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## Enhancing students' learning: The Case of Motivational Graphics

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### Abstract

This is a paper based on learners motivation. It discussed the use of graphics as motivational learning materials to keep students interested and engaged throughout a lesson. It mentioned that motivational graphics are two dimensional materials that they have surfaces that are flat with an area (length and breadth). They are a visual presentation that facilitates understanding of any concept or ideas easily than plain text and are deeper ways to maintain attention and interest beyond the simple provision of interesting graphics. The study stated that graphic organizers are both efficient and effective as motivational graphics and as a teaching and learning tool in any instructional process. It enumerated the educational significance of graphic organizers, graphics in teaching and learning and then the instructional applications. It was recommended among others that, its application as teaching strategy should be encouraged among teachers of Universal Basic Education I (UBE) in all states of the Nation.

**Keywords:** Graphics, Motivation, Motivational graphics, Graphic organizers

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### Introduction

Education is the process by which an individual is encouraged and enabled to fully develop their potentialities which serves the purpose of equipping the individual with what is necessary to be a productive member of the society. People acquire and develop knowledge and skills through learning, thus, effective teaching is crucial to learning because the products of teaching such as attitude, knowledge, morals and skills acquisition are much dependent on the teacher's effective teaching. The effective teaching of a teacher and students' learning can be enhanced through the appropriate

strategy adopted in a learning situation especially with the inclusion of graphics.

Graphics denotes something more than mere art or science of mechanical drawing. Hornsby Oxford Advanced Learner's Dictionary of current English (2018 edition) describes graphics as an adjective that uses visual symbols and causing one to have a clear picture in mind. Graphics is a term derived from two Greek words "graphikos" meaning "painting", drawing and "graphein" meaning to "write" and "to represent by means of lines". As an adjective, graphics means Vivid, clear description, effectively presented message.

It is the "arts by which we express ideas in lines, pictures, sketches, and diagrams". It includes materials which communicate facts and ideas clearly through a combination of drawing, words and pictures. Graphics are also images or visual representations of objects. They are often contrasted with text. They are also materials with two dimensional representations, and are non- projectionals, flexible and vary in size ratio to the original objects or event being represented.

Abimbade, (2019) describes graphics as two - dimensional materials showing that, they have surfaces that are flat with an area (length and breadth). A well-designed graphics may provide the needed structure that allows learners to effectively select, organize, and integrate new information. A good graphic material attracts the learners because they are usually legible, brief and simple for easy comprehension.

The basic idea behind graphics is the intention of writing, which regards all forms of written and drawn elements as writing. It could be described as visual images or designs on some flat surfaces, such as a wall, screen, paper, or stone to inform, illustrate, or entertain. They also include:

- Pictorial representation of data, as in computer-aided design and manufacture,
- Typesetting,
- Educational and recreational software (Clark, 2010).

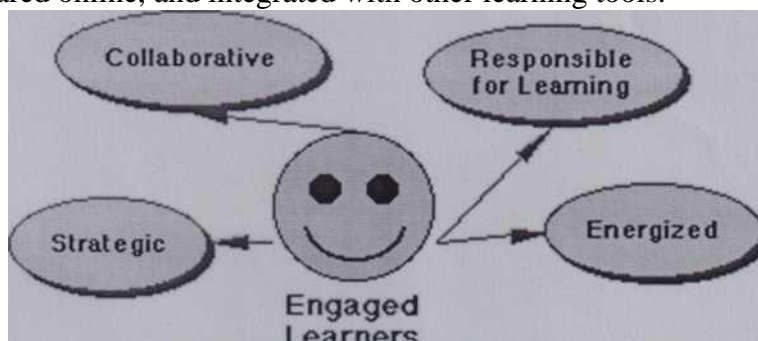
They are a visual presentation that facilitates understanding of any concept or ideas easily than plain text. Graphics can help in the illustration of ideas, facts and keys, diagram, chart and symbols. Tang (2020) noted that graphics encourage the understanding of salient points using pictures and can give a large amount of information at a time. Though they may appear simple to the eye, but, they are highly instrumental in improving the teaching and learning process in the instructional processes.

