

Using Multi-Sensory Instruction in Managing Classroom for Effective Teaching and Learning

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Abstract

The paper reviewed ways of using multi-sensory instruction in managing classroom for effective teaching and learning. The concept of classroom management, multi-sensory instruction, the goals of multi-sensory education, characteristics of multi-sensory, types of learners, benefits of multi-sensory instruction developing students-centred classroom through multi-sensory instruction and ways of boosting multi-sensory instruction were discussed. Challenges to the use of multi-sensory instruction were highlighted. The conclusion was drawn and recommendations on the way forward made.

Keywords: Classroom; management; multi-sensory instruction; instructional media/technologies; teaching and learning.

INTRODUCTION

The informal education system, most formal instructional exercises takes place in an organised area known as a classroom. The classroom is a room specially set aside in school or college where teaching and learning is carried out. Teachers and learners meet periodically in the school for academic interaction. Conventionally, the classroom supposed to be equipped with necessary materials which could enhance

teaching and learning. In other words, it is that classroom that houses this multimedia for teaching-learning process.

Classroom management generally, is concerned with teacher's behavioural activities which encompass the planning, organisation and control of learner's learning process and the classroom environment to create and maintain a practical learning experience. Oladipo in Ogonnaya (2013) averred that classroom management is the bringing together in a specific and careful manner those elements which support excellent teaching and learning condition in the school classroom. These features are the human, materials, time and technologies necessary for effective teaching and learning. In their view, Agabi, Onyeike & Wali (2013) maintained that classroom management involves the arrangement of learners according to their visual abilities, physical sizes, levels of education and nature of the classroom, gender tolerance as well as other conditions that could help to maintain classroom discipline. It also includes providing instructional materials like charts, graphs, map, pictures, arts, globe, specimen, computer and books necessary for effective teaching and learning in the classroom. (Attanda & Lameed, 2006).

In the modern day classroom teaching and learning, technology has become the order of the day. In the educational sector, educational technology is the efficient use of technological tools in instructional process with the aim of

improving teaching and learning. Tools in this context encompass media of various types including machines, and networking hardware is used to accomplish some educational goals and specific instructional objectives as specified in the curricular programme. They try to make the whole teaching and learning process more meaningful and easy for both the teacher and learner by modifying teacher's instructional approaches to learning objectives and learners' behavioural outcomes. They also shape the general school environment towards achieving effective teaching and learning. The functions as mentioned above of technological tools' contributions to education may not be possible when only one media (tool) is applied from the beginning to the end of the instructional presentation. Meaning that combination of different media and techniques in teaching and learning is more advantageous and useful to get the best possible outcome in a classroom situation. The application of a variety of teaching media, methods, and technique in instructional exercise is known as multi-sensory instruction.

Multi-sensory here referred to many senses. Multi-sensory could also be referred to as multi-media in classroom communication encounter. It is assumed that reasons are the gateway of knowledge which we are all endowed with to learn and assimilate new pieces of information in so many surprising ways through these thoughts. It is natural that individuals have five physical senses: sight, hearing, touch, smell and taste which are not functioning (working) at the same rate. Some people's minds are more active than others, and this affects the rate of understanding and perception. As a result, use of different types of media which takes care of students' unique way of understanding in teaching-learning process is preferable. Corroborating this assertion, the statement of Wittich and Schuller (1973) maintained that multi-media facilitate teaching and learning more than a single type of media or techniques. Put in another form, doors to learning of any information, knowledge or subject are always broad and accessible as long as one uses effective multi-sensory learning strategies. This is in line with the study conducted by Cohune (1968) cited in Aggarwal (2007) noted that:

1 percent of what is learned is from the sense of taste;
1.5 percent of what is learned is from the sense of touch;
3.5 percent of what is learned is from the sense of smell;
11 percent of what is learned is from the sense of hearing; and
83 percent of what is learned is from the sense of sight.

Retention of what is learned is likewise related to sensory experience.

