Sapientia Foundation Journal of Education, Sciences and Gender Studies (SFJESGS), Vol.2 No.3 September 2020; pg. 177 – 188
ISSN: 2734-2522 (Print); ISSN: 2734-2514 (Online)

LEARNER-CENTERED INSTRUCTION: A PARADIGM SHIFT FROM TEACHER-CENTERED INSTRUCTION IN THE TEACHING OF BASIC TECHNOLOGY IN UPPER BASIC SCHOOLS

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Abstract

Learner centered and teacher centered instruction have been on since many years but leaner centered instruction indeed is a paradigm shift from teacher- centeredness. It gives the learner all chances of being an effective participant in teaching-learning process. Here teaching/instruction and learning have been discussed. Greater emphases were given on learner-centered instruction hence it creates room for effective participation, long retention of learned materials, individual differences of the children in learning and other benefits could be derived from it. While the enormous benefits of learner-centered instruction have been emphasized, it has some challenges such as making the class noisy, expensive in terms of resources, time consuming among others. To overcome the challenges that many learner-centered instruction/teaching some recommendations have been made herein. They among others include that only professional teachers should be employed to teach Basic Education Children, there should be adequate instructional materials for the children to work with, classrooms should be spacious enough for the children to perform and participate effectively,. All in all, it was concluded that learner-centered instruction is more academically effective than teacher-centered instruction. It was also concluded that children retain learned materials longer in their memories and it gives the teachers more chances to supervise the activities of the children hence both the slow and the fast learners will be given the attention they deserve.

Keywords: **learning, instruction, learner-centered instruction, teacher-centered instruction, Basic Technology**.

Introduction

As teachers we tend to think that teaching is all about teachers and their roles. In fact the most important of the educational processes is the children and what they learn. This leads us to

consider what we mean by learning. As you read the educational literature and more specifically, basic technology, you comprehend the need for learning to be learner-centered.

Views on learning, instruction and Basic Technology

Learning is seen as a process of acquiring new understanding, knowledge, bahaviours, skills, values, altitudes, and preferences. Learning theories describe the ways that theories believe people learn and assimilate learning new ideas and concepts.Often they explain the relationship between information we already know and the new information we are trying to learn (McGriff, 2001). Gayla (2015) and Agulanna and Nwachukwu (2009) however, gave some examples to include such learning theories as behaviorism, Cognitivism, Constructivism and connectivism and further explained that various learning theories fit within the general categories. The ability to learn is possessed by humans, some learning are immediate, induced by a single event (e.g being burned by a hot iron), but much skill and knowledge accumulate from repeated experiences.

Human learning starts from birth (it might start even before) and continues until death as a consequence of ongoing interactions between people and their environment. Learning generally is seen as a product, as well as a process. Deep and long lasting learning involves understanding, relating, ideas and making connections between prior and new knowledge, independent and critical thinking and ability to transfer knowledge to new and different context. Learning is not something done to students rather something students do themselves. It is the direct result of how students do things themselves. It is the direct result of how students interpret and respond to experiences.

A keen look at schools and methods used to impart knowledge in learners in Nigeria today often reveals that classroom instruction in majority conducted by teachers in a face to face manner in what Gayla (2015) referred to as direct instruction. Direct instruction according to Gayla is a highly teacher-directed instructional strategy and is among the most commonly used. It is a strategy that adopts methods such as lecture, didactic questioning, explicit teaching, practice and drill, and demonstration. Ajelabi (2000), while describing prominent classroom instructional methods, wrote that the predominant teaching methods used are characterized by teacher-centeredness, content-laden, passivity of learners, rote learning, shallow-learning and are usually examination oriented. In more explicit words, Ajelabi (2000) referred to it as the talk-chalk method; he further explained that teachers found it very convenient to adopt this teaching method but that it was however, a one-way mode of communication in which learners are passive, making it inappropriate for practical/skill oriented subjects and for hearing impaired learners. This resonates Duru's (2015) opinion that teaching has until now rather been teacher-centered rather than learner centered.

