
Use of Multiple Intelligence-Based Instructional Approaches in Teaching and Learning Skills
in Vocational and Technical Education

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ABSTRACT

Teachers in Vocational and Technical education should introduce effective and efficient use of Multiple Intelligence-Based Instructional Approaches in teaching and learning skills, which is a method of instruction that involves the use of nine intelligences which are enumerated clearly for sustainable and meaningful development. Such method could be employed by teachers as mines to the conventional methods of effective teaching and learning. To this regard education is considered to be the key of the global economy in the world community. Therefore, this paper examined the characteristics of each of the intelligences and the corresponding activity to be used by the teachers. However, the researchers also discussed the significance of the Multiple Intelligence Inventories to both teachers and students, its application to classroom situation and made recommendations.

Keywords: Multiple intelligence, instructional approach and teaching skills.

INTRODUCTION

The current state of recession of Nigerian economy is an indication for national adjustment, yet the economics of most Sub-Saharan African countries in which Nigeria belongs are characterized with features of low level development such as poverty, illiteracy, unemployment and inequalities in income distribution. This adjustment can be achieved if Nigerian citizens are equipped with relevant knowledge and practical skills in vocational and technical education. Education holds one of the main places in development of the society in our modern world. According to world economic forum (2015), Education must not stop with primary education. In today's knowledge-driven economies, access to quality education and the chances for development are two sides of the same coin. That is why we must also set targets for secondary education, while improving

quality and learning outcomes at all levels. That is the target of the sustainable development goals.

Vocational education is education that prepares people to work in various jobs, such as a trade, a craft, or as a technician. as Vocational education is sometimes referred to career education or technical education which is a training intended to prepare information and on understanding of the law of science and technology as applied to explained in terms of range of occupations with which it is concerned with vocational and technical training or retraining which is given in schools or classes under public supervision, control and conducted as part of a programme, designed to prepare individual students in recognized professions such as modern design, production, distribution, agriculture, home economics and industrial occupation.(ASTE, 2016)

Different conventional methods of teaching are employed in teaching vocational and technical education in Nigeria. The conventional method mostly used by teachers in technical institutions includes lecture, discussion, assignment and field trip methods. Hence the most appropriate method for the topic or skill to be taught for today's rapidly changing society, such as communication, problem solving, collaboration, and critical thinking, are being acknowledged increasingly all over the world. The big challenge, however, is knowing how to support and teach these skills in schools and classrooms which teachers are expected to integrate throughout their teaching (Care, kim and Vista, 2017).

Vocational Education

Vocational and training plays a major role at promoting community and national development (Oguntuyi, 2013). It is an important tool for a country's social and economic advancement. It offers an alternative educational path for youths and adults who wish to grow professionally and at the same time provides qualified manpower needed across all sectors of the economy. Vocational Education Training (VET) comprises formal, non-formal and informal learning for the world of work. Young people, women and men learn knowledge and skills from basic to advanced levels across a wide range of institutional and work settings and in diverse socio-economic contexts. VET has a prominent place in the 2030 Agenda for Sustainable Development. Equal access to affordable, high quality VET is a target of the Sustainable Development Goals (SDGs), together with a commitment to substantially increase the number of youths and adults with the relevant skills for employment, decent jobs and entrepreneurship by 2030 and

subsequently improve national unity (VET-TSD, 2018).

Chinwe and Ezeabasili (2014) Noted that, vocational education can be a means to an end. It can be a tool for securing employment and sustainable development in Nigeria. Vocational education is designed to offer training to improve individual's general proficiency especially in relation to their present or future occupation. This training will lead to self-reliance and sustainable development. The present preoccupation with university education in Nigeria reduces socio-economic opportunities of those who are more oriented towards work than academics. Not everyone needs a university education; if everyone becomes a university graduate, who will employ them? One of the goals of vocational education is to give training and impart the necessary skills to individuals who shall be self-reliant. If this goal is adequately achieved, it would lead to national unity and sustainable development.