These senses are critical when it comes to improving instructional outcomes in the classroom. Each sensory within itself can dramatically enhance students learning experiences and provide students with extra support that will develop their memory and recall of information. Consequently, the term

multi-sensory or multimedia approach to teaching and learning may be related to the use of appropriate and carefully selected categories of learning experiences. Which, when presented to the learner through selected teaching strategies, will reinforce and strengthen one another in such a way that the learner will achieve predetermined objectives in an efficient way (Packian, 1986). In other words in the multi-sensory or multimedia procedure, teaching-learning process is sent out through some media by using them in such a designed and organised combination concerning the available teaching-learning condition that leads to their maximum utilisation for achieving the desired ends in a quite efficient way (Mangal and Mangal, 2014). This is to prove the importance of all the sense organs (multi-senses) in the realization of the stated specific instructional objectives. Though this analysis might vary from person to person depending on their sensory learning preferences, but based on personal experiences with learning, it seems to be reliable. In a typical classroom situation, there are students of various background, socioeconomic status, gender, intellectual ability and education style but they are subjected to the only audio-visual dominant methods of teaching in the classroom. Some students may not fully benefit from this approach. Most teachers never realised this but struggle with only one or two media in their instructional presentation which do not sensitise most of the senses for active learning to take place. This stance necessitated this study.

Goals of Multi-sensory instruction

Multi-sensory instruction has the following goals to achieve:

The efficient realisation of teaching-learning objectives.

Helping teachers plan and organise their teaching activities as efficiently as possible.

Organizing learning activities in such a way that students learn mostly through self-effort and active participation and involvement in the learning activities.

Organizing teaching-learning activities in such a way that helps the teaching in making the total unit of learning quite clear to his students. It should also help students in acquiring all the learning experiences broadly through independent efforts and cooperative planning.

Selecting media for teaching activities about a particular teaching-learning situation resulting in the practical realisation of the set objectives. (Mangal and Mangal, 2014).

Characteristics of multi-sensory approach to teaching and learning

The multi-sensory method has the following components:

The multi-sensory process calls for the use of some media, devices and techniques for teaching and learning. Multi-

sensory approach is a contribution and net result of the researchers and experiments going on in the subject of educational technology for improving the process and products of the act of teaching-learning. Multisensory Approach in teaching is the simultaneous use of visual, auditory, and kinesthetic-tactile to enhance memory and learning. Links are consistently made between the visuals (what we see), auditory (what we hear), and kinesthetic-tactile (what we do or feel) which enable the learner to store the information directly to the brain in its real sense.

It is a coherent representation of objects combining different modalities to enable us to have meaningful perceptual experiences. Using a multisensory teaching technique means helping a child to learn through more than one sense.

Many forms of instruction use more than one mode. For example, watching a film involves both auditory and visual components. Writing is an example of an activity that involves fine motor and visual instruction. Speaking would be a fine motor and auditory experience. Acting out a scene from a play involves all three modes: visual, auditory, and sensory-motor activities.

Most teaching techniques are done using either sight or hearing (visual or auditory). The child's sight is used in reading information, looking at text, pictures or reading information based from the board. The hearing sense is used to listen to what the teacher says.

Multi-sensory approach involving multiple senses are carefully selected which are useful in providing desirable learning experiences to the learner for performing the predetermined teaching-learning objectives. Multi-sensory approach is not used anyhow just to increase the size and number of media. Instead, they are selected and planned to yield the best result.

Multi-sensory involving multimedia/devices and techniques take care that the present one must increase the effect the other in the realization of the set specific instructional objectives.

Multi-sensory asks for the judicious and planned use of the hardware and software available in the field of educational technology.

In the multi-sensory approach to teaching-learning, several media and techniques can be usefully used as an appropriate vehicle for needed communication of ideas in the process of teaching-learning (Mangal and Mangal, 2014).

Types of learners

Learners are the recipient of a given concept, skill, knowledge or information at a given period. It has been observed as a professional teacher that students vary in their academic strengths and weaknesses. They also differ in their learning styles which makes them unique. This might be attributed

mostly to their sense organs. One's senses contribute much to what he/she learns and retains. Some learn much through the ear, some through the eyes, while combined reasons have proved to be more efficient in teaching-learning situation. But naturally, one has a preference for one sensory learning method over the other. Adam (2003) identified three types of learners based on the senses. They are as follows: Visual learners, Auditory learners and Physical/kinesthetic learners.

Visual learners: Visual means sight. Every human being is unique in so many ways. In the teaching-learning situation, some learners are more active and enjoy using their eyes to learn and remember pieces of information. They always watch events as seeing sensitise, them most. They are very visually-oriented individuals. Visual learners make use of what they know more as in colours, shapes, pictures. As a result, they visualise and make use of imaginations (visual thinking) to think about and recall what they are learning. The auditory challenged learners prefer optical media as they cannot hear or hear well.

