SURVEY FOR DETECTING THE LEARNING STYLE OF STUDENTS USING FELDER SILVERMAN

LEARNING STYLE MODEL (FSLSM)

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ABSTRACT

It is very important that individuals actively participate in the learning process, starting from the early ages, their awareness be raised about the efficiency of the learning styles in developing their academic success and self-confidence. For this reason, this study aimed to reveal the learning styles having great importance for succeeding in the learning process and to determine the efficiency of these styles in learning process. The study determines the effect of learning styles on education and the teaching processes. The research identifies the different learning styles or preferred learning styles of learners and determines the most popular style of learning at The Federal Polytechnic Ile Oluji.

Keywords: Active learners, Reflective Learners, Learning Styles, Sensing, Intuitive, Visual, Verbal, Sequential, Global Learner.

1.0 INTRODUCTION

The ultimate aim of education is to produce professionals in various fields that will have better skills than previous skills. It has been observed that developed countries/communities have highly supported information and communication technology that enhances learning, various academic communities have introduce e-learning platform, online learning packages which makes it easy for learners to be skilled and hence very popular in worldwide. Although pedagogy has changed but its impact on learner is impregnable, and in order to improve learning. It is important to spoof the literatures, pedagogy versions, global objective change and more cohorting learning domain [4].

Learning can be said to be a means of gaining knowledge or experience of something. It is also the acquisition of knowledge or skills through study, experience, or being taught. Learning can also be defined as the relatively

permanent change in a person due to experience [8]. Devi (2018) defined learning as the transformative process of taking in information that when internalized and mixed with what we have experienced changes what we know and build on what we do. Over the years, knowledge has been acquired through different styles used by the instructor to deliver lecture. It is being discovered that learning takes place only when what is being taught is being understood by the learners. In order to have effective learning, there is need to introduce different learning methods into the education process. A teacher should understand learner's most preferred learning style in order to manage teaching technique and to also increase the potentials of learners.

There are several different learning style models including [13], [14], [16]. Each proposes different descriptions and classifications of learning styles. This research work is focusing on the Felder-Silverman Learning Style Model (FSLSM), most other learning style models classify learners into a few groups, whereas Felder and Silverman describe the learning style of a learner in more detail, distinguishing between preferences on four dimensions

The Felder Silverman Learning Style Model (FSLSM) are:

1. Active/Reflective Learning Styles
2. Sensing/Intuitive Learning Style
3. Visual/Verbal Learning Style and
4. Sequential/Global Learning Style

This is an online survey instrument used to assess preferences on the dimensions of learning style model formulated by Richard M. Felder and Linda K. Silverman. The instrument was developed and validated by Richard M. Felder and Barbara A. Solomon.

The four dimension of FSLSM as explained below by [6] are:

Active/Reflective:

Active learners learn by doing something with information. They prefer to process information by talking about it and trying it out. They like discussing, applying, or explaining it to others

Reflective learners learn by thinking about information. They prefer to think things through and understand things before acting.

Sensing/Intuitive:

Sensing learners prefer to take in information that is concrete and factual. They are oriented towards details, facts and figures and prefer to use proven procedures. Sensors like solving problems by established methods and dislike complications and surprises.

Intuitive learners prefer to take in information that is abstract, original, and oriented towards theory. They prefer discovery possibilities and relationships. They look at the big picture and try to grasp overall patterns. They

like innovation and dislike repetition.

Verbal/Visual:

Verbal learners prefer explanation with words written and spoken explanation.

Visual learners prefer visual presentation of material. They like pictures, diagrams, graph, charts, time lines, films and demonstration for easy learning.

Sequential/Global:

Sequential learners prefer to organize information in a linear and ordered way. They tend to gain understanding in linear steps, with each steps following logically from the previous one. They prefer to work with information in an organized and systematic way.

Global learners prefer to organize information in a random way without seeing connections. They are able to solve complex problems quickly but have difficulty in explaining it.

2.0 CLASSIFICATION OF LEARNING STYLES

Broadly speaking, learning styles can be categorized into three main types, which are;

1. Cognitive,
2. Personality (Psychology), and
3. Sensory.

Cognitive comprises Analytical/ Global, Field dependent/Field independent, Impulsive/ Reflective learning styles, Kolb's model of learning styles and Ehrman and Leavers' construct.

Personality learning styles include: Extroverted/Introverted, Random-intuitive/Concrete Sequential and Closure-oriented/Open oriented.

Sensory learning styles are divided into three sub-types: Visual, Tactile/Kinesthetic and Auditory [10].

Visual versus Verbal: Visual learners prefer to think in pictures and obtain information through visual means such as diagrams and videos. In contrast verbal learners gain more information through verbal explanations (either spoken or written). Auditory learners gain information through aural channels such as verbal discussions and listening to others speech. These learners understand meaning by concentrating on the pitch, tone and speed of voice. They benefit from reading text out loud and they may not make use of written information [15].

Intuitive (random) versus Sensing (sequential): Intuitive learners prefer information that originates from their imagination, reflection and internal memory. They think in advanced, no-sequential and large-scale ways and enjoy creating new theories and possibilities. Conversely, sensing learners prefer information that arises from senses. They think about here and now, and prefer facts to theories. They would like to be guided and instructed by teachers [1],[2].