### **Motivational Graphics in the Teaching and Learning Process:**

Motivational Graphics are often incorporated into instruction to raise the general enthusiasm level of a lesson and of the learners. Much of the motivating appeals of graphics are due to novelty. Using graphics to arouse general curiosity and interest is seen by educationists as a very special way to increase motivation. agreed that graphics are deeper ways to maintain attention and interest beyond the simple provision of interesting graphics. For instance, if the nature of the learning task is satisfying, relevant, and challenging, learners are more likely to participate in meaningful ways. Hence, their time on-task is not only increased, but the quality of the learning time is enhanced as well. It involves the use of charts, concept mapping, pictures, cartoon, diagrams or a table of relationship constructed by the teacher which guides the learner's

thinking ability as they fill-in and build upon a visual map or diagram especially with the use of Graphic organizers. Ayverdi 2014 emphasized that graphic organizers are teaching and learning tools that show organization of concepts as well as relationships between them into a visual format.

McKenzie (2019) defined graphic organizers as visual tools used in education to organize information and concepts, highlighting relationships between them. Technology enhances graphic organizers by allowing for dynamic creation, collaboration, and sharing. For instance, digital graphic organizers can be easily modified, shared online, and integrated with other learning tools.



### **Mckenzie, J. (2019), Graphical Organizers as Thinking Technology**

Khan, (2020) posits that graphic organizers are effective visual learning aids for learners which are incorporated into the curriculum to enhance the understanding of subject matter content. They are helpful learning tools for students of all ages which organize, clarify and simplify concepts. A careful design and creation of the use of graphic organizers provides important intellectual bedrock that guides learners towards understanding of concepts. Graphic organizers ultimately build learners capacity to draw upon what are learned in order to become independent learners and problem solvers. Tureniyazova (2019) contend that they are great tools to meet the needs of all the learners. If information is presented in a graphic organizer, teachers should always be sure to model them before hand and the reason why the graphic organizer is being used should be explained to the learners before use. Using graphic organizers can be extremely helpful for both learners and teachers because it simplifies the learning process while making it more enjoyable and interactive for everyone.

Graphic organizers are both efficient and effective as motivational graphics and as a teaching and learning tool in any instructional process; as motivational graphics, they help teachers in:

- i. Introducing lesson topics,
- ii. Activating previous knowledge and its connection with the new lesson content as well as graphic organizing content to be taught.
- iii. Aiding learners to understand, identify and address any question that arises from
- iv. the lesson with graphic organizers (Wise & Cooper 2019)

The Educational Significance of graphic organizers as enumerated by Mudasir and Aqueel, (2012) is to:

- a) help in Showing relationship by means of facts, figures and statistics; understanding of abstract concepts and ideas in visual form;

- b) securing the attention of the pupils by their attractive format and simplicity of layout;
- c) Gaining of concepts of size, distance, space, location and direction by means of maps;
- d) Developing the power of analysis, synthesis and deriving conclusions from a data; and the grasping of information easily.

Baker and Bixler (2014), states that the purpose of most instructional graphics is to help explain something to the viewer in a manner that hopefully increases retention of the subject matter. To him Instructional graphics have seven possible functions in instruction:

- ◆ Descriptive - To show what an object looks like.
- ❖ Expressive - To make an impact on the learner.
- ❖ Constructional - To show how the parts fit together into the whole.
- ❖ Functional - To show a process or the organization of a system in a simplified manner.
- ❖ Logico-mathematical - To display a mathematical concept such as a curve graph. Some line graphs and charts with a scaled X and Y axis fall into this category.
  - ❖ Algorithmic - To show a holistic picture of the range of possibilities. Flow charts fall into this category.
- ❖ Data display - Illustrating textual data visually. Bar charts, pie charts, and Histograms fall into this category.
  - Enhance learner's engagement,
  - Facilitate their cognitive skills like brainstorming, generating of personal ideals, critical analysis etc.
  - It also improves comprehension.

