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Differentiated Instruction in the Inclusive Classroom

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Abstract

Inclusive education has developed from the belief that education is a basic human right and that it provides the foundation for a more just and accepting society. The right to education Act (RTE) – 2009 necessitates the present day classroom to be inclusive in nature that is welcoming and is pedagogically capable of educating the naturally diverse population of students who arrive at its door. Differentiated instruction is the very foundations upon which teachers can create such classrooms. Differentiated instruction is a technique that teachers use to accommodate each student's learning style and instructional preferences. This strategy may involve teaching the same material to all students using a variety of instructional methods, or it may require the teacher to teach content at varying levels of difficulty based on the readiness, interests and ability of each student. The paper also highlights the rationale of differentiated instruction that lies behind Piaget's constructivist theory, Vygotsky's socio-cultural theory; Gardner's multiple intelligence theory, varied learning styles. The present paper focuses on the four areas by which the teachers can differentiate viz. i. through content: the information that must be learned, ii. process: The combination of activities and input from the teacher that engage the learner in the content, iii. product: The outcomes of student learning that demonstrate understanding or mastery, and iv. learning environment refers to how the classroom is designed to meet the needs of the students.

Keywords: Inclusive education, differentiated instruction, learning style, content, process, product, learning environment.

Introduction

Over the last few decades, the development of inclusion has become to central international education policy and has forced changes in legislation in many countries. The inclusion of students with barriers to learning in ordinary schools is a part of the global movement for human rights. All learners have a right to education, regardless of their individual characteristics or difficulties. In taking a human rights approach or human justice perspective, it is critical to foster evenhandedness for diverse learners. The United Nations created a universal framework to develop educational program for all learners, including all with special educational needs[1,2]. Inclusion in education is concerned with providing equal learning experiences and equal opportunities for all children, youth with a specific focus on groups susceptible to be left out from society life. This apply not only to children with special educational needs but even those considered to have emotional, behavioral, physical and mental disabilities but also to minority communities; gifted or talented students; children with social difficulties such as street children, children of prison inmates; people in disadvantaged and remote areas[3].

The RTE Act - 2009 provides a legal framework that supports free and compulsory elementary education for all the children of India, between the age group of 6-14 years. It also advocates for an education that is free from fear, stress and anxiety and of reasonable quality, based on principles of equity and non-discrimination. To implement the inclusion principles we need to look at arise of the barriers in education system and need to work on for their removal. Inclusion in the classroom requires an educator to consider all the students whether normal or with special educational needs simultaneously, to plan for their learning needs and to address the curriculum[4,5]. Research indicates that there are strategies that take into account school reform and diversity within the classroom. Differentiated instruction is an example of such a strategy.

The objectives of the present paper are: i. to provide the overview of differentiated instruction, ii. to discuss the rationale behind the differentiated instruction, iii. to discuss the elements by which teacher can differentiate instruction, iv. to manage differentiated instruction in the classroom

Differentiated instruction: Planning for all

Differentiated instruction is an organizing structure or framework in teaching and learning which calls for a major restructuring in the classroom and curriculum, if done well, its benefits far out way the costs. "Differentiated instruction can be defined as a philosophy of teaching that is based on the premise that students learn best when their teachers accommodate the difference in readiness levels, interests and learning profiles[6, 7]. "Differentiated instruction is a process to teaching and learning for students of differing abilities in the same class. The intent of differentiating instruction is to maximize each student's growth and individual success by meeting each student where he or she is and assisting in the learning process[8]". Differentiated instruction seeks to move away from teaching to the whole class in the same manner and addresses the needs of all learners,

including those who are at risk and the gifted, through various forms of well planned, well-organized, flexible curriculum and instructional strategies.

Differentiated instruction can enable students with a wide range of abilities—from gifted students to those with mild or even severe disabilities—to receive an appropriate education in inclusive classrooms[9,10]. In order to understand differentiated instruction, the principles for practicing must be articulated viz. i. Every child can learn. ii. All children have the right to high quality education. iii. Progress for all will be expected, recognized and rewarded. iv. Learners in a classroom have common needs, distinct needs, and individual needs[11"].

Theoretical Bases of Differentiated Instruction

The foundational belief for differentiation is that every student is different and he learns differently from others. The rationale behind ddifferentiated instruction is Piaget's constructivist theory, Vygotsky's zone of proximal development, and Gardner's theory of multiple intelligences[12]. According to Piaget's theory, the learner interacts with objects and events available in the physical and social environment and thereby comprehends the features held by such objects or events using the process of assimilation, accommodation and equilibration. The learners, therefore, construct their own conceptualizations and use those conceptualizations to generate solutions to problems. This theory suggests that humans create and construct knowledge as they try to bring meaning to their experiences. In the differentiated classroom, teachers should facilitate the learning process by organizing learning activities and using variety of aid material according to the level of functioning of student's cognitive structure to enable him to construct knowledge through his experiences.

