allows teachers to manage their students better, provide better feedback, and encourage more growth and better understanding for the students.

The guide goes on to explain other things teachers should focus on when grouping students for reading instruction; another way to group students is by how they perform on the basics of reading such as decoding and encoding words, automaticity and fluency, text comprehension, etc. It is also important that teachers focus on choosing the right books for their students to read. The guide recommends choosing books based on the purpose of content, whether the books are decodable or not, and whether the books support specific issues students are facing when reading. Lastly, the guide encourages teachers to give clear directions and feedback when grouping students for small-group reading instruction. The authors (Smith et al. 2022) argue that “without question, the top benefit of small-group reading instruction is that it affords teachers the opportunity to witness and support students’ actual reading progress” (p. 353).

Proximity of teachers to the groups when providing feedback is essential so that all students in the groups can be heard and guided. Setting a clear purpose and “providing explicit directions

about the target of the lesson” (Smith et al., 2022, p. 354) is key to making small-group instruction work in terms of time management. As far as feedback goes, it is critical that teachers let students know how well they are doing and what the teachers have seen the students improve on, etcetera. Smith et al. (2022) “Teachers should make sure to celebrate students now and again by reasserting for them what they are witnessing about their students’ growth” (p. 354). Students consistently look for encouragement from their teachers, and small-group instruction is the perfect way for teachers to ensure they are helping their students flourish and grow in their education.

### **Small Group Instruction and Social Skills**

Many students struggle with the social aspect of education. Whether it be a social deficit regarding peers or adults, some find it hard to interact with other people altogether. A social skills deficit can cause an impediment on a student’s entire educational experience. Small group instruction can positively affect students’ social skills with the right amount and type of teacher interaction. In a study that examined social skills instruction in relation to small group reading and self-monitoring, Miller et al. (2011) examined three students who were experiencing a social skills deficit. Miller et al. (2011) found that embedding social skills instruction into a reading lesson can improve students’ behavior. The results of the study showed that teacher engagement during small group reading instruction was directly correlated with on-task behavior.

Lane et al. (2003) performed a study in which students were put into small groups and given instruction on social skills over a ten-week period. “Results revealed lasting decreases in both disruptive behaviors in the classroom and negative social interactions on the playground. Students also experienced increases in percentage of academic engaged time” (Lane et al., 2003, p. 229). Students that struggle socially can benefit from small group instruction because it pushes

those students to begin positive communication with their peers and teachers at their own pace. Many students find being in a large classroom with several other students intimidating, but small group instruction gives those students a comfortable safe space to develop their social skills. Social interaction is a large part of education, so social skills must be prominent in order to succeed. Delivering social skills instruction in a small group setting can be beneficial for all students, not just those with behavioral disorders or social anxiety.

### **Small Group Instruction in Special Education**

Both teachers and special education students struggle to meet students' educational needs when special education students are taught in a traditional group setting. Small group instruction can help both parties achieve students' educational goals because it allows teachers to work one-on-one with students and focus on what their students are struggling with. Autism is a specific disability that affects many students in education worldwide. Devi et al. (2023) "Autism is a neurodevelopmental disorder leading to social and communication restriction, repetitive behaviors and interests" (p. 1). Students with autism struggle with education and learning due to their need for special instruction. "Students with autism often exhibit marked differences in verbal and nonverbal functioning and show a wide range of intellectual and cognitive abilities" (Devi et al., 2023, p. 2). Small group instruction is beneficial for these students with autism because it provides students with extra and more specified instruction that they would not receive otherwise. Students with autism and other neurological disorders need help in all areas of education including math. "Students with mathematical difficulties, including those with autism spectrum disorder (ASD), need explicit instruction on learning strategies in order to make progress in algebraic problem solving" (Root et al., 2018, p. 325). This explicit instruction can be

delivered via small group instruction enabling students to grasp the instruction in a more in-depth manner.

Tekin-Iftar and Birkan (2010) conducted a study of three children who had autism by delivering instruction on food and drink preparation skills in a group learning arrangement. The students “were able to acquire response chains by observing the other student in the group and appeared to generalize the acquired skills to similar response chains” (Tekin-Iftar & Birkan, 2010). For students with autism, working in a small group can be effective because those children are able to watch the other students and learn from watching them process information. This is beneficial due to a lack of social and communication skills prominent in children with autism. Repeatedly interacting in small groups allows autistic students to develop their social and communication skills at their own pace.