In the same vein Bonnie, (2019). Summarized the applications of graphics to teaching and learning as follows:

**Attention:** Graphics attract attention to the material or direct attention within the material. This will heighten the likelihood of the learner to remember the material.

**Affective:** Pictures enhance enjoyment or affect emotions and attitude. This makes learning lively.

**Cognitive:** This involves using pictures to increase comprehension (for example, providing elaboration for a text explanation), to improve retention, recollection and retention of instructional contents, or to provide information that is otherwise not possible.

**Compensatory:** The compensatory use of graphics for motivation involves using pictures in helping slow learners by adding pictorial clues to decode content and text (by illustrating main points of the text). Motivational Graphics have often been recommended as an instructional tool which helps pupils in comprehending complex topics (Dexter & Hughes 2011).

It helps teachers to differentiate instruction based on the needs of learners and the content to be learned in order to increase comprehension of the key concepts (Bryce 2024) mentioned that graphic organizers have their roots in Ausebel's theories and research on advance organizers, as he advanced the belief that a learner's existing knowledge, which he referred to as cognitive structure, greatly influences learners' learning. When the cognitive structure expands by incorporating new information, learning occurs. To facilitate this process, graphic organizers provide learners with the framework and

motivation for relating existing knowledge to the new information learned. (Edutopia 2020).

### **Graphics in Teaching and Learning**

Mudasir and Aqueel, (2012), outlined the main graphics used in teaching and learning as follows:

- **Diagrams:** A diagram is a drawing that shows arrangements and relations of parts to the whole. It is a visual symbol made up of lines, curves and geometrical forms. They are normally used for teaching science, geometry, geography etc.

- **Graphs:**

A graph is a diagrammatic representation of numeric or quantitative data. They are considered as pictures which are self - explanatory and tell their story at a glance and are also called charts. They are used for analysis, interpretation and for comparison. The different types of graphs include line graph, bar chart, circle or pie chart, pictorial graph and flannel graph.

- **Maps:**

A map is a representation of plain surface in an accurate form in the form of diagrams drawn to scale, detailing boundaries of continents, countries etc. Geographical details like important, location of mountains, rivers, altitude of a place, contours of the earth surface and can also be represented accurately with reference to a convenient scale and suitable color schemes. Mayer (2011) states that there are different types of maps such as topographical maps, wall maps, atlas maps, relief maps, geographical maps, mineral maps, agricultural maps etc. In teaching, they are indispensable in teaching fundamental concepts such as size, distance, space, location and direction.

- **Posters:**

A poster is a bold and symbolic representation of a single idea. It is used in all walks of life, to convey, in a simplified form the desired information to a layman.

- **Cartoons:**

A cartoon is a metaphorical presentation in the form of picture or a sketch. It is universal in appeal and conveys only one idea (Ella 2021).

- **Flash Cards:**

Flash cards are pieces of card board or hand paper on which a word or words are written or some pictures are drawn. These can be used for word recognition, team competitions, teaching in speaking, and teaching writing.

- **Charts:**

A chart is a combination of pictorial, graphic, or numerical materials which presents a clear visual summary. The most commonly used types of charts include outline charts, tabular chart, and organization charts.

The focus here is on graphics that are intended to motivate and supports learning, such as text pages and online screen as well as work aids such as job cards and Web screens designed to help workers complete job tasks more effectively. The use of graphic in the classroom, enhance learning, because they are powerful tools, which appears simple to the eye but are highly instrumental in improving the teaching and learning process in the classroom.

All forms of graphics as mentioned above are good for instruction but it is good not to mix them all up in every step of a lesson. Graphics, be it charts, pictures, diagrams, photos etc, can convey a large amount of information at a go and so should be used singularly especially when used for learners at their tender age.

### **Instructional Applications of Graphics**

Rieber, (2010) put forward five instructional applications of graphics as guides to the ways graphics can be used in instruction. These are: cosmetic, motivation, attention gaining, presentation, and practice. The five applications took into cognizance learning outcomes and the events of instruction. He opined that the rationale for needing these guideposts is to guard against faulty decisions to include graphics based on misinformation, misinterpreted information, or no information. These functional categories should help the teacher to design and evaluate instructional graphics based on whether the intent of a graphic is to motivate and contribute to learning or to the affective appeal of a lesson. Sentzi, (2017).