Literarily, the word instruction can be said to be the process of providing guidance, insight or direction to a more naïve person, who is expected to acquire new knowledge or skill or to help the person achieve a preset goal. It is a human undertaking whose purpose is to help people to learn. Normally, it is thought as events which are external to the learner-events embodied in the display of printed pages or the talking of the teacher. The concept is adopted in many scenarios such as a parent trying to provide guidance to a child at home, by a superior in a work place guiding a whole team to a certain goal or by leaders while providing guidance to followers. It is a concept that is also adopted in classroom instruction.When adopted in the classroom is defined as the purposeful direction of the learning process (Huitt, 2003). It is also

noted as one of the major teacher-class activities along with planning and management. While some writers such as Fernandez-Armesto (2012) are of the opinion that instruction and teaching have very district differences, both terms are often found interchangeably used in textbooks Duru (2011) defined teaching as all those relevant activities teachers engage in an effort to help learners acquire useful knowledge and skills. Therefore it remains unquestionably that instruction plays a major role in acquiring new knowledge and thus stands handy for teachers. The major essence of teacher's work is to ensure that students are learning.

Achonye (2015) observed that the dominant teaching strategies in secondary schools are lecture method. However, questions and answers, demonstration, experimental and project methods were sometimes used, while discussion, co-operative/collaborative and peer-tutoring methods were rarely used. Achuonye revealed that innovative methods-discovery/inquiry, problem-based learning, and contextual methods were least used or never used, even though these are the research-proven strategies that enhance learner centeredness and active, deep learning which promote creativity, high cognitive skills, self-directed and lifelong learning that are very much needed in every functional education (Biggs, 1999; Day and Williams, 2000; Miller and Snlbecker, 2000). Putting these observations in other words, one will notice that teachers are more comfortable with instructional methods involving traditional methods which they are more comfortable with and which require less resources other than those requiring special resources since many Public School are reportedly underequipped. However, it will be wrong to conclude that the later is solely adopted by teachers since some instructions are still carried out in School Laboratories where inquiry-based learning is adopted.

Learner-centered instruction

Learner-centered instruction is a pioneer of development of learning approach. In this method, learners' activities are important indictors in learning process and quality of learning product (Zohrabi, 2012). In teaching and learning, learner-centerd approach links with flexible learning (Acat and Dorimez. 2009). Therefore, the learner-centered instruction is a place where the teacher considers the needs of the learners, as a group and as individual and encourages them to participate in the learning process all the time. The teacher's roles are more of a facilitator than instructor, the learners are active participants in the learning process and teachers help the participants in the learning process. Teachers help to guide the learners manage their activities and direct their learning.

There are several activities in the learning process that bring many advantages in the learning process. In this method, learners may work alone, in pairs or in groups (Zohrabi, 2012). When learners are working alone, they can prepare ideas or make notes before the class discussions, doing learning tasks or do assignments. Learners can work together in pairs or groups when they compare and discuss their answers or read to react to one another's assignment and suggesting improvements. Learners may work together as role-players, share ideas, opinions and experiences. According to Ngaraju (2013) these activities bring some advantages to learners, as when learners work together they talk more, share more ideas, learn from each other, feel more secure and less anxious. The learner-centered instruction centers on learners (Barman, 2013). It builds on learners' needs and interest. Education is seen from the perspective of the learner rather than that of the teacher while learner remains at the center of

all educational activities (Barman, 2013). Barman Further noted that in this paradigm, teachers mostly facilitate students learning, ensuring development of their personality as self-reliance, critical and creative thinking. Defining the learner-centered approach to instruction, McCombs and Whisler (1997) defined it as "The perspective that couples a focus on individual learners (their heredity, experiences, perspective,backgrounds, talents, interest, capacities and needs with focus on learning. Also, a useful definition of learner-centered instruction is seen as that which "gives the students greater autonomy and control over choice of subject matter, learning methods and pace of study" (Gibbs, 1992). It should be noted that this definition brought into focus the core characteristic of the learner-centered method by promoting the idea that learners should have more input into what is learned, how it is learned and when it is learned.