### **Combining Game-Based Learning with Small Group Instruction**

When an educator combines small group instruction with game-based learning, students are exposed to a substantial amount of social interaction, peer support, critical thinking, and one-on-one instruction in addition to an abundance of skills that will help them throughout their life. This can be accomplished by dividing a class into small groups, creating teams who are competing against their peers in other groups playing an educational game. Most students like being able to work with other students, especially in a competitive setting. This combination is sure to enhance students’ learning experiences, encourage participation, expedite engagement, and motivate students across the board. This combination of methods can be utilized in all subjects which makes them two of the best teaching strategies to use to improve engagement and student understanding.

### **Small Group Instruction vs. Differentiation**

Small group instruction and differentiation go hand in hand with one another. Small-group instruction is a type of differentiation also known as organizational differentiation. Both methods group students according to their “similarities – such as abilities, aptitudes, particular characteristics, or limitations” (Eikeland & Ohna, 2022, p. 158) which allows teachers to provide more focused feedback and specified help. The biggest difference between small-group instruction and differentiation is that differentiation is a broader method that uses multiple different methods to teach, while small-group instruction is simply just used to group students based on their similarities.

### **Differentiation**

Differentiation is an instruction method in which teachers may teach the same material to all students using a variety of different teaching strategies, or teachers may teach lessons at different levels of difficulty depending on each students’ abilities. Differentiated instruction engages students through “different approaches to learning, by appealing to a range of interests, and by using varied rates of instruction along with varied degrees of complexity and differing support systems” (Tomlinson, 2014, pp. 3-4). Differentiation allows for each students’ learning type to be satisfied. “The rationale behind differentiated instruction is that student diversity in heterogeneous classrooms requires a flexible approach to teaching that offers challenges and support to all students regardless of differences in interests, readiness, or learning profile” (Eikeland & Ohna, 2022, p. 158). It is a great way for students in big classes to be taught in a way that they feel confident and comfortable with the information being presented. However, it can be difficult to navigate, and it requires much of a teacher’s time and energy. Some argue that the benefits of this method are not enough to justify the added time that differentiation puts on



teachers. There are many different interpretations of the differentiation method of learning including the Scandinavian approach, differentiation as individualization, differentiation as adaptation to specific groups, differentiation as adaptations within diverse classrooms, and differentiation in a system perspective (Eikeland & Ohna, 2022, p. 157). Eikeland and Ohna (2022) describe differentiation as “a broad term that is both versatile and difficult to constrain”. This is due to the fact that it is used in many different aspects of education making it hard to give the method an exact definition.

### **Scandinavian Approach to Differentiation**

The Scandinavian approach to differentiation uses a ‘school for all’ methodology. This is a change from the previous tiered school system which “made use of organizational differentiation in the sense of ‘dividing students into groups or classes based on their assessed abilities and aptitudes for making use of the teaching’” (Eikeland & Ohna, 2022, p. 158). Organizational differentiation can be compared to small-group instruction as they both divide the classroom into groups based on their similarities. This grouping approach no longer served as an adequate approach when Scandinavia began switching to the ‘school for all’ approach. The ‘school for all’ approach is known as pedagogical differentiation. “Pedagogical differentiation is the Scandinavian term for differentiated instruction and is traditionally regarded as an educational tool ‘that seeks to maximise each students’ growth by recognizing that students have different ways of learning, different interests, and different ways of responding to instruction” (Eikeland & Ohna, 2022, p. 158). The Scandinavian approach is influenced heavily by Wolfgang Klafki, a German didactic. “Klafki distinguishes between a) external differentiation separating students into groups based on various selection and classification criteria, and b) internal differentiation involving all forms of differentiation conducted within a class or group” (Eikeland

& Ohna, 2022, p. 159). In other words, the Scandinavian approach to differentiation is differentiation at its core: using different teaching techniques to target different learning methods in order to meet all students' educational needs in a classroom setting.