The concepts are formulated from Gardener's theory of multiple intelligences. Gardener (2007) officially recognized eight intelligences. Which includes verbal, linguistic intelligence, logical-mathematical intelligence, visual-spatial intelligence and musical intelligence; others are bodily-Kinaesthetic intelligence, interpersonal intelligence, and intrapersonal intelligence. According to Gardener's theory, each person is born with a full range of capacities and aptitudes. The researchers maintained that though some are naturally stronger and some intelligence are naturally weaker in each individual, the differences do not indicate that one person is more or less intelligent than the next, but simply that each are learners, think, process and produce differently. Lorenzo and Lorenzo (2013)

reported that learning strategy is the way in which each individual learner begins to concentrate on, process, absorb and retain new and difficult information. A personal style is the biological and developmental set of characteristics that makes identical instructional environments, methods and resources effective for some learners and ineffective for others. Recent studies revealed that when teachers develop and expand their instructional methods and techniques according to the individual learning styles of their students, there is marked improvement in their performance and achievement and a drop in the number of disciplinary problems. Hence, this study was conducted to determine the learning styles of teacher education students which serves as basis in improving the teaching learning process. This opinion is in line with Kaminski (2007) who opined that, conventional teaching methods do not adequately equip teachers with contemporary view of Students intelligences and their vast learning capabilities.

Objectives of multiple intelligence-based instructional approaches in teaching skills.

- i. Enabling students acquire the knowledge of multiple intelligence-based instructional approaches in effective teaching and learning skills in vocational and technical education.
- ii. The use of multiple intelligence inventories is used by teachers themselves to identify the dominant intelligence among students and guide them accordingly.
- iii. Increases students understanding of what they like most of the time.
- iv. Enables vocational and technical teachers update their knowledge through organized workshops, seminars and conferences.
- v. Makes students to be well informed about the significant of multiple intelligence instructional approaches. (Gardener, 2007)

Therefore, this research addresses the multiple intelligence-based approach of learning to improve vocational and technical educational in Nigeria.

Significance of Different Intelligences and their Matching Classroom Activities

Teachers who subscribe to the theory that all students can learn and develop skills may find it necessary to equip themselves with many strategies as possible to reach students who do not seem to learn more from the traditional or conventional teaching methods. The following description of various intelligences and their matching classroom activities will help to promote learning process, if employ by teachers and used effectively.

Verbal/ Linguistic Intelligence

Verbal/linguistic intelligence learns best by repeating, seeing words and relying on different learning techniques. They stated that classroom activities that tap into the Gardener (2002) reported that students who are strong in, is intelligence which includes:

- i. Writing a journal.
- ii. Composing script and depict historical events.
- iii. Creating a real or imagined correspondence between historical and contemporary characters.
- iv. Writing newspapers of a different time period, fashion,

- entertainment and feature items.
- v. Interviewing a famous person with knowledge of a topic
 - vi. Inviting a guest speaker and planting appropriate questions.
 - vii. Reading or writing poetry, stories, ideas or taught.

If the above-named activities are adopted and used judiciously in classrooms, students will develop better understanding of various concepts being taught in the class. At the same time, they will also be able to develop better communication skills. Students' believe their academic ability influence their academic tenacity. If students are going to invest their effort and energy in school and their ability to learn and perform well, their self-efficacy can predict their level of academic performance above and beyond their measured level of ability. That shows that a central factor in this resilience is a student's mind-set about intelligence. Students may view intelligence as a fixed quantity that can be increased with activities, effort and learning (Dweck, Walton and Cohen, 2014).

Musical/ Rhythmic Intelligence

Students who are strong in this type of intelligence learn most readily through rhythm, melody and music (Kauffman, 2006), stated that meanwhile, activities that bring muscular/ rhythmic intelligence out in students which can also help them prove mastery of content according to multiple intelligence theory includes:

- i. Writing an original song, rap, jingle or cheer.
- ii. Playing instruments.
- iii. Composing music that conveys or theme or mood of the lesson.
- iv. Identifying rhythmic patterns in music or poetry.
- v. Researching, comparing and contrasting music of different cultures or time periods.
- vi. Creating a rhythmic pattern in music or poetry.
- vii. Preferring a song that summarizes formation.