- i. **Cosmetic Graphics:** Graphics is often used for purely cosmetic reasons. In a sense, it is a misnomer to call this an instructional function, because, by definition, no direct learning benefits are expected from cosmetic graphics. The purpose of a cosmetic graphic is to merely add to the polish or decoration of a package to make a program more attractive or aesthetically pleasing (Rieber 2010). Cosmetic graphics involves fancy screen borders, some uses of color, and the use of special effects. Cosmetic graphics often add a certain level of completeness or sophistication to a package. This may promote the feeling among students that the instruction is important, whether or not this is true.
- ii. **Attention-Gaining Graphics:** Graphics are often used for attention-capturing. This is an element of learning, because there are many sources of stimuli that compete for a learner's attention in and out of the classroom. Many of these sources are probably far more interesting than the instruction itself. Usually, these competing stimuli come from the learning environment, such as screeching chairs, music or laughter from down the hallway, or an attractive member of the opposite sex sitting in the next row. Competing stimuli also can come from within the learner's own mind, such as personal concerns like a home crisis or just general daydreaming. (The eLearning Coach 2024).

Pixelixe (2024) noted that, attention gaining is an important initial event of instruction. It is an obvious, practical, and rational application of graphics teaching and learning. It is an effective way of arousing, motivating and maintaining learner's attention during the instructional process, hopefully, this attention will be maintained long enough to retain their interest in the learning material displayed on the poster.

- ii) **Presentational Graphics:** Graphics can be used with or without accompanying text to demonstrate or elaborate lesson concepts, rules, or procedures. The use of static and animated graphics while presenting a lesson has been called "learning-by-viewing approach" to instruction (Lester, 2010). Most instructional applications of this type use representational graphics to directly depict critical information to students. Mayer, (2011) States that presentational graphic is an effective strategy for communication; because it helps learners focus their attention on the explanations given in the text. They also help learners form visual mental models of the materials explained by the text. Mayer suggests that visuals are useful motivational strategies when they satisfy four conditions:
  - 1) The text is potentially understandable by pupils;
  - 2) The visuals are designed and evaluated in terms of learner understanding;
  - 3) The graphics are used to explain information provided by text; and
  - 4) Students have little or no previous experience with the content.
- iii) **Practice Activities:** Graphics can be very useful in practice activities. It can act as visual feedback to students as they interact with lesson ideas and concepts. This application of graphics is particularly suitable to computer medium, such as those

involving visually based simulations (Rieber, 2010). Students learn from visual by discovery and practical work, in this way graphics act as instantaneous feedback. This application of graphics entails learning by doing.

Graphics are a great motivational elements or force for younger learners, they are fascinated by colors that is why they enjoy painting and coloring at their tender age, it is also the reason why they watch cartoons a lot. Therefor. The use of graphics in whatever form in teacher nursery and primary school pupils is important and recommended especially when they have to participate by manipulating theses graphics themselves.

### **Conclusion**

Learner motivation is a very important aspect of the instructional process that is why it is necessary and essential for teachers and trainers to learn what and how to motivate their learners and / or class to improve student's learning. Graphics are useful materials that can be used to rouse student's interest, keep them attentive and interested through their learning.

### **Suggestions**

The following suggestions are made:

1. Since this paper is based on motivation and the enhancement of learner attention and interest its application as teaching stratagem should be encouraged among teachers of Universal Basic Education I (UBE) in all states of the Nation.
2. Professional and research organizations such as the Science Teachers' Association of Nigeria (STAN), National Teachers' Institute (NTI) and The Nigerian Educational and Research Development Council (NERDC) that carryout seminars, workshops and conferences should incorporate themes / topics on graphics in their basic science education re-training programs for teachers at the Public Primary School level.
3. The Federal and State Ministry of Education should sponsor Basic Education teachers for refresher training on design, selection, and utilization of graphic instructional media.

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