### **Wolfgang Klafki's Concept of 'Didaktik'**

Wolfgang Klafki was a prominent researcher in German didactic theory (Bladh et al., 2018, p. 402). In fact, he was so prominent in German didactic theory that he conceptualized his own tradition referred to as 'Didaktik'. 'Didaktik' focuses on educational potential and evolving education into its best form. "Klafki's Didaktik can be seen, in effect, as an answer to the questions, "What it is to be human and what it is to educate?" (Friesen, 2021, p. 70). Wolfgang Klafki created two didactical models: categorical didactics and critical-constructive didactics (Meyer & Rakhkochkine, 2018). Klafki's categorical didactics is also referred to as categorical *Bildung* or formation. The objective of categorical *Bildung* is that "teachers should reflect on the knowledge aspects, that is, the meanings and values, that their selected content and chosen teaching methods could have for their pupils, in a broader and deeper sense (Bladh et al., 2018, p. 402). Klafki's goal in his development of categorical formation was to develop "important forms of tools for understanding concepts and perspectives, while making them meaningful to the pupils" (Bladh et al., 2018, p. 402). Klafki further developed the concept of categorical *Bildung* into his critical-constructive didactic model. His critical-constructive model brings key problems to the forefront of a curriculum. "Examples include: the question of peace, environmental issues or questions of nationality, the latter involving intercultural or social justice issues" (Bladh et al., 2018, p. 402). The driving force behind forming this type of curriculum is so that students could develop abilities such as self-determination, co-determination, and solidarity (Bladh et al., 2018).

Didactics can be defined as the activities of educating or instructing or activities that impart knowledge or skill. “If learning is something that happens in the mind or brain, something determined by eons of biological evolution, then to be human – to know what we know and act as we do – is to be a creature largely determined by our biology or our cognitive architecture. In the case of reconceptualist curriculum studies, on the other hand, to be fully human is to have ‘reconstructed’ both oneself and one’s world politically and psychologically – with education then taking the form of a ‘complicated conversation’ among those engaged in such reconstruction” (Friesen, 2021, p. 70). Rather than focusing on nature, Klafki and the European didactic tradition begin with culture (Friesen, 2021). Through education, according to this view, people are liberated from their ‘natural’ habits, passions, and dispositions to eventually become autonomous and responsible, both in their everyday lives and in the exercise of the knowledge and abilities gained through their education” (Friesen, 2021, p. 70). For this reason, Klafki views education as a way to mature and attain “the state in which one can assume responsibility” (Friesen, 2021, p. 71). This is why Klafki believes in the differentiation method of education.

### **Benefits of Differentiation**

Whether the students in a classroom have strong scholarly abilities or they struggle with learning, differentiation nurtures all students. Options of how students want to learn the information their teachers are providing are given and this gives students more responsibility for their education which motivates them to learn. Not all students are motivated by lectures and worksheets; instead, they need things such as games, videos, group work, etc. to grasp concepts. This method allows teachers to gather students who struggled with certain things in small groups with similar peers for extra help and more explanation. Teachers can ask the students who have mastered certain topics to give the students struggling detailed explanation of how they learned

the topic best or allow for peer tutoring. Many may say that the best thing about differentiation is the way it can be used in all subjects including special education.

### **Downsides of Differentiation**

Although differentiation has the potential to transcend education, there are also a few downsides to the method. Differentiation requires much thought and many hours of planning to be executed properly. As many already know, teachers are stretched for time anyways. Since this teaching method is composed of all teaching methods, teachers must be able to transition to different topics and learning methods quickly. If teachers are not able to adapt quickly and adjust their lesson plans, differentiation can become a daunting task quickly. Differentiation is a method that must be practiced, and training should be done prior to incorporating this teaching practice into lesson plans. Finding teachers that are able to instruct other teachers on this method can be time consuming and few and far between. There is already a need for teachers in this day and age which can make it difficult for teachers to include extra teaching methods in their plans.