Shifting education from teacher-centered to learner-centered is the order of the day. Main changes are brought about when the shift takes place. These changes are Visible in the process of instruction, the behavior of the students and the behavior of the teacher. The changes include that;

a. Instruction changes from being teacher-centered and content-driven to learner-centered and learning process driven.
b. The student's role changes from that of being a passive recipient of empty receptacle to that of an engaged learner and active agent in the learning process.
c. The instructor's role expands from that of knowledge – laden teacher, who professes truths and disseminates factual information, to that of being a learner mediator or facilitator.

In a nutshell, a learner-centered instruction is one where the complete learning experience of learners is focused.

Teacher-centered instruction

Teacher-centered instruction is seen as a learning method in which the teachers play important role in the learning process. Teachers are information providers or evaluators to monitor students to get the right answers and students are viewed as learners who passively receive information. The main focus of the teachers is getting students to perform well on mandated test rather than catering to students' need (Zohrabi, 2012). The teacher has less motivation for innovation in teaching. According to Acat and Donmez (2009), in teacher-centered learning, teachers usually use particular textbook, which are mostly grammer oriented.

Teachers are the most dominant source of information in teacher-centered learning, for example, all questions which are raised by the students, if any, are answered directly by the teachers without the students' involvement. In design of class activities, teachers control every single learning experience. Traditionally, teacher-centered learning focuses on what teachers do and not on what learners are learning and this emphasis often leads to students who are passive and who did not take responsibility of their own learning. Teacher-Centered classroom instruction has always made the teacher central to the efforts of education emphasizing on teaching aids, teacher's control of the learning process and the classroom.

Behavioral theories of teaching and learning have for a long time influenced people's understanding of classroom management. Brophy (2006) supports this by indicating that the primary emphasis for classroom management in a behavioral model is the use of techniques that bring students behavior under stimulus control when education is teacher-centered, classroom remains orderly and students are quite while the teacher retains full control and therefore denying learners to actively participate in their learning. If the process of teaching and learning is teacher dominated, instruction becomes boring for students resulting in their minds wondering and may miss important facts. These behavioral approach to classroom management have been viewed as being consistent with a "traditional or transmission approach to instruction where students are not allowed to express themselves and direct their own learning (Tabulawa, 2006).

According to Skrbina (2015), technology is in the work of pre-socratic Greek Philosophers that we first glimpse which principle of (driven) ordering in the word "Logos" which implicates the principle of creation that was conveyed in the meaning of "Techne". The word "Techne" is widely accepted to mean "Skill" and "art" (Volti 2009). In the same vain, Bain (2008) asserted that technology includes all tools, machines, utensils, weapons, instruments, housing, clothing, communicating and transporting devices and skills by which we produce and use them. Stanley (2006) continued by saying that technology refers to all tools and procedures used or required for manufacturing and producing materials needed for daily life. Basic technology therefore is a subject taught in Junior Secondary School with the incorporation of many skilled subjects such as woodwork, metal work, electrical/electronic, mechanics, technical drawing and local crafts to enable students of the school age be abreast with basic technological skills and competencies for useful living in the society (Otamba, 2003).

Basic Technology is one of the core and compulsory subjects offered in Junior Secondary School level in Nigeria. Its curriculum includes a broad range of fields of study. And its course is meant to provide a holistic view of technology to students. The subject guidelines and contents have currently been structured into teaching sequence, which consists of clear explanations and description of how results are obtained using different tools, machines and materials. Basic technology is also a skill development course, which aims at providing students with technical literacy for everyday life.

One of the basic needs for teaching Vocational Subject in Junior Secondary School is to enable the individuals acquire appropriate skills, abilities and competencies as equipment for him to live in and contribute to the development of this society (Olaitan, 1996).Implicitly one of the broad aims of Basic Technology among others is "to equip the students to live effectively in our modern age of science and technology (FRN, 2014).