Global versus Analytic: Global learners concentrate on the big picture and follow their instincts or guess the

main idea of a text. They like short answers rather than long explanations. On the other hand, analytic learners focus on logical analysis and thinking to tackle problems. They break ideas apart and tend to place more emphasis on grammar rules [5].

Active versus Reflective: Active learners enjoy doing tasks directly by applying and discussing them with others, while reflective learners understand and remember information best by reflecting on it in advance. Active learners prefer to work in groups, while reflective learners enjoy working alone or in pairs [1]

Individual versus Group preferences: Individual learners prefer to work and learn independently on their own. On the other hand, learners with a group preference like to study and learn in groups [5]

2.1 MATCHING LEARNING STYLES TO TEACHING STYLES.

It is assumed that learners learn better, if their learning styles match the format of their instruction. For example, a visual learner may learn better, when information is presented to him/ her visually. This approach is termed "learning hypothesis" or, in its recent version, "meshing" or "matching hypothesis" [7]. Conversely, a mismatch may leave negative impacts on the learners.

The matching, or meshing hypothesis implies that students' learning is enhanced when a mode of instruction that is used matches their learning preference. It is not enough for research to simply show that students may have preferences for certain modes of learning because studies on metacognition have constantly shown that students' preferences and evaluation of their own learning tend to be highly incorrect when compared to actual learning. Consistent, replicable evidence of achievement is necessary to justify the cost and effort required to implement learning styles-based instruction.

Recently, a group of distinguished cognitive psychologists were commissioned to assess the type of evidence that would be required to confirm the learning styles hypothesis and to search for empirical research that met those criteria. These researchers concluded that in order for the learning styles hypothesis to be confirmed, numerous well-designed studies would have to test the matching hypothesis and show significant interaction effects.

These studies did not provide support for the learning or meshing hypothesis. However, these negative results cannot be deemed as a complete refutation of the hypothesis. A study to determine whether learners whose style matches the instruction they receive perform better than their mismatched counterparts do was reviewed. A group of 324 proficient and gifted high school students were the study sample. The researchers analyzed the data and made a comparison between the performance of matched subjects and the mismatched ones. The results showed that matched subjects outperformed their mismatched peers on two of the three types of assessments [7].

4.2 THE IMPORTANCE OF IDENTIFYING AND UNDERSTANDING LEARNING STYLES

Learning styles play a significant role in the lives of learners. When students recognize their own learning style, they will be able to integrate it into their learning process. As a result, learning process will be easier, faster, and more successful. Another benefit of identifying learners' style is that it assists them in solving problems more effectively. The more successful learners are at dealing with their problems, the better they will control their own lives [3]. Understanding learning style helps learners become more independent and accountable for their own learning. Consequently, learners' confidence will increase and teachers control over learners will lessen. At this point, learners become the center of the learning process and control their learning while teachers act as facilitators [17]. Another advantage of understanding learning styles is that it helps teachers to design lesson plans to match their students' styles.

Matching is especially important when dealing with new or poor learners as they easily become frustrated at this stage of learning. In other occasions, mismatching might be convenient as to help learners experience new methods of learning and accommodate different ways of thinking and reflect on their own styles. However, mismatching should be treated with caution as it may lead to learners' dropouts [18].

(Manal *et. al.* 2015) suggests three advantages of identifying learning styles. They are: academic, personal, and professional advantages. Academic benefits include enhancing students learning ability, triumphing over all educational stages, finding out how to study in an ideal way and gaining good grades on tests and exams, controlling classroom limitations, alleviating frustration and levels of stress, and broadening existing repertoire of learning strategies. Personal merits include increasing students' self- esteem and self-confidence, learning how to best optimize learners' brain, knowing students strong and weak points, learning how to make learning more enjoyable, increasing motivation for learning, and learning how to strengthen students' innate abilities and skills. Professional virtues encompass being informed of professional topics, gaining an advantage over competition, being effective in team management, developing students' sales skills, and surging power of earning.

3.0 DATA COLLECTION AND ANALYSES

In order to investigate the learning styles of students, we performed a study, where 200 students participated. All the students were drawn randomly from The Federal Polytechnic Ile Oluji, Ondo State, Nigeria. A questionnaire was administered to the students to detect their learning styles and the results of the study are presented below.
The Index of Learning Styles (ILS) used for the study was a 44-item questionnaire developed by Felder, Silverman and Solomon for identifying learning style according to FSLSM. Each learner has a personal preference for each dimension, with 11 questions posed for each dimension. Answer "a" correspond to the preference for the first pole of each dimension (Active, Sensing, Visual and Sequential); while answer "b" to the second pole of each dimension (Reflective, Intuitive, Verbal, or Global)

In the analyses of the distribution for each dimension of the scale, it was found out that 50.10% of the students under study have an active preference; 57.82% have a sensory preference; 54.68% have a visual preference and 56.50% have a sequential preference. The relative percentage of these preferences under each dimension is shown in table 3.1 below.