### **The Importance of Feedback in Education**

At the basis of all research conducted for this paper, there is one key thing that helps students learn the most. Feedback is so important for a student's educational success. However, teachers must deliver said feedback correctly in order for it to be effective. The wrong deliverance of feedback can be detrimental to a student, and repeated negative feedback can cause students to believe that they are a failure. If a student begins to believe that they are a failure, it is hard to pull them out of that mentality. There are several factors that must be taken into consideration when delivering feedback to students including: sensitivity of the student, past feedback responses, learning abilities of the student, attitude towards education, etcetera.

Some students do not care about education and believe it is a waste of time. In this case, the feedback process can be challenging and difficult to navigate. “The student’s effort is a major contributor to the success of feedback” (Langer, 2011, p. 780). If feedback is delivered incorrectly, it can cause a student to shut down and/or create a negative connotation on education. When feedback is being given, both parties must be actively engaged in the feedback process in order for the feedback to be used in a corrective manner. Langer (2011) states that a “student’s responses during feedback may provide the teacher with some valuable insights into previous as well as planned instruction” (p. 778). Therefore, teachers can also learn from giving feedback to their students.

Emotions play a big role in our everyday lives, especially in school aged persons. “There is likely very little in the way of human behavior, no matter how simple, that does not have some accompanying emotional component” (Langer, 2011, p. 777). Langer (2011) explains how feedback can knock one’s confidence— “There are notable differences in a student’s reactions based on the response, and then finding out the response is wrong” (p. 777).

For feedback to be effective, it needs to be given immediately after an assignment, task, etc. Doing this allows for a deeper understanding of what the student did right or wrong and how they can correct it. “Feedback needs to provide information specifically relating to the task or process of learning that fills a gap between what is understood and what is aimed to be understood” (Hattie & Timperly, 2007, p. 82). In other words, teachers must be specific in their feedback, and the feedback must be able to explain how the student can correct their mistakes to understand the information that was missed or misunderstood. Additionally, even if feedback is delivered properly, teachers must ensure that their students are grasping the materials. “The teacher must provide probing questions as well as exercises” (Langer, p. 780) to help students

demonstrate their understanding of information. Teachers can provide feedback to their students until they are blue in the face, but feedback is an active process. After feedback is given, additional steps are needed to ensure that the feedback process is doing what it is intended to do. If the feedback process is executed correctly, it is a strong tool that has the potential to change the way students learn and store information.

### **The Effectiveness of Feedback**

There are many ways in which teachers can give their students feedback; however, the feedback process must be done correctly for the feedback to be effective. In a study done by Dawson et al. (2019), students and staff were asked what they thought made for effective feedback. Their responses were: feedback design, content of comments, and source of feedback information. The feedback Dawson et al. (2019) received during their study showed that the group of students and staff as a unit viewed source of feedback information as the least effective. However, the students and staff differed on which of the other two responses made feedback most effective; students viewed content of comments as most effective while teachers viewed feedback design as most effective. This could be due to the amount of time that teachers must put into feedback design that students do not see. Students are more concerned with the comments that result from the feedback design.

Another study showed that a different group of students desired more specific features of feedback comments such as “personal, explicable, criteria-referenced, objective, and applicable to further improvement” (Dawson et al., 2019, p. 31). Dawson et al. (2019) also found that what students found as the most effective part of feedback was “communicating what needs to be improved” (p. 32). Students in this study also stated that feedback needs to be clear, focused, precise, direct, detailed, specific, thorough, personalized, and/or individualized. Positive and

encouraging comments were also mentioned as helpful feedback. While some preferred specialized feedback, others liked receiving generic comments that were not tailored to specific students.

Based on these studies, it is evident that students do, in fact, find feedback from their teachers helpful and beneficial. However, in the eyes of students, effective feedback entails comments that are clear, concise, thorough, and personalized. For teachers to deliver effective feedback, much time and effort must be put in to ensure that their students' needs are met. If done correctly, teachers and students can both benefit from using feedback as a learning tool in the classroom.