Auditory Learners: Auditory refers to sound. Learners under this category are those who use their ears more to learn and remember pieces of information presented to them. They are more sensitised through sound. Based on this, they are listening-oriented individuals who think it sounds music and tones. They enjoy listening to items with sounds (audio) and make use of their voice to recall the concept(s) they are learning. The visually challenged learners are under this group as they cannot see.

Physical/kinesthetic learners: In teaching-learners situation, some learners learn and recall what is presented to them more using their feelings and involving them. These types of learners are physically-oriented individuals. They link their thinking to shades of emotion, physical movement and involvement. They engage themselves in debating, discussion, role-playing, demonstration, and contemplating the concepts they are learning to understand and retain learned material. These activities also will help the learner to zoom of all outside distraction and focus on the stuff under study. Therefore, teachers should then endeavour to plan their lesson content to incorporate discussion, role-playing, demonstration etc. to carry physical/kinetic learners along.



Source: edufocus.blogspot.com.ng

Benefits of multi-sensory instruction

We are living in a multi-sensory environment. As a result, our experiences in life involves constant multi-sensory stimulation as audio-visual information in one way or the other are most of the time integrated into carrying out many tasks in our local environment. While for some people who are not audio-visual learners benefits from an instructional approach that appropriately incorporated multi-sensory. The human brain also involved to learn and operate in natural environments in which behaviour is often guided by information integral across multiple sensory modalities.

The benefits of multi-sensory approach to enhance and improve teaching and learning can be seen in countless areas such as:

Multi-sensory instruction increases students' active participation as the lesson is going on.

It increases students' understanding of necessary skills, a variety of media and methods are incorporated while presenting the lesson.

Multi-sensory instruction promotes both group and individualised learning: multi-sensory instructional approach involve the use of different instructional content. To this effect, students learn from any of the media or methods that suit them most such as demonstration, storytelling, discussion, television, pictures, and texts, computer-assisted. Instruction, programmed packages, taped instruction, educational films as a group or individual.etc.

It appeals to most senses: Application of multi-sensory to instructional activities creates room for the students to learn through some senses such as hearing, sight, taste, touch, smell as most media incorporated in presenting the question appeal to most of the senses fact that variety of media and methods are involved. As a result each student must have

It makes the process of learning lively and exciting: a Multi-sensory approach to teaching-learning makes the instructional exercise energetic and exciting based on what will arouse his/her interest and makes learning following lively principles of learning.

Multi-sensory instruction meets learning ability of the learners: Multi-sensory instructional approach is a solution to individual learner's need intellectually, emotionally and psychologically, as diversified media and methods in use in delivering the lesson to take care of their needs in one way or the other.

Above all, cognitive, affective and psychomotor domains of educational goals are best realised by the use of the multi-sensory approach. Taking into consideration the facts of individual differences, learning difficulties, etc. multi sensory approach is the only way to satisfy the different needs of a child. For instance, students with learning difficulties typically have difficulties in one or more areas of reading, spelling,

writing, math, listening comprehension and expressive language. Multisensory techniques enable students to use their personal areas of strength to help them learn. They can range from simple to complex, depending on the needs of the student and the task at hand. Many studies have shown that:

We remember: 20% of what we read, 30% of what we hear, 40% of what we see, 50% of what we say, 60% of what we do and 90% of what we see, hear, say and do.

When information is presented, it goes into our short term, working memory. Like a computer, unless we deliberately save the data into long-term storage, it is lost very quickly. The method we use to save new information that is presented to us determines the likelihood we will be able retrieve it in the future.

Developing a Student-Centered Classroom through Multi-Sensory instruction

Student-centered classrooms thrive on several key beliefs. First, the teacher does not hold all of the power. Instead, students share power and discover their capabilities as learners. Second, students are encouraged to think critically and question presented material. Third, teachers are also learners within the classroom – and seek to be taught as much as they, themselves, may teach. Fourth, students have control of their learning. This means that students are able to focus on their learning style and receive that helps to target that style. Finally, assessment is not just a grade, but a way to aid student learning. For instance, when a student does poorly on an assessment, the student and teacher may work to help the student understand the material better (Stoffers, 2011). Thus, teachers must possess a strong understanding of students' needs to help direct students to reach learning in a way that suits the individual.

