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Differentiation: Strategies and Educational Impact

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Abstract

Differentiation encompasses a variety of instructional strategies available to educators for use in the classroom to vary instruction based on student ability, learning style, and educational needs. Research indicated when utilizing differentiation in the classroom there are positive benefits for students in terms of motivation to learn and retention of information. Research has indicated a variety of differentiation strategies that can be used in the classroom for instruction in various areas of education, including but not limited to math, literacy, and assessment. Utilizing differentiated strategies will benefit the students and encourage teachers to plan engaging lessons that promote learning.

Differentiation: Strategies and Educational Impact

Each day around America in education and internationally teachers implement various teaching methods in classrooms. These teaching methods can be referred to as differentiation. Differentiation is working to address the abilities, interests, and needs of individuals, students (Sondergeld & Schultz, 2008). Simply stated differentiation is methods of instruction employed by teachers to meet the learning needs of students.

Various teaching methods are vital in a classroom made up of a diverse population of students. Teachers must meet the needs of all learners in the classroom. Teachers need to be aware of the student grouping in the classroom. Study students to know how to best instruct the group. Communicate with students by building routines and procedures. Teachers also must understand children can express what is being learned in multiple ways (Zuckerbrod, 2011).

Understanding how to differentiate in the classroom is important for teachers of students who are classified as having a learning disability. Meaning, the students may not necessarily have the skills required to be considered age or grade appropriate, but are able to learn with accommodations and modifications to curriculum.

It is important to remember students all learn differently and can demonstrate understanding of a lesson in various manners. There are four ways in which differentiation can be used in the classroom to reach students who are classified as learning disabled or for students in general who may struggle to learn content. First, provide material that is based on the knowledge there are varying ability levels in the classroom. Second, use lessons that are varied to meet student needs and learning style. Third, allow students to have a choice in what is completed in the classroom. Lastly, provide both quiet and group work to differentiate the classroom learning environment. Teachers can use all four or a combination of the four for successful differentiation. Differentiation is a key to successful student learning and retention of content.

Research

Current research studies have shown the benefit of differentiation for students and for teachers. It has been repeatedly shown through empirical data the nature to which differentiation can improve student growth educationally, as well as motivation to learn. Upon researching differentiation studies were noteworthy in positive demonstration of the benefits of differentiated classroom instruction.

Sondergeld and Schultz (2008) completed a study on the benefits of incorporating differentiated instruction into lesson plans. A teacher in an elementary school who was participating in professional development on differentiation volunteered her third grade classroom to be the subject of the study. There were 26 students in the class, 13 were special needs and 2 were gifted. The lesson chosen to be differentiated was a science lesson on simple machines. Students began with a basic lesson of simple machines and then were grouped by ability (Sondergeld and Schultz, 2008). Each group worked at their own pace on the material assigned to the group. The lessons were tiered based on three tiers; basic knowledge, application of knowledge, and exploration and evaluation utilizing knowledge.

Through the research study the teacher and the researchers evaluated student performance and student response, in addition to teacher response to the differentiated lesson. Students responded positively to the tiered lessons on simple machines. Most of the students favored the differentiated lesson (Sondergeld & Schultz, 2008). The teacher responded positively to the differentiated lesson and noted students were more engaged in the lesson. However, differentiating lessons is hard and takes more planning time than a traditional lesson plan. In conclusion the study remarks differentiation does aid with meeting the needs of a variety of students, but can be an extensive process in terms of planning.

Motivation and learning go hand in hand when working with students and working to differentiate lesson plans to engage students in learning and also provide lesson that are at the students' ability level. In a 2010 study completed by Fenner, Mansour, and Sydor differentiation and motivation were studied. Students were divided into three groups. Each group received differentiation strategies and then a positive reinforcer. Group one received hands on tasks, choice to choose a task, and lessons developed based on learning styles. Students also received praise for doing well. Group two received similar differentiation but also was given whole group instruction led to guided reading on student ability level. This group received reinforcement through positive feedback and positive calls home.

Group three also received similar strategies to group one and two, but as the reinforcement received positive emails home or phone calls.

Students were given pre and post tests to measure motivation and learning. Student progress was measured using surveys and exit slips. Exit slips were used at the end of class each day to measure student learning of content. The researchers found at the conclusion of the study student levels of motivation were the highest when differentiated lessons were geared towards the learning styles (Fenner, Mansour, & Sydor, 2010). The post-tests clearly indicated student scores were an improvement from the pre-tests when the interventions, differentiated lessons, were implemented. The researchers concluded that applying differentiation to leveled learners allowed students to grow academically and in turn helped motivate students to learn (Fenner, Mansour, & Sydor, 2010).