### **The Effect of Positive and Negative Feedback on Emotions**

One factor that teachers must consider when delivering feedback is emotions and how students may react to their comments and constructive criticism. Belschak and Den Hartog (2009) explain this by saying “feelings are responsible for causing shifts in motivational focus and influence work behaviors” (p. 277). Teachers can single handedly have a positive or negative effect on their students by simply giving feedback. There are two types of feedback: positive and negative. Positive feedback includes praises and/or compliments which encourages students to keep doing what they are doing, and it can also inspire students to even improve. Negative feedback, however, highlights what students are doing wrong which can sometimes discourage a student and have adverse effects. “The broader literature on emotions suggests that providing positive feedback will generally lead to positive emotions, such as pride and happiness, whereas negative feedback will generally result in negative emotions, such as disappointment or guilt” (Belschak & Den Hartog, 2009, p. 276).

Belschak and Den Hartog (2009) explain that “the setting in which feedback is given is also likely to be relevant for emotional reactions” (p. 278). If students receive positive feedback in front of their peers, it is likely that said feedback will have an especially positive affect on that student, but negative feedback in front of peers can have an especially negative affect on a student. Negative feedback in front of peers is likely to embarrass students and cause them to shut down, so negative feedback is best given in a private setting. Both positive and negative feedback should be given to students to encourage growth and improvement, but it is critical that teachers are aware of their comments and setting in which the feedback is given to ensure that emotions are kept at bay. Students tend to view teachers as role models whom they respect, so what teachers say to students has the ability to make or break a student’s educational progress. Feedback is crucial to students and their educational growth.

### **Finding the Right Balance as a Teacher**

Teachers must be able to actively engage their students and keep them motivated while educating those students on literacy and numeracy skills and preparing them to take standardized tests. Trying to balance these things can be challenging. It is especially difficult for teachers to apply the teaching/learning methods discussed earlier when they are also having to prepare students for end of year testing. Teachers only get paid for the eight hours that they work five days a week, which is not near enough time for them to squeeze in everything that is asked of them. Most teachers only receive one hour of planning time per day which is not enough time to plan their teaching schedule for their students. Planning periods are just supposed to be designated time for teachers to create lesson plans, but many teachers must use their planning time to grade papers, tests, and/or projects. This forces teachers to work after hours during the week and on the weekend, making it difficult to find a good work/life balance. Some teachers



only allow themselves a few extra, unpaid hours a week to do things for work to ensure that they are not overworking themselves. Overworking can lead to burn out which is why there is such a shortage of teachers today. Teachers are tired of going the extra mile and doing a ton of extra work for the bare minimum pay. This is why it is critical that teachers find a good balance of school and home life.

## **Conclusion**

The use of different teaching methods can impact a classroom dynamic in both positive and negative ways. There are several different types of teaching methods, and each has its potential benefits and potential downfalls. Online learning, blended learning, experiential learning, student-centered learning, game-based learning, small group instruction, differentiation, and feedback are all useful methods and tools that teachers can use to enhance the educational experience for their students'. Although there is no proven right or wrong way to teach, using these methods in a classroom setting has the potential to maximize a student's learning and capacity for knowledge.

Even though these methods of teaching and learning have been proven beneficial with numerous studies, there is one thing standing in the way of teachers using them in the classroom. The traditional classroom setting on this day in time is most prominently teacher-centered pedagogy and teaching to test. Standardized testing has taken over the education system, and many teachers must teach their students how to take tests rather than focusing on the curriculum. This has caused a lack of interest in students and discouraged teachers. However, if pedagogy can stray away from teacher-centered pedagogy and teaching to test, using the methods presented previously can help to encourage excitement and eagerness to learn in the students of our classrooms.

There are multiple studies that have proven the benefits of the use of each of the methods, and using any combination of the methods adds diversity to a traditional classroom making it potentially more exciting and stimulating. However, the ability to use all the methods reviewed has the potential to accelerate a students' learning and education. Every student learns differently than the next which is why it is so critical that teachers do their best to enhance education and plan their lessons around each student.

Finding a way to meet every student's needs can be exhausting for teachers, which is why it is critical that teachers find a good balance between their school and home lives. Although effective, using a mixture of every teaching method has proved to be time-consuming and exhausting. For teachers to be their best selves for their students, teachers must first take care of themselves. A mixture of balance, hard work, determination, and experience can take an ordinary teacher to an excellent teacher. The use of all types of teaching methods is critical for maximum student engagement and understanding.

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