Many researchers believe that learner-centered classrooms are more effective than traditional classrooms – both in helping students achieve higher test scores as well as helping students emotionally and socially. Student-centered classrooms offer students the opportunity of choice. Students are able to follow their interests and highlight their personal skills in assignments that encourage demonstration of learning to be presented in unique ways characteristic of multi-sensory instructional approach. Additionally, students are encouraged to be active participants in the classroom through multi-sensory instruction (Salinas, Kane-Johnson & Vasil-Miller, 2008).

The benefits of learner-centered classrooms do not end with academics. As a study conducted by Wohlfarth et al. (2008) found, students tend to view student-centered classrooms positively. In this study, graduate students were asked to evaluate their college classroom experiences for one course. Students agreed that the class was very learner-centered and

noted that the classroom opportunities were extremely important in helping students to learn.

The core belief behind student-centered classrooms is that students participate in their learning, rather than sit back as passive recipients of knowledge (Wohlfarth et al., 2008). To achieve this goal, teachers must understand students' needs and learning styles to provide appropriate direction.

To reach all their learners, teachers may use multi-sensory methods to encourage students' interactivity with the material to the teaching-learning process. The diversified media and activities applied in presenting the instructional content have tremendous power and capacity to establish a change in the behaviour of the learners intellectually, emotionally and manipulatively.

More importantly, multi-sensory instruction makes education available to the masses through correspondences such as television, video, internet, and computers.

Use of Multi-Sensory instruction for effective classroom management

While there is certainly a multitude of materials available on building a successful classroom community, there appears to be little research specifically focused around the impact of multi-sensory instruction on classroom management. However, one study did find a way to link multi-sensory instruction to learning through classroom cooperation. This particular study focused on literature lessons conducted in a kindergarten classroom (Molenda & Bhavangri, 2009).

Using eight cooperative sub-skills discussed by cooperative learning gurus Johnson and Johnson, the teachers selected four children's books (*Swimmy*, *Finders Keepers*, *Angelina and Alice*, and *The Little Red Hen*) that appealed to the various elements of cooperation. The teachers would read a book; then the students would have to complete some kind of team building activity targeting cooperation and movement. For instance, in *Swimmy*, the students sat on scooters and pretended to swim. They had to pick up puzzle pieces from around the room and put them together to create a picture of a group of fish. The class had to work together as a unit to get the puzzle pieces and decide where each piece belonged (Molenda & Bhavangri, 2009).

At the end of the study, researchers concluded that all of the social activities from all four books had promoted social skills, had encouraged social conversations amongst the students, and had excited the students enough to become emotionally involved in the activities. This study also seemed to correlate with Piaget's theory which states that young children learn abstract concepts introduced in books, such as cooperation, by applying it with kinesthetic movement (Molenda & Bhavangri, 2009). By targeting both academic and social goals, the teachers in this study were able to establish both academic learning and mutual co-operation

among students within the classroom to enhance effective teaching and learning.

Some educational programs have effectively adopted learning styles theory and multisensory approaches. Wilson Elementary School is one example (Stone, 1992).

Wilson Elementary, under the direction of Pete Stone, adopted a school wide program that is learning styles driven. After working to meet the students' individual learning style, the school saw "dramatic increases in standardized test scores (from the 20th and 30th percentiles to the 50th, 60th, and even the 70th percentiles in math and science)" (Stone, p.35). In addition there were fewer discipline problems because students were motivated and felt their needs were being met. Stone reflects, "Discipline was unbelievably good, and we could see significant improvements not only in students' achievement, but in their attitudes toward learning" (p. 36).

From the foregoing, it is obvious that multi-sensory instruction is a veritable tool in managing classroom for effective teaching and learning.

Ways of boosting multi-sensory instruction

Most teachers and students at all levels of education have gone through one or more levels of education without fully understanding and using their potentials as intelligent and creative human beings. Nature endowed man with the ability to learn, understand and recall information in different ways. But we most people have not realised this much which made one teach and learn as if human beings are the same, ignoring the unique nature of man. This might be one of the reasons why most of our academic activities are ineffective which fails. There are various ways to teach and learn a different type of subject/topic. This is because one way as cannot take care of the uniqueness of all the learners in the classroom. To this effect, combined means that will sensitise most of the sense organs become an ideal strategy to achieve effective teaching and learning in the school.