Basically, technological skills can facilitate the development of basic skills such as understanding visual, imagery, numeracy, and effective communication, which form the framework around which higher-order thinking skills can be constructed. Discipline and profession-specific skills build upon basic skills to form a breath of knowledge that spans the social and physical sciences, literature and history.

Basic technological Skills also promote higher- order thinking skills that lead to independent learning and social responsibility and foster conceptual skills such as abilities to think

holistically, synthesize information and create meaning. It is essential that teachers access professional development that helps them develop the skills of knowledge so that they can create coherence across the curricula they teach, the technologies they use with the students and the larger mission of the School Community (Staples, 2005). Creating educational coherence is a complex task in the information age because technology has changed teaching and learning from what most teachers were trained to do. Teachers are now called upon to be educational entrepreneurs (Webber, 2005) who are able to innovate, network, work in synchronous and asynchronous environments and demonstrate concurrent local, national and global cultural literacies. They are also expected to create educational organizations which serve as knowledge centers that integrate traditional and technology medicated instruction.

Benefits of learner-centered instruction

- **Participation**: The first step towards the success of any learner learner-centered instruction is participation. A learner-centered approach addresses all essential needs of the learners, ensuring learners get a personalized and convenient learning experiences. For example, if a certain learner group prefers games and exercises the instruction should be made more interactive. Similarly, if learners are more likely to access the subject content on tablets or mobiles, the curriculum should be designed to support these needs. Due to the minute attention paid to learner's needs, learners-centered course ensure greater participation in learning.

- **Improves Retention of Knowledge:**
  Given that a learner-centered instruction places high emphasis on relevance and engagement, it greatly influences learner's interest level. The learner-centered instruction shifts focus from graphs to learning, which emphasizes only on graphs to learning with more engaging and simulating content. For example, if you are developing a curriculum for Basic Technology, the curriculum should have real life scenarios that are relevant to the learners' day to day problem. Also, the course will have certain elements, which will make them use the knowledge they may have acquired previously. This way the learner will retain knowledge better and longer as opposed to a plain course with a lot of theoretical knowledge.

- **Boosts Performance at Work:**
  A typical learner-centered lesson will have a lot of scenarios, case studies, role plays, etc. For example, if an organization is training its employees on quality guidelines or industry best practices, a learner-centered course with a lot of engaging and interactive content will help learners grasp the content more effectively. This way, learners are more likely to apply their learning at work, leading to improved on-the job performance.

- **Development of Problem-Solving Skills:**
  A learner-centered learning course has a lot of real life examples, including games, quizzes and challenges. The course may have challenges and games involving real life problem which will force learners to think of solutions. This kind of training develops problem-solving skills, which is useful when learners encounter similar problem at work.

- **Fosters Collaborative Learning:**
  Learner-centered instruction provides the opportunity to foster collaborative learning. Lessons are designed in such a way that learners have to involve their peers and superiors in completing the course. Alternatively, the courses have group exercises, which makes learners come together to solve problems and thereby share learning. The approach not only encourages collaboration but also fosters teamwork.

- **Makes learning More fun:**
  Use of games, plays and stories in learner-centered instruction makes learning more fun. A learner-centered approach provides a lot of choices to learners. For examples, if a particular subject involves play, learners should be given choices of topics to rehearse. Likewise, learner-centered learning instruction uses lots of different media such as Videos, Podcasts, practical assignment etc. With these elements, learning is no longer perceived as boring and monotonous.

- **Facilitates Personalized Learning**
  All learners do not have the same learning needs and rates. Some may understand the basics of a concept while some may understand in details. Also, some learners may already have some knowledge about a topic, where as some of them will be entirely new to the topic. A traditional learning course will treat all learners the same way and may not respond to the needs of different types of learners. Things are different with learner-centered instruction, here developers include supplementary materials with massages like "click here to know more". The additional materials make learning more effective.

Disadvantages of teacher-centered learning
The teacher-centered instruction although has some advantages but its disadvantages are discussed.