As indicated from each of the studies mentioned differentiation does play a positive role in student learning. Differentiation is not a teaching technique that all teachers can master in a relatively quick span of time, but with practice and careful planning can fully use strategies in the classroom that will be of benefit to student learning and motivation to learn.

Differentiation Strategies

Differentiation encompasses a wide variety of strategies that can be implemented in the classroom. It is a style of teaching requiring practice and patience. It requires understanding student population in the classroom. It also requires knowledge of how to work with students who are at varying ability levels in the classroom. Differentiation can take on a variety of forms, but there are three important ways in which to incorporate differentiation into the classroom; student ability levels, learning styles, and teaching strategies.

Student levels are important for any teacher to consider when approaching differentiated instruction. Students all work on varying levels and understanding those levels is vital to effective classroom functioning. A teacher must understand their students' independent, instructional, and frustration levels. Independent levels are what a student can accomplish independently given direction and reinforcement (Karten, 2005). Instructional level refers to what a student can accomplish with teacher guidance, but cannot independently complete the assigned task without specific instruction. Karten (2005) says the frustration level is when learning is too difficult for the student and this can lead to students' shutting down, becoming frustrated, or displaying an unwillingness to complete assigned tasks. Teachers need to be aware of where each student fits as far as ability to complete an assignment. Students need to be working at their independent or instructional levels. A teacher should never have a student work at their frustration level, as it will not allow for student progress. It is vital a teacher take time to observe student levels and take levels in to consideration when planning instruction and subsequent activities.

In order to understand student ability levels some examples were noted from Karten (2005). A student who is working at an independent level will be able to complete a unit on Native Americans. A student can fill out a chart independently about the lives of the different groups of Native Americans in the early colonial era.

The student does not need additional instruction and can complete the assignment with use of references such as the textbook. A student working at an instructional level will be able to read a grade level story with new vocabulary words. The new vocabulary, such as metaphor or similes, will have to be explained to the student by the teacher. The student will then be able to create a story utilizing the new vocabulary. At the frustration level the student would not be able to divide two-digit divisors without understanding basic multiplication and division. The student would need to work at their independent or instructional level and review basic facts with explanations by the teacher before moving on to divisors. As can be seen from the examples a teacher needs to understand where students are performing and where they can perform and where they cannot perform and base instruction on varying ability levels.

In addition to understanding student ability level a student's learning style also needs to be understood in the classroom. A learning style is the way in which an individual is able to concentrate on, process, and retain information (Lauria, 2010). For the purposes of education most teachers need to focus on the physiological elements to identify student strengths in terms of learning style. The physiological elements refer to whether a student is an auditory, visual, or kinesthetic, tactile learner. Understanding how a student learns best will aid with differentiation content material.

Auditory learners are learners who learn best through hearing content (Zukerbrod, 2011). For students who are auditory learners they learn best when they listen to a lecture. Strategies that can be used with an auditory learner are such things as a read aloud, listening center, discussions, and Reader's Theater (Zukerbrod, 2011). Teachers will want to make a classroom environment that reaches students through auditory lessons.

Visual learners are learners who like to watch the teacher and see visual representations of lessons. Visual learners learn best through the use of charts or pictures (Zukerbrod, 2011). Zukerbrod (2011) mentions a few beneficial strategies to use with visual learners; highlighting text, posters, videos, graphic organizers, illustrations, word walls, PowerPoint presentations, and drawings. For students who are visual learners teachers need to focus on lessons that gain student attention through the use of their sight.

Kinesthetic, tactile learners learn through hands on activities. They often do not want to listen to content or see visual representations of content, but would rather work with the content to complete a hands on task or project. Some strategies indicated by Zukerbrod (2011) include making clay models, "walk and talk" for discussions, movement activities, and role-playing. Teachers of kinesthetic, tactile learners need to be cognizant of allowing students opportunities to be hands on with content.

Understanding student ability levels and learning styles are imperative to successful instruction, but teachers must also have strategies readily available to implement in the classroom to support students in finding academic success. There are many methods in which to instruct using differentiated supports in areas such as literacy, math, study skills and review, and assessment. The supports are not limited to those listed. There are many resources available to teachers to aid with differentiation in the classroom.

Teaching and student learning are what encompass education. In order to increase student learning teachers could use adapted worksheet (Kluth & Danaher, 2010). The worksheets are modified to ability level of the student. An example would be assigning a student a worksheet on the three branches of government in a Civics and Economics class. The student could be given the opportunity to draw pictures that represent each branch instead of writing out the job of each branch of the government. This would be differentiating based on a student need. Another instructional strategy that could be used is cueing the important information. Cueing the important information is key when lecturing. This will allow the teacher to point out the content that must be learned. Students will have instant feedback on what they must know.