Vocational and technical educators should therefore bear in mind, the above-mentioned characteristics of individual intelligences as they teach their students.

Logical/Mathematical Intelligence

The theory of multiple intelligence, as reported by Gardener, students who have a high level of logical/ mathematical intelligence like to develop strategies, perform experiments, reason things out, work with numbers and ask questions. They also learn best by classifying new information. According to the theory, they work well with symbols and formulas; they solve complex problems, logic games and so on. Therefore, Gardener theory maintained that activities and take advantage of logical/ mathematical intelligence include:

- i. Creating trivia games that others can play.
- ii. Developing crossword and other puzzles for classmates to solve.
- iii. Constructing a time line and filling in details.
- iv. Mapping a location.
- v. Diagramming procedures.
- vi. Playing calculator games.

- vii. Categorizing facts of information.

If vocational and technical teachers should consider the above name activities in relation to the various intellectual capabilities, vocational and technical education will have a firm footing towards national development

Visual/Spatial Intelligence

The multiple intelligence theory (Gardener, 2002) observed that people who demonstrate visual/spatial intelligence tend to focus on the visual arts or the use of objects in learning process simply because they have acute perception of form, shape, colour, texture and so on can be able to form clear images in their minds. Looking at the above theory (Kauffman, 1999), indicated that activities which give students a change to display their knowledge through visual/spatial intelligence includes:

- i. Drawing a picture, chart, poster and so on representing what they have learned.
- ii. Taking photographs or using video camera to create pictorial report.
- iii. Creating Venn diagrams or maps to explain information to others.

Therefore, considering the characteristics of the above intelligence, this will enable vocational and technical teachers to promote effective learning atmosphere in classroom situations.

Body/Kinaesthetic Intelligence

People whose strength lies in body/kinaesthetic intelligence theory, according to multiple intelligence theory, feel a compulsion to bridge the gap between mind and the body. A student with this type of intelligence learns

through touching, physical movement, manipulating concrete objects and interacting with his/her movement. This theory also observed that these students feel most comfortable in a classroom environment where they have the freedom to stand and move at regular intervals.

Students who are strong in this type of intelligence can demonstrate their talent through:

- i. Creating a dance or movement that tells a story.
- ii. Dramatizing a literary historical event.
- iii. Going to field trips to appropriate sites.
- iv. Building puppets and putting on a show related to content.

Considering the above characteristics, it is important for teachers to adopt and use various strategies that will involve the above-mentioned activities in order to develop body/ kinaesthetic intelligence within students (Gardener,2007).

Interpersonal Intelligence

Interpersonal Intelligence which is displayed primarily through communication, positive interaction and personal relationship in response to multiple intelligence theory agreed that, learners who have strong interpersonal intelligence have preference for solving problems by verbal discussing them first in a group. It was observed that most students are skilled at their understanding people, organizing, collaborating and mediating conflicts.

Therefore, students that exhibit high level of interpersonal intelligence can demonstrate their knowledge through:

- i. Participating in jigsaw activities, where each person in a group is responsible for specific task.

- ii. Sharing cooperative learning strategies.
- iii. Working on computer software, e-mail and internet.
- iv. Studying oral histories.
- v. Joining any group project.

Vocational and technical educators should marry these activities while teaching students with the aim of promoting a good interpersonal relationship among students.

Intrapersonal Intelligence

The essential component of this intelligence as observed by Gardener's theory of multiple intelligence is knowledge of the self (within oneself) with little or no interaction with other students. Gardener maintained that students who exhibit such characteristics, sometimes appear excessively quiet and withdrawn which may exhibit antisocial behaviour as a result of failing to recognize the need for others.

The theory clearly indicated the activities that engage and assist an intrapersonal learner which includes:

- i. Meeting with teachers outside the classroom.
- ii. Completing individual assignment.
- iii. Researching topics of interest.
- iv. Investigating complex problems.

Therefore, such activities if employed and used judiciously will no doubt promote meaningful development of knowledge and skills of individual students.