The zone of proximal development is the distance between student's ability to perform a task with assistance i.e. under adult guidance or with peer collaboration and the student's ability to perform the task without any assistance[14]. According to Vygotsky learning occurs in this zone. In differentiated instruction, first the teacher need to identify what the students can achieve independently (level of actual development) and for further learning of the more challenging tasks, differentiate learning tasks accordingly and provide academic support from teacher as well as from more proficient peers so that students acquire necessary academic skills for independent learning (level of potential development).

Gardner stated that human beings possess a basic set of intelligences at varying levels, and that no intelligences should be viewed as bad or good [15]. Gardner identified the existence of eight distinct intelligences: visual-spatial, verbal-linguistic, musical, logical-mathematical, bodily kinaesthetic, interpersonal, intrapersonal, and naturalistic. Gardner suggested that one of the intelligence may be stronger than the other but they all are utilized by an ordinary person[16]. In the differentiated classroom, teachers should provide educational opportunities in such a way that nurture the strong area of intelligences but also allow students to use all their intelligences.

When teachers consider students' interest, they give students the opportunity to develop skills and concepts through the topics which students enjoy studying. When teachers consider learning styles they plan learning activities taking into account visual, auditory, and kinaesthetic preferences. When teachers consider students' readiness level, they take into account the academic needs of their students[17].

Critical areas/elements by which teacher can differentiate

For implementing differentiated instruction in their classrooms, teachers need to modify curriculum and instruction by selecting and organizing content on the basis of learning objectives, choosing instructional approaches for its effective transaction, designing learning activities and assessments according to students' interests, learning styles and readiness levels[17, 18].

Content: Content is what we teach (the curriculum). Content consists of facts, concepts, generalizations or principles, attitudes, and skills related to the subject, as well as materials that represent those elements. It can be differentiated in two ways. First in differentiating content, we can adapt what we teach i.e. by varying learning outcomes on the basis of what students already know.

The teacher may differentiate the content by selecting and organizing learning experiences at various levels of Bloom's Taxonomy. For example, students who are unfamiliar with the concepts may be required to complete tasks on the lower levels of Bloom's Taxonomy: knowledge, comprehension, and application. Students with partial mastery may be asked to complete tasks in the application, analysis and synthesis areas, and students who have high levels of mastery may be asked to complete tasks in synthesis and evaluation.

The second way to differentiate is to choose resources how we give students access to the learning material but keeping learning outcomes same for all students. For example the teacher may use varied resource material like concrete objects or print material, interactive software for teaching physical and chemical change or students may be assigned to groups to explore the internet resources related to the topic physical and chemical change. In this way the students could have a choice to work appropriately in groups, or individually, but all are working towards the same instructional objectives irrespective of their varying abilities.

Process: Process refers to how we engage students to learn the content so that all students are able to understand or make

sense of the content and skills, as well as to incorporate the content and make connections to what is already known, understood or able to do. Based on the pre-assessment results, the teacher should decide about the different ways to deliver the instruction. If using cooperative learning methods, then the process component includes using flexible grouping; this means that groups of students should be different for the different activities and if some students who are more comfortable in working individually then they should be allowed to do so[19].

Another part of the process piece is classroom management. To effectively operate a classroom using differentiated instruction, teachers must carefully select organization and instructional delivery strategies[8].

Product: The product is essentially what the student produces at the end of the lesson to demonstrate the mastery of the content. The product is an integral component of the differentiated instruction, as the preparation of the assessments will primarily determine both the 'what' and 'how' instruction will be delivered. Assessments, both formal and informal, determine what level of understanding the students have of the subject matter. This component allows students to display their knowledge in several ways for e.g in English a student may be asked to compose a poem or to create a different end of the story, or to prepare a 3-dimensional model or to prepare a sketch that explains mastery of concepts in the social studies lesson, to write a book report, to perform a play, debate or investigate an issue, to design a game, and compare or contrast[11].

Strategies of differentiation in inclusive classroom

It can be beneficial to know about certain types of disabilities before teaching students with labels, often teachers are effective when they are accepting, look for strengths in their students, provide personal attention when necessary, and allow for differences in the ways students approach tasks and complete classroom work[20]. Some of the easy strategies are as:

Big Question Teaching: The easiest way to differentiate for all learners is to frame lessons and units as questions, issues, or problems[21, 22] especially in humanities. Questions or problems based on critical issues stimulates the students to think innovatively and the best way of getting different responses from different students and also encouraging some of them for further learning and investigation. Some learners will provide answers that are more concrete while others will be able to answer in ways that are more complex and abstract. For example: What does it mean to be a good human being? Or "What will be your first decision as an environment minister?" Using problems, questions, or critical issues as the base of a lesson or unit helps the teacher to "narrow the topic, delimiting content coverage and reducing the likelihood of fragmented and superficial treatment of subject matter [22]".