1. **Teacher-centered instruction limits itself to a specific contentas proposed by the teacher.**
   Its learning process therefore stops upon its expected delivery. Its main argument is the learner merely master limited sets of knowledge, example, by memorizing content or applying rehearsed formulae, without addressing actual process-skills as needed in professional practice (Schon 1983).
2. **Teachers Instructor Dependency**
   Teacher-centered learning fosters a culture whereby the learner does not outgrow his dependency on their supervising instructors or teachers. One of the main goals of modern pedagogy by contrast is to create strong self-directed learners. A teacher-centered learning environment does by definition neither facilitate nor empower learners' autonomous study, skills and subsequently lifelong learning skills (Trilling & Fadel, 2009).

3. **Non-Facilitation of the Higher Cognitive and Meter-Congnitive Skills**
   Higher cognitive skills include abilities like analysis, synthesis, evaluation (Andreson & Krathwohi, 2000), critical thinking, interpretation and self-regulation (Schraw & Robinso, 2011). Meta-cognitive skills such as facilitated in Problem-Based Learning include the questioning about the justification and validity of arguments, not just the giving of reasons themselves (Barrow H, 1992). Teacher-centered learning most often doesn't address the importance of open inquiry which can occur at any stage of the learning process.
4. **Monopolized and Limited Assessment**
   Since the learner is only being assessed by the teacher or instructor, critical assessment of oneself and others is not an intrinsic part of teacher-centered learning. Standardized grading and monopolized assessment encompass a traditional top-down approach. Assessment are in many cases only carried out as summative and not formative evaluations and they rarely address qualitative issue of learner's progress. In contrast to a traditional grading system, Multi-perspective assessment (Barrows & Weekeng Neo, 2007) focuses on a problem-solver, researcher and team player.
5. **Global Workforce Competencies**
   As the key competencies many researchers quote cross cultural communicative competencies, problem-solving skills soft-skills to motivate and facilitate workgroups to be innovative and high content adaptability (Ferrell & Fenwick, 2007). To latter criterion high cognitive and meta-cognitive skills pose a prerequisite. Almost all of such competencies are highly mediated in traditional curricula, in particular learning environment are skill based on passively receptive classes and not interactive small groups.

Instructional strategies in learner-centered instruction

1. **Co-operation** –Cooperative learning involves small groups working together to accomplish learning task
2. **Presentation-**Presentations are learner presented assignment. Students can do these in groups. Students can do these in groups or individually.
3. **Panel/Expert-** Panels are ways to include many voices on a subject. Students can write and ask questions in question and answer session.
4. **Knowledge-** Put it on the poster. What do you know? When do you know andLearn?
5. **Brainstorming-** Brainstorming puts the thinker to work. Present a situation. Ask learners to creatively think.
6. **Create Media**-Present an issue and have the students create a Public Service Video.
7. **Discussion**- Present an issue and have the students talk about it. If they need additional information, have them go find it.
8. **Small Group** - What can a group of people accomplish? Draw out the best characteristics of the group Assignment roles
9. **Case Study-** Use case studies in the classroom to learn about complex issues, apply critical thinking, and explore scenarios.
10. **Jigsaw-** Break students into groups, giving each member a different task. Bring group back together and share.
11. **Learning Center-**Breaking up the classroom into different activities. After a set time ask students to rotate to new activity.