A teacher can also use graphic organizers to help students learn content. Graphic organizers come in a variety of forms. Teachers could use a KWL chart, story maps, Venn diagrams, and many other organizers. Graphic organizers allow students a visual representation of information and a resource for content. Teachers have an abundance of resources available to them to differentiate content when teaching and when working towards student learning.

Literacy is an essential topic in education. All students must learn how to read and write in order to be able to function in some capacity in the “real world.” To promote literacy a teacher can use various strategies. Kluth and Danaher (2010) give some examples as to how to assist students with literacy. Word walls are an excellent way to develop vocabulary skills. Students can use word walls to learn unfamiliar vocabulary or use a word wall as a way to remember learned vocabulary. For example a teacher uses a word wall as a way for students to learn vivid adjectives and assist with writing. The wall is made up of various adjectives that can be used in place of common adjectives for descriptive words related to the senses. Another is to use comprehension sticky notes. Students are to be given sticky notes prior to reading and as students read they are to write their opinions, thoughts, or points related to the reading in order to help them retain information. There are many other literacy strategies available to teachers to support differentiation in the classroom.

In addition to literacy, math is another central topic for educators. For students who struggle with math concepts a math helper may be beneficial (Kluth & Danaher, 2010). A math helper is a binder that may be made up of a multiplication chart, formula sheet, key words list to aid with word problems, or vocabulary words with definitions. For a student who has a disability in math or the student who struggles having the additional assistance is crucial at times for learning. For students who are visual learners math in sight may be beneficial (Kluth and Danaher, 2010). Math in sight is giving students visual information related to math such as number lines. Giving students the concepts visually will reinforce the content students are learning. Coded or cued assignments are also beneficial in a math class for differentiation. A teacher could highlight the operation signs or write the symbol for the operation signs above words for word problems. A teacher could also highlight the relevant information in a word problem. There are many other math strategies that can be utilized in the classroom. Gore (2004) and Kluth and Danaher (2010) are excellent resources for differentiation strategies.

Literacy and math are important aspects of education, as they are involved in many other content areas. However, students do need to understand how to study and review content prior to an assessment. Kluth and Danaher (2010) give excellent options for differentiation study and review assignments. One of interest is the beach ball review. Using a beach ball and a permanent marker write questions on the various colors of the ball. The students may toss the ball to one another and answer the question facing them. There are many different ways in which the beach ball can be used for review. For an activity requiring less movement a teacher can use guided notes. Guided notes could be in the form of a cloze activity where students need to fill in the missing answer. This can be great for lower students. For lower students include a word bank to assist students with filling in the cloze review assignment. There is not one differentiation strategy that works for all students, but teachers can use their resources to find other strategies that may be more beneficial to their population of students.

Lastly, assessments can be differentiated to meet student needs. Assessments can be adapted to meet the student's ability level, such as with modifications. Modifications can come in the form of hints or shortened assignments or both. Assessments can also be in the form of portfolios of student work. At times students do not perform well on formal assessments and a collection of their work is kept for reference of mastery of content. For a formative assessment exit tickets can be used. This is a quick and easy assessment of retention of information learned daily in class. Assessments do not have to be in a traditional format, but can be differentiated to meet student needs.

Differentiation strategies are important for a teacher to understand and utilize in the classroom. Students cannot all learn in the same manner and may require assignments be altered to meet their needs. The strategies mentioned are a few that are of interest, but many others are available.

Impact on Education

Differentiation can have an immeasurable impact on education. As with the study completed by Fenner, Mansour, and Sydor (2010) it can be determined differentiation has an impact on the quality of education a student is given and the retention of information. Studies continually indicate the positive results of utilizing differentiation in the classroom. Teachers need to educate themselves as well as be given profession development opportunities to learn about differentiation strategies available to students of all levels. Teachers who understand the impact of differentiation on education will understand the benefits to students in the classroom and will see a difference in the way in which students respond to instruction.

Conclusion

Differentiation is working to address the interests, abilities, and needs of students. Differentiation is using an assortment of strategies in the classroom to allow students to access content and at the same time be challenged to learn.

Not all classrooms are a homogeneous mixture of students; most classrooms are a heterogeneous mixture of students who all vary in ability and learning style. It is up to teachers and administrators to understand the mixture of students in each classroom

and work to meet the individual needs of students or the group. Using differentiation strategies benefit not only student learning, but will encourage teachers to plan lessons that are engaging for students, promoting retention of information.

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