Teachers to achieve success in teaching and learning situation should try as much as possible to know the unique strengths and weaknesses, levels, abilities and disabilities of the learners. This knowledge will throw light on what should be taught, how it should be shown, who should be taught, when it is should be taught and where it should be taught to suit the personality and learning style of the learners. While learners should take time to find out their abilities, weaknesses, strengths and learning style to follow their unique nature to succeed in instructional activities.

The multi-sensory approach involves use of different media, methods and strategies in instructional exercise. To enhance effective teaching and learning in the classroom situation, the three primary sensory organs: visual, auditory and physical should be sensitised. As a result, instructional media to be incorporated in teaching and learning should be bright, funny,

colourful and close in addition to pictures (images). While some should have volume and uniqueness of sound. Drama, role play, discussion, debate, body movement, high emotional intensity and unique feeling should also be incorporated into instructional strategies. The diversity of media and approach (multi-sensory) will enhance students' active participation, understanding and recall.

Teaching and learning are processes of activities. As such, teachers and learners should consider summary as part of an instructional strategy to be incorporated in teaching and learning process. The teacher after presenting the topic under study should endeavour to tell the students to summarise what has been taught identifying what they know about the issue. This act will eventually enhance students long-term memory, recall of the information under study and give the students the opportunity to be in full control of what was taught.

Questioning techniques is a means to identify students' knowledge and understanding of the topic/concept in question. It can be practised by both teachers and students to find out how far each must have achieved and probably the next line of action. Based on this, questioning should be part and parcel of the instructional strategies while presenting the lesson content as they are a natural complement to multi-sensory strategy with solution-focused methods that will open the minds to possibilities. Teaching and learning are brain work. Effective questioning stimulates the brain to think uniquely and creatively, encourages curiosity, builds confidence and enhances teaching and learning. Examination exposes unknown facts and should be utilised starting from the beginning of the lesson till the end and even after the experience. Questioning is essential for instructional exercise as the answers obtained from these questions help in improving teaching and learning in future.

Challenges to the use of multi-sensory instructional approach in teaching and learning in Nigeria

The purpose of multi-sensory instruction is significantly constrained by the following:

1. Inadequate electricity supply: Most technological driven instructional programmes require a steady power supply which is difficult to come by in Nigeria.
2. Insufficient funds for education in Nigeria: The budgetary provision to school in Nigeria for the past ten years was at the average of less than 10% as against the 26% recommended by UNICEF. This is grossly inadequate to provide the needed technologies for education.
3. Lack of technical know-how: Many teachers are still not computer compliant to use the multi-sensory approach in teaching.
4. Inadequate monitoring and supervision of instruction.
5. Low incentives for teachers.

CONCLUSION

Our senses sensory (organs) are natural gifts which transfer information to the thinking brain to understand what is being presented to us. The feeling here refers to the senses of sight, hearing, touch, smell, taste. These senses determine to some extent how we understand and recall instructional contents or information that are presented to us. To this effect, teachers at all levels of education no matter the subject should always keep these in mind and endeavour to apply the multi-sensory instructional approach in presenting their instructional contents in a classroom situation to take care of the uniqueness of the individual learners. In this case, a teacher should make use of various teaching approaches such as audio-visual media (television), dramatisation, maps, charts, demonstrations, writing on chalkboard discussion, repetition and PowerPoint presentation in presenting their lessons so that learners of different learning abilities/styles should be carried along. The use of these techniques and media concomitant with multi-sensory instruction go a long way in ensuring adequate participation orderliness and discipline among students which are the hallmarks for effective classroom management.

RECOMMENDATIONS

The following recommendations were suggested:

In other to overcome many challenges arising in the teaching-learning situation teachers should be supported to use different types of instructional resources, methods, and techniques which often feature multi-sensory approach to address the individual learning styles of students.

Teachers at all levels of education should be trained to use multi-sensory approach in teaching-learning process to sensitize most of the senses to achieve effective teaching and learning in the classroom.

Scientists have shown that human brain is designed to develop, learn and operate optimally in the multi-sensory environment. As a result, students should be exposed to multi-sensory learning mechanisms for active learning to take place.

There are a unique means and ways to teach and learn any information, subject, or topic, therefore, teachers and students should apply a multi-sensory instructional approach that will help them achieve the set specific instructional objectives, of the matter in question.

More funds should be appropriated to education for the procurement of necessary classroom resources to enhance multi-sensory instruction.

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