

PEDAGOGICAL PROCESS NEEDED FOR EFFECTIVE LEARNING OUTCOMES IN BIOLOGY OF SECONDARY SCHOOL STUDENTS WITH SPECIAL NEEDS

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Abstract

Outcome based education is an educational theory that bases each part of an educational system around goals. By the end of the educational experience, each student should have achieved the goal. Disability is not a fault of anyone and it is the inherent right of every child to get educated. The outcome of educating children with disability and learning difficulties with that of normal ones, represents the need for better development progress of children with special needs. Each student in the class being different, conventional teaching strategies cannot cater to the purpose and success of inclusive education. The teachers in inclusive schools have to consider a wide range of learning modalities while designing instruction. This article discusses the pedagogical processes considered for effective learning outcomes in biology of secondary school students with special needs. Teachers have to be trained properly in order to cater the individual differences in their classrooms. The teacher pupil ratio should be maintained according to the number of children with special needs in a classroom. Universities and department of education has to undertake more research activities to develop instructional materials for an inclusive classroom.

INTRODUCTION

Learning is a process that leads to change, which occurs as a result of experience and increases the potential for improved performance and future learning. The change in the learner may happen at the level of knowledge, attitude or behaviour. As a result of learning, learners come to see concepts, ideas, and the world differently. Genetics, socioeconomic and physical conditions, teaching styles, epigenetic factors and psychological factors were affecting the learning process. Science, as a growing field of knowledge, is influencing us at every step in our daily life. Knowledge of Biology ensures a higher standard of living. The science of Biology consists of continually growing body of knowledge about living things. “Knowing Biology” is a part of knowing oneself. Outcome based education is an educational theory that bases each part of an educational system around goals. By the end of the educational experience, each student should have achieved the goal. There is no single specified style of

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teaching or assessment in an outcome-based education; instead, classes, opportunities, and assessments should all help students achieve the specified outcomes. A learning outcome is what a student can do as a result of a learning experience.

Disability is not a fault of anyone and it is the inherent right of every child to get educated. The outcome of educating children with disability and learning difficulties with that of normal ones, represents the need for better development progress of children with special needs. Inclusive education is the practice of including every child in mainstream schools, irrespective of their intelligence, disability, socio-economic background, etc. Each student in the class being different, conventional teaching strategies cannot cater to the purpose and success of inclusive education. The teachers in inclusive schools have to consider a wide range of learning modalities while designing instruction. This article discusses the pedagogical processes considered for effective learning outcomes in biology of secondary school students with special needs.

OBJECTIVE OF THE STUDY

1. To discuss the pedagogical processes needed for effective learning outcomes in biology of secondary school students with special needs.

OUTCOME BASED EDUCATION

Outcome based education approaches the curriculum decision making based on the competence's students should demonstrate at the end of their educational program, thus the outcomes or competencies dictate the curriculum content and organization, teaching methods and strategies, the course offered, the educational best to facilitate the desired final outcome.

Steps for planning and implementing outcome-based curriculum

Choosing the outcomes: The educational outcomes are unmistakably and clearly described with reference to the competence, context, and substance.

Demonstrating results: By establishing "benchmarks" for each stage of the programme, the desired outcome should be identified. The objectives of the curriculum should be addressed and clearly defined in benchmarks, and methods for determining whether students have attained these objectives at that level of study should be confirmed.

Determining the subject matter and instructional methods: Outcome-based education can be implemented using "flexible" or "whole-class" models, which use flexible grouping,

continuous improvement, technological strategies, and classroom management. Whole-class models aim to bring all students in a classroom up to a high level of learning before moving on.

Assessment in the outcome-based education: Since outcome-based education calls for ongoing feedback between the student and the teacher, continuous assessment and student portfolios would be very helpful in assessing outcome-based education. Standard referenced assessment, which is similar to criterion-referenced assessment but with a clear description of expected performance, could be used in outcome-based education.

Educating every child is very essential, as they are the future citizens of a country. A child with the special need may have a special educational need due to difficulty in learning. Inclusion is a form of integration and main streaming of children with special needs in normal classroom settings. In the process of integration and main streaming, it is the child who adapts himself/herself according to the environment of the school whereas in the process of inclusion; it is the school which adapts its policies and facilities according to the needs and requirements of the child. The Ministry of Human Resource Development (India) in its draft document on Inclusive Education (2003) has defined inclusive education as a system which aims to provide a favourable setting for achieving equal opportunities and full participation for all children with disabilities within a general education system. When a child with special needs is brought to the main stream school and the school makes the necessary adaption according to the needs of a particular child, it is called inclusive education.