Table 3.1: Distribution Analyses 1

Activist/Reflector		Sensing/Intuitive		Visual/Verbal		Sequential/Global	
50.10%	49.90%	57.82%	42.18%	54.68%	45.32%	56.50%	43.50%

Using a scale of 1-11, values from 5-11 are used for the Moderated/Strong preferences while values 1-3 was for the Balanced preferences. Table 3.3 below shows a more detailed description classifying the preference of learners under Moderated/Strong and Balanced preferences in percentage.

Table 3.2: Distribution Analyses 2

Activist/Reflector			Sensing/Intuitive			Visual/Verbal			Sequential/Global		
Mod/strong (Activist)	Bal	Mod/strong (Reflector)	Mod/strong (Sensing)	Bal	Mod/strong (Intuitive)	Mod/strong (Visual)	Bal	Mod/strong (Verbal)	Mod/strong (Sequential)	Bal	Mod/strong (Global)
21.6%	54.5%	23.9%	32.7%	63.6%	3.7%	14.4%	81.8%	3.8%	35.4%	54.5%	10.1%

3.1 RESULT OF ANALYSES

Out of 200 students that the questionnaire was admitted to, figure 1 below shows the graphical representation of the result of the analyses.
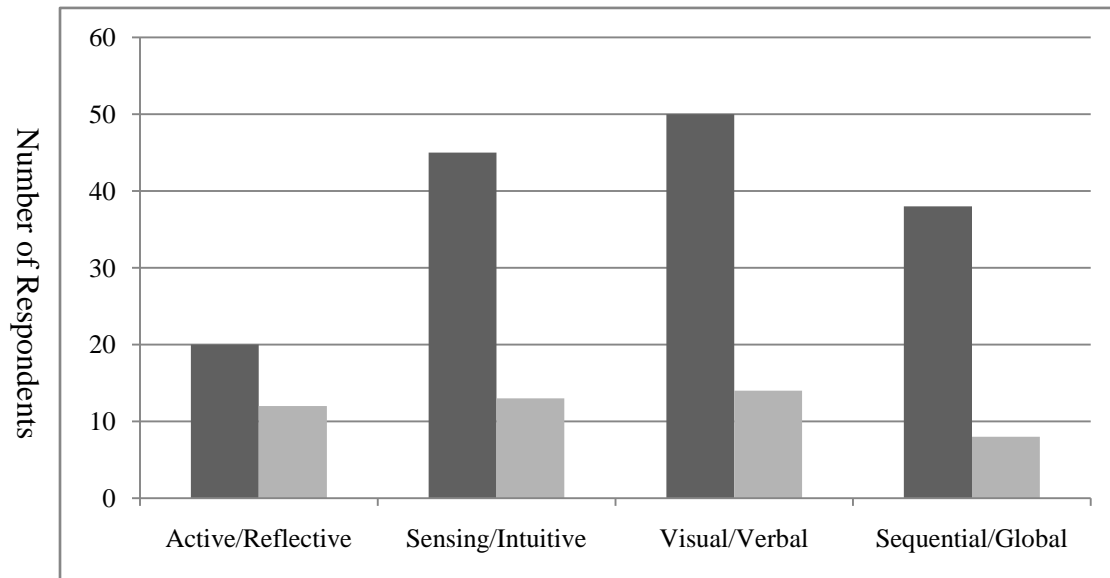
Fig. 1: Learning Style

3.2 DISCUSSION

Active learners learn by doing something with information. They prefer to process information by talking about it and trying it out. They like discussing, applying, or explaining it to others

Reflective learners learn by thinking about information. They prefer to think things through and understand things before acting.

Sensing learners prefer to take in information that is concrete and factual. They are oriented towards details, facts and figures and prefer to use proven procedures. Sensors like solving problems by established methods and dislike complications and surprises.

Intuitive learners prefer to take in information that is abstract, original, and oriented towards theory. They prefer discovery possibilities and relationships. They look at the big picture and try to grasp overall patterns. They like innovations and not repetition.

Verbal learners prefer explanation with words written and spoken explanation.

Visual learners prefer visual presentation of material. They like pictures, diagrams, graph, charts, time lines, films and demonstration for easy learning.

Sequential learners prefer to organize information in a linear and ordered way. They tend to gain understanding in linear steps, with each steps following logically from the previous one. They prefer to work with information in an organized and systematic way.

Global learners prefer to organize information in a random way without seeing connections. They are able to solve complex problems quickly but have difficulty in explaining it.

As shown in fig. 1, the highest learning style model in The Federal Polytechnic, Ile Oluji is the visual learning style model, followed by sensing, sequential, active, verbal, intuitive, reflective and global learning style model respectively.

4.0 CONCLUSION

The analyses that was carried out on the data gotten from the ILS questionnaire was done with the aim to get the highest learning style model of learners in The Federal Polytechnic, Ile Oluji Each learning style dimension was divided into eight, and each model analyzed in order to achieve our aim.

Based on the results, the summary of the research goes as follows:

i. Every learner has a preferred learning style.

ii. The highest learning style of learners is the visual style.

iii. There will be a better yield of result if learners are being taught according to their preferred learning style.

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