RELEVANCE OF PIAGET'S THEORY OF COGNITIVE DEVELOPMENT IN THE SELECTION OF INSTRUCTIONAL MATERIALS FOR SOCIAL STUDIES' BASIC 1-9 TEACHING-LEARNING PROCESSES

BY

ADELEKAN, A. T. (Ph.D),
Department of Social Studies and Civic Education,
Adeyemi Federal University of Education, Ondo.
&
OLATUNJI, R.A,
rufusadeleye2@gmail.com,
Department of Social Studies and Civic Education,
Adeyemi Federal University of Education, Ondo.

Abstract
The aim of teaching is to communicate the content of instruction for learning to take place. Achieving this requires competence in the process of exposing the learner to the content. In this enterprise, the method of teaching and the materials to aid learning work together to determine how well the objective of teaching is realized. Therefore, this paper examines the relevance of Piaget's theory of cognitive development for selection of instructional materials for the teaching and learning of Social Studies. Textual analysis of the qualitative method research was used in explaining the relevance of the theory in Social studies teaching-learning processes. From this study, it was realized that the materials required to properly aid learning differ from one level of age to another. Also, it was impressed that at all these age-differential learning, the learner should be allowed to interact with materials that can aid learning as individuals and in groups and so on. Consequently, the paper recommends that teachers should provide materials that would involve students in rich experiences at their level of development because to do this is more likely to provide a better foundation for later stages of cognitive growth.Social Studies teachers should take every opportunity to select materials that can be used to point out similarities, equivalents, opposites, relationships and other group structures if they want their pupils to acquire the art of generalization and skills in handling concepts in increasing complexity.

Keywords: Social Studies,instructional material, cognitive development, teaching, learning, teacher.

Introduction

A lot of theories of learning had been propounded towards achieving effective learning or interaction between the learner and the content to be learnt.Jean Piaget's theory of cognitive development has been one of these that have significantly influenced educational practices in this respect. The theoryposits that children progress through distinct stages of cognitive development provides valuable insights into how learners understand and interact with the world around them. In the realm of Social Studies where concepts often involve complex social dynamics, historical context, ethical considerations, applying Piaget's theory can enhance the selection of instructional materials.Instruction has to do with two concepts of teaching and learning, and the most important link between the two concepts is the teacher. The professional job a teacher is expected to be committed to, is teaching to facilitate learning. Akinpelu (1998) identifies five criteria for defining teaching. These are; a person doing the teaching consciously and deliberately (teacher); a person who is being taught (learner);Knowledge to be imparted (content); the teacher must at least intend that learning should take place (objective) and the teacher must involve methods or procedures that are morally and pedagogically sound or acceptable (communication).

It is apparent that the fifth criterion is the most subsuming. It practically included consideration for all other criteria in order to arrive at and choose relevant, suitable, adequate and appropriate communication skills. It determines the effectiveness of the teacher's organization and presentation of instruction; the mastery of the content by the learner and how well the objective had been achieved.Communication in teaching has two parts: methodology and instructional materials or media. It is only in theoretical studies that the two are separated, in practice they are

inseparable as they must be woven together to facilitate effective communication in teaching. However, we shall focus our attention on the instructional materials in Social Studies.

From the explanations above one should be able to understand the crucial roles the teacher is professionally expected to play in learning. He requires adequate knowledge about the learner, what the pupil is to learn and how it could be learnt based on the peculiar knowledge about the learner. Adequate consideration for all these is required for effective learning. A lot of theories of learning had been propounded towards achieving effective learning or interaction between the learner and the content to be learnt.

It should be noted that in teaching, the teacher is important as well as instructional materials. Selecting appropriate instructional material to teach Social Studies at the Basic Education levels is as important as the learners themselves. It has been observed that Social Studies teachers has always been finding it difficult to select appropriate instructional materials that could aid learning among the Social Studies learners from Basic 1-9 considering the differences in their ages. Specifically, some teachers would select materials that are beyond the comprehension of the learners while some are confused on what level of basic Education should a particular material be used. In this paper, attempt would be made to examine how Piaget's theory of cognitive development could be used to select appropriate instructional materials for social studies learning.

Conceptual Review

Teaching is a deliberate, intentional, purposeful and partnership activity involving the teacher and the students in the act of sharing the meaning of a word or a concept and the experiences in relating concepts with one another to arrive at generalizations. In the view of Chiemela, et al, (2022), teaching is fundamentally an intentional act aimed at facilitating learning. It involves setting clear educational goals and objectives that guide the instructional process. This intentionality is crucial for effective teaching, as it helps educators focus their efforts on desired learning outcomes. In teaching, the teacher gives his pupils the subject matter to examine. In doing this, he supports effort with a great deal of media. This means teaching requires adequate concern for learner and special concern for the subject matter. In the modern sense, teaching is to cause the child to learn and acquire the desired knowledge, skills, attitudes and also desirable ways of living in the society.