Student diversity is the major characteristic of an inclusive classroom. Unfortunately, our teachers are not trained to cater the needs of such a classroom. Here we discuss some strategies familiar to us; which are useful in an inclusive setup. Effective overall teaching and classroom management skills are necessary pre requisites for working with children with special needs who attend inclusive classrooms.

LEARNING OUTCOMES FOR CHILDREN WITH SPECIAL NEEDS

As long as they are balanced and in accord with each child's unique needs, the learning outcomes are the same for all children. There are several potential causes of special educational needs, and conditions related to disabilities may be one of them. As a result, they need to be supported with various aids, including mobility aids (wheelchair, crutches, white cane), hearing aids, optical or non-optical aids, educational aids like Taylor frames, the

abacus, etc., and modifying learning situations to suit their needs. They also need other kids to be aware of how to help them in need, to ensure their participation in the learning process, and to ensure that they advance like other kids.

Here are a few more ideas to help children with special needs achieve their learning objectives.

- Modification of the curriculum since it poses particular difficulties for them, including more time and a suitable manner for tests
- Providing modified, altered, or substitute activities in various content areas
- Respect for native languages and linking to their socio-cultural context
- Appropriate management of classrooms
- Provision of additional support by using Information and Communications Technology (ICT), video or digitized formats.

PEDAGOGICAL PROCESS NEEDED FOR CHILDREN WITH SPECIAL NEEDS IN A BIOLOGY CLASSROOM

The study of life and living things, including their structure, function, growth, and evolution, is the subject of biology, a natural science. Our lives have been greatly impacted by biological research, and they will continue to be so in the future. Everyone in a classroom follows the same curriculum. This implies that all pupils can take an active role in learning. Some kids may experience verbal, visual-spatial, or mixed processing issues as learning challenges. They might need more instructional support and certain curriculum modifications. A few pedagogical strategies for instructors are recommended by taking into account the unique demands of children with special needs.

- Apply a multimodal method to combine information from touch, olfactory, aural, and visual sources. Give students the chance to interact with objects, materials, living things, models, etc. to feel changes in size, shape, texture, and pattern.
- For describing words, images, graphs, flowcharts, etc., use embossed line diagrams.
- When teaching ideas like temperature, volume, etc., use direct sensory experiences.
- Provide possibilities for teamwork among participants in experiments. For the entire class, switching partners would be a wise move.
- Let students record lectures, presentations in class, or the audio version of the text.

- Connect the experiments and projects to actual experiences. Encourage group projects and peer help for experiment and project work.
- Give the project and experiment fewer steps, and use visual clues to order the tasks. For enhanced comprehension, display finished project and experiment examples in the lab or classroom.
- Take into account different or easier workouts and activities for the pupils that have the same or similar learning objectives. On the chalkboard, note any modifications to lab procedures as well as any homework or assignments.
- Allow the student enough time to complete a task in an experiment before moving on, if the student so indicates.
- Class projects, experiments, real-world examples, etc. can all be used to teach certain subjects. Before introducing any theory or concept, activities can be carried out in multiple-sensory ways.
- Wherever a figure or table must be drawn, peer support can be used. Using carbon paper, the peer partner can sketch (for copying).
- Underline and highlight the important ideas. Give people more time to do an experiment and comprehend an idea.
- Always give clear instructions so that the task may be organised. Use visual aids, graphic organisers, and again go through the stages of experiments and assignments with the youngster until they understand.
- Students can be given sequence maps with visual cues to help them comprehend the order of events.

CONCLUSION

Instead of focusing on an event occurring in the curriculum, outcome-based education is taken into account when developing, implementing, and evaluating curricula. It ensures active and experience-based learning and guarantees a high level of learning for all students based on the accomplishment of clearly defined, unambiguous outcomes while taking into account each learner's developmental stage. Before setting off on the voyage, it informs the student of the destination of the educational trip. Because every student in the class is unique, traditional teaching methods cannot support the goals and objectives of inclusive education. Additionally, in order to accommodate the individual variances in their classrooms, teachers must have sufficient training. The number of students with special needs in a classroom should be taken

into consideration when maintaining the teacher-to-student ratio. Universities and department of education has to undertake more research activities to develop instructional materials for an inclusive classroom.

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