Centers or stations: Centers or stations involve setting up different spots in the classroom where students work on various tasks simultaneously on their pace and abilities. Stations involve flexible grouping because not all students need to utilize all stations. Centers or station teaching is ideal for use in the inclusive classroom since it allows teachers to work with individual students or small groups of learners without needing to push them to achieve the desired objectives.

Stations or centers might be teacher-led if new knowledge is to be given or student-led if mastery is to be obtained on the information given by the teacher. For example in a high school mathematics classroom, learners might rotate through five stations according to their potentials: i. Working with the teacher to learn about surface areas and volumes, ii. Solving problems of surface areas and volumes from the textbook, iii. To generate a list of applications related to surface areas and volumes from the real world, iv. Working on problems related to surface area and volumes on computer (designed by teacher or downloaded from internet) with a small group; and v. Completing a review worksheet from the last unit if last unit not mastered.

Project-based instruction: Project-based instruction is one of the best ways to differentiate instruction as number of student needs and learning styles can be addressed. Projects independent or group based can be assigned by the teacher or can be chosen by the students. If it is a group project, there are increased opportunities for peer support and the development of relationships. Students can work at their own pace; and a number of skills and disciplines can be incorporated into any project. Projects are ideal for those who thrive when given opportunities to immerse themselves in one topic.

Curriculum overlapping: Students needing more enrichment or more support might work on objectives that are different from those being addressed by their peers. When teachers use curriculum overlapping, some students focus on objectives that are different from but clearly connected to those being addressed by the class. For example, a student who already knows a lot about various tribes of various states can opt out some lessons of geography class to design a classroom website that helps classmates study about those tribes and connect to various internet resources (student works on refining and learning technology skills while practicing geography skills). Or a student who has already read and studied a certain novel which is now being studied by other students in the class can take time to adapt that novel into a play.

Table-1
Some of the tips that can be followed by teachers in any classroom

Based on Content	Utilize pre-tests to assess where individual students need to begin study of a given topic or unit. Objectives should be framed at various levels of Bloom's taxonomy. Break learning tasks into smaller, more manageable parts that include structured directions for each part. To have students access to a variety of materials that target their learning preferences.
Based on Process	To develop variety of activities that targets various learning styles and multiple intelligences. To establish stations for inquiry-based, independent learning activities. To create activities that vary in level of complexity and that require some degree of abstract thinking. To make use of flexible grouping to group and regroup students based on factors including content, ability of students, and assessment results.
Based on Product	Variety of assessment strategies should be used viz. projects, assignments, performance based tests, open-ended Questions that reflect a variety of learning styles and interests. Balance teacher-assigned and student-selected projects. Make assessment an ongoing, interactive process.

Tiered assignments: Tiered assignments are basically the learning tasks designed at different levels of complexity according to students' readiness levels, or at times keeping the learning outcomes same the learning tasks can be designed according to students' learning preferences viz. Learning styles or Gardner's multiple intelligences.

For example tiered in Process in high school science class, based on the students' learning style, learning tasks can be differentiated to achieve the same objective viz. Tier 1: The students who have visual/spatial mode of learning style or artistic qualities can be asked to prepare the model or sketch of oxygen atom by clearly showing its subatomic particles. Tier 2: The students who have bodily/kinesthetic mode of learning style may be asked to demonstrate how the nitrogen atom will look like by considering themselves as sub atomic particles. Tier 3: The students who have verbal/linguistic learning style can be asked to describe the structure of potassium atom with its sub atomic particles.

The assignments also meet the needs of at-risk students. Since most teachers are under time constraints, teachers work together in teams to plan activities for a particular subject. Activities can be designed for small groups as well as individual students [23].

Conclusion

Differentiation is an organized, yet flexible way of adjusting teaching and learning methods to accommodate each child's learning needs and preferences in order to achieve his or her maximum growth as a learner. Differentiated instruction provides multiple approaches to content, process, and product, is student-centred, a blend of whole-class, group, and individual instruction.

Although educators are continually challenged by the ever-changing classroom profile of students, resources, and reforms, practices continue to evolve and the relevant research base should grow. Differentiation demands the commitment on the part of teachers, administrators, and students. For teachers and students, the challenge is to move comfortably into a new instructional paradigm. For administrators, the challenge is to support teachers' professional development, provide teachers access to a variety of instructional materials, and encourage them to use new methodologies and teacher support networks or peer coaching.

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