12. **Experiment –** Design experiments and engage the students or, ask students to design the experiment
13. **Role Play -**Roleplaying allows the learners to try out the experience. It can be instructor created or learner created
14. **Simulation-**Computer simulation has grown. Use technology to stimulate a real event. Practice without fear or failure.
15. **Laboratory –** Setting up the class in a lab style enables students free movement and hands-on activities.
16. **Workshop –** Student can create the workshop and conduct it with her peers. The peers can then give feedback.
17. **Demonstration –** Demonstration is a fun way to get students involved.
18. **Index Card-** There are many ways to use an index card. Give the students the index card and ask them to create the activity. Set the guidelines together.
19. **Inquiry Based-** Inquiry based learning starts with a question. It comes in many forms. Try guided inquiry for more structure. Try open inquiry for less.
20. **Mental Models –** Build mental models that can withstand new information. Draw out your mental model. Test it, challenge it. Build it.
21. **Project-** A project simulates what a learner could do at the workplace. It could also be a service project where students create positive change.
22. **Problem -** Problem based learning seeks to solve problems. It might be a part of problem. Learner finds solutions, while instructor facilitates.
23. **Discovery –** Discovery can be broad or narrow in scope. Some discovery learning's allow the learners to choose a topic and explore.
24. **O and A –** A session that allows learners and facilitators to learn more from each other.
25. **Social Media-** Use social media to effectively share a message. Get feedback. Keep it short and to the point. The message should be conveyed effectively?
26. **Games –** Games can be used to teach concepts, to give a learner a break to think, or to challenge one's ideas.
27. **Competitions –** Students can engage in competitions locally or internationally. This allows the learner to engage with others around the world.
28. **Debate-** During a debate students challenge each other. The debate can take a break at intervals for additional research.

Teacher's Roles in Leaner-Centered Instruction for Effective Learning

In learners-centered instruction, teachers' role now is to guide, facilitate, coach, etc. and this also includes;

1. **Providing various ways and forms to access learning materials:**
   In learning-centered teaching, teachers provide various ways and forms to access learning materials because learners have different abilities. Certain ways of teaching are only suitable for certain learning materials, while there are many materials to be used by learners. If the teacher only provides one way material, it tends to be bored and students may not be interested in participating actively. For example, teacher can provide task to the students and ask them to do it in pair or group. By doing this, students often understand what his friends are saying, rather than the teacher, the usual way of learning used by students is more easily captured by other students. So

utilizing students' assistance can improve understanding and mastery of learning materials.

2. **Teachers act as facilitators who help students with learning materials.**
   Currently, the role of the teacher in the classroom is more emphasized as a learning facilitator. Teachers are no longer the only source of information to learners. This is confirmed in the implementation of 2013 curriculum, because infact teachers were often the main source of information and learning tends to focus on the teacher.This emphasizes that teachers now play the role of facilitators, helpers or consultants.

3. **Providing support to students in active learning to improve students' skills in mastering the knowledge.**
   During the learning process, in order to help the students learn how to learn independently and effectively, the teacher plays the role of a manager who creates a supportive and stimulating learning environment, who is available as a resource person, who challenges learners to achieve their potentials and who helps learners to become aware of instructional requirements and expectations, associated with the lesson which they are studying. This means that it is the teacher who ultimately assists the learner to determine the success of learner centered instruction.

4. **Increases motivation and enthusiasm of the learners to promote learning and improve ability to learn independently.**
   Teachers play important role in creating an environment that foster student's learning, accommodates different learning styles, and motivate students to accept responsibility.

Summary

This work summarized the need for learning to be learner-centered. Learner-centeredness is a necessity in this paradigm shift since learning involves acquiring new ideas and abilities by a person which does not always require the teacher as the most dominant source of information. Learner-centered instruction creates room for effective learners participation, gives room for individual differences and helps to retain learned materials which in-turns, help learners to develop and function while in the society. The problems of teacher-centered instruction among others does not allow students to be independent. Whether learner-centered instruction is noisy or expressive, it makes the students to retain learned materials for a very long time.

Conclusion

Although learner-centered instruction is not learning without the teachers, it starts with the teacher and as such has become be every teacher's goal to make learning more effective. And since the method had shown repeated superiority over teacher-centered instruction in terms of assessment outcome both in mastery, long-term retention, acquision of critical thinking, formation of positive attitudes towards the subject being taught or level of self-confidence in knowledge and Skills, the method has been adopted by all 21st century teachers for worthwhile learning.

Learner-Centered instruction is superior to teacher-centered instruction hence it makes the students to be actively involved in the teaching-learning process.

The teaching and learning of Basic Technology is more effective with the use of learner-centered approach. It will help in the effective application of entrepreneurial skills for maximum technological development.

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