Naturalist Intelligence

Naturalist as the name implies, watch and observe environment. (Kelly 2017), Stated that multiple intelligence theory maintained that the naturalists enjoys activities. Some of the

characteristics of those students with naturalist intelligence include: -

- i. intense interest in learning about nature
- ii. physically/emotionally adverse to pollution
- iii. dramatic enthusiasm when in contact with nature
- iv. powers of observation in nature
- v. awareness of changes in weather

Linguistic intelligence

Here is an example of multiple intelligence inventories which can be used by teachers to identify the level of different intelligence in their students. The inventory will ask students to compare themselves to ideas and descriptions. If the statement describes the student most of the time then, he checks it. Below is an example of linguistic intelligence inventory

Below are phrases that describe common characteristics of the linguistic intelligence. mark those that describe you and what you like most of the time. the total number you check will be your score

- i. like to read for pleasure
- ii. I enjoy writing letters, etc.
- iii. I enjoy History and/or literature.
- iv. I like books.
- v. I am an accurate speller.
- vi. My imagination comes out when I write or talk
- vii. I have a well-developed vocabulary
- viii. I hear words when I am thinking.
- ix. I like puns and other wordplay.
- x. I remember names, dates and trivia.
- xi. I learn best by reading or listening.
- xii. I often talk to myself.
- xiii. I like to play word games.

- xiv. I often remember things said to me verbatim.
- xv. I tell jokes and/or stories.
- xvi. In real life situations teachers of LINGUSTIC people have highly developed auditory skills, enjoy reading and writing like to play word games, and have a good memory for names, dates, places, etc.

If these activities stated above are incorporated in teaching and learning situation students in vocational and technical education will be more appreciated and develop more interest in the natural environment. Such will definitely promote understanding of the world as a global village among the students.

Vocational and technical education should not individualize instruction for each of the students. What is expected of them is to teach in a variety of ways and regularly offer exciting range of activities to student's when planning a lesson; teachers should incorporate various types of intelligence in to the activities. To accomplish this therefore, they should use an inter-disciplinary format in teaching which is in consonance with findings of (Namourah ,2017) which revealed that Palestinian students had a moderate level of multiple intelligences and vocational interests. The findings revealed a positive correlation between multiple intelligences and vocational interests among Palestinian students. It was found that when multiple intelligences increase, vocational interests increases and vice versa. Students are usually involved in gathering of data, hypothesizing, and synthesizing, reading writing and reporting, interpreting information, making references and collaborate. This also means that the teacher has incorporated many disciplines

into a single project. Academic achievement emerged as a significant predictor of multiple intelligences and vocational interests. The principles of multiple intelligences among teachers can be improved through training courses, and update their knowledge in such important topic, which affects positively student academic performance.

CONCLUSION

Society is nothing without education because it is through the socialization provided by education that society acquires the best of its giants and professionals in all area of life. But we realized that education itself is also nothing without quality teachers who are embodiments of the qualities and capabilities that the society desire. Therefore, improving student's performances in vocational and technical courses is the problem. Conventional method of instruction and other factors have attributed to poor performance of students in vocational and technical courses. Multiple- Intelligence based an alternative to conventional methods of effective and efficient teaching and learning can improve vocational and technical education. Each has a unique profile of varying strengths and so no intelligence was considered to be superior to other types. All intelligences are required for an individual, in other to Participate; act purposefully and creatively in the society.

RECOMMENDATIONS

The use of multiple intelligence inventories should be used by teachers to identify the dominant intelligence of students and guide them accordingly. The paper recommends that multiple intelligence-based approaches to instruction should be introduced in the curriculum in addition to the conventional

methods. Vocation and technical teachers should update their knowledge through organized workshops, seminars, and conferences where issues and trends in teaching styles are strongly deliberated upon. Teachers should also identify their weaknesses in administering their instructions so as to find means of improving standards of teaching and learning in vocational and technical courses. This and other factors if employed by teachers will help in educational and human development and sustainability of the nation (Nigeria). This and other factors if employed by teachers will help in developing the nation (Nigeria)

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