Modern teaching practices emphasize a learner-centred approach, which encourages students to take an active role in their education. According to Darling-Hammond et al. (2020), teaching requires educators to adapt their methods to cater for diverse learning styles and cultural contexts. Furthermore, the integration of technology in teaching has become increasingly significant, as highlighted by Mishra and Koehler's (2021) Technological Pedagogical Content Knowledge (TPACK) framework, which underscores the importance of blending technology, pedagogy, and subject knowledge effectively.Effective communication then lies in the selection and use of appropriate and adequate teaching materials to stimulate, guide, direct and encourage learning. Therefore, communication stands in-between effective teaching and learning.

Concept of Learning

Learning is the process of acquiring or receiving new habits, skills, attitudes and knowledge. Also, learning can be referred to as a relatively permanent change in behaviour. These related views about learning suggest that the stages before and after learning can be identified. One can also infer from the views that behaviour that is acquired primarily as a result of practice or training is said to be learned,(Byrne as cited in Adeleyin (2007).But, the behaviour being referred to is the intellectual, psychomotor, or affective type. For instance, they claim that when a young pupil without any reading, writing or computing abilities eventually develops these skills through the help of his teacher, he has learned. Two concepts in the description are very important to note: behavioural change and learning experience(s).

The behavioural change is the specific outcome, reaction or difference the pupils is expected to exhibit as evidence that he has achieved objectives of learning. Learning experience is a situation which is designed to create an opportunity for interaction between the learner and his environment with the main purpose of facilitating learning in a definite direction. It is created to make pupils learn a content. Consequently, behavioural change is the difference expected in the actions of pupils after going through a learning experience. The passage of a pupil through learning experiences shows that learning is a

process. Therefore, one could safely conclude that there is no learning without experience

One could realize from the foregoing that a teacher does five things within a learning experience. He sets objective(s) for the experience, he builds the new experience on pupils previous experience, background or knowledge. He uses appropriate method(s) to teach content, he applies appropriate instructional materials to teach the content and, he evaluates the learning experience based on objective(s) set, previous experience(s) chosen, methods and materials used. In this he communicates to the learner.

A purposeful reflection on these would bring out a firm result and resolve that learning and learning materials have a lot in common toward a successful teaching and learning as well as with assimilation and found their equilibrium to be adaptation (Koleoso, 2004). In essence to them instructional materials should help give insight to the learner. In order words, these should aid the intuitive ability of the learner to be able to infer, generalize or come to certain conclusions.

Though the various field-type learning theory such as social learning theory by Albert Bandura, Constructivist theory by Lev Vygotsky, Experiential learning theory by David Kolb have been much influenced by Gestalt psychology which sought to explain wide range of human learning situations, the cognitive development theory propounded by Jean Piaget became more popular. We are therefore going to look at what this cognitive theory has to do with learning materials.

Piaget's Theory of Cognitive Development and Its Implication for Instructional Materials' Selection for Social Studies.

Piaget, in Ansorge, Gatta, &Gopal (2024) identifies four stages of cognitive development. They are:-

1. Sensory motor stage (Birth – 2years);
2. Preoperational stage (2-7years);
3. Concrete operational stage (7-11years) and
4. Formal operational stage (11-15years).

The Sensory Motor Stage

This is a period of discriminating and labeling. It is described as stimulus bound because the child mainly interacts to stimuli from without. He moves about to try to discover his environment to perceive whether the objects he sees are real. He performs this perceptual behaviour by touching and tasting (sensing objects). This means that though all the five senses are at work the child at this period glaringly and outwardly uses three of these namely hand, mouth and eyes to perceive and discover (Kajogbola 2004).

The child at this stage is attracted easily to new stimulus and so cuts short response to a present stimulus. All the experiences are being automatically stored or programmed in his brain but does not make meaning to him. That is why at the early part of this stage he may continue to sense an object that provides unpleasant experience because he could not discriminate or imagine objects. Therefore, dangerous objects should be kept out of the reach of the child. The implication is that for operators of Day Care centres and pre-nursery education, bright and colourful learning kits are best used for children at this period than for a teacher to be teaching them. The work of the teacher would just be to verbalize the name of the real object whose image the child is holding at a particular time to him. The child will grow to associate the name of each material to it and as he starts trying calling the names of objects, he matures to acquiring language.

The Preoperational Stage

The pre-operational child differs from the sensory-motor infant by being able to internalize actions. In a sense, he thinks of moving an object before he moves it. When the child internalizes actions, he no longer operates just on stimuli from the environment, although his mental images or representations are limited to what he has experienced. The child at this stage cannot do classification, i.e; he cannot see differences between goats, dogs, cats, birds, tree etc. He has one general name or concept for every class of objects i.e rice, beans, books, pencils, biro is not different. By implication, children at this stage (typically ages 2–7, according to Piaget's theory of cognitive development) learn best through hands-on activities, visual aids, and symbolic play. They are beginning to develop memory and imagination but are not yet capable of logical thinking. Social Studies topic such as Objects at Home and in the School can be taught using Instructional materials that are engaging, interactive, and suited to their developmental level of thechildren at this stage Instructional materials such as manipulative and concrete objects (Building blocks, counting beads or abacus, Shape sorters), visual aids (Picture books, Flashcards, Charts and posters) will enhance the cognitive development of the child.

The Concrete Operational Stage

This is the period of slowly developing ability to perform all of the logical and infra-logical operations listed previously. Manifestation of this cognitive potential is a major objective of elementary instruction. Concrete operational thought is mainly limited to thinking about things and objects rather than concerned with performing abstract reasoning, such as propositional or hypothetical deductive thinking that characterizes the formal stage. That is, he could say concrete things about objects. He could see or perceive the different forms an object can take but he could not do independent reasoning on an object which has no connection with a stimulus from the object but rather with relationships of ideas within or about a concept or relationships between an object and another or a concept and another.

Being able to classify objects or ideas is basic to intellectual thought. Developmental classification skills are paramount to ordering and easily locating information in the mind. In the Social Studies classroom, topic such as Effects of environment on Man, Arms of government, Government structures, etc can be taught by engaging in a debate about the activities of man and their effects on the environment, creating diagrams or flowcharts to explain systems e.g., government structures, etc. Once a child has established the characteristics of a class in his mind, he brings the information with him and interacts in more sophisticated ways with his environment.

As an outcome of the concrete operational stage, the child conceptually organizes his environment into cognitive structures-ideas (Koleoso, 2004). Because he can do this, each new encounter with nature does not require extensive examination but can be classified according to properties, structure, and function, allowing for much more efficient responses. He can go beyond individual things and think of groups. Since the concrete operation person can do reversible thinking, he is able, later in the stage, to classify and organize in ascending as well as descending manner. The ability to form classes and groups and relate their characteristics to individual members enables a child to expand his mental activity greatly (Koleoso, 2004).

Developmental Classification as with other operational abilities follows a definite progression as outlined below:-

	Progression of Developmental Classification	Age
1.	Grouping by a single characteristic perceptually apparent e.g groups by colour.	3-4years
2.	Grouping by abstracting common property e.g he sees sticks and notes some are long; he then goes around collecting only long ones.	3-4years
3.	Multiple classifications can classify by more than one property, e.g colour, size, shape.	4-5years
4.	Grouping by realizing all objects are the same in some respects but different in others, e.g fingers all grasp but vary in shape.	4-5years
5.	Class inclusion forms subclasses and includes major classes e.g a bird has feathers (class); some are white and some black (subclass).	6-10years
6.	Ascending hierarchy e.g cat is a mammal.	7-10years
7.	Descending hierarchy e.g mammals include cats.	9-10years
8.	Establishes multiple criteria for a relatively complex classification system. Defines characteristics for supra-ordinate and subordinate classes e.g supra-ordinate group mammals-have hair, nurse their young etc; subordinate class humans stand erect, have opposable thumbs.	11-14years

Source: Carin and Sund (1975 P.26).

Most elementary school curriculum projects in Social Studies teaching – learning processes should therefore include varied classification activities as materials should be selected for these so as to provide experience necessary for the development of this type of operational thinking. The concrete operational child's understanding increases significantly over the previous period. He now has some notions of geographical space town, city, state, and nations ofhistorical time such as Egyptians, Romans, Washington, and Napoleon etc. At this time simple colourful pictures can be selected to illustrate spatial phenomena.

The Formal Operational Stage

This stage is stimulus free. The child does not need external stimulus to activate his thinking processes. In this sense he is liberated from immediate environment in directing his behaviour. As a result, he is the source of many of his own ideas, making him to particularly expands his skillful enterprise. Therefore, materials from which he would be expected to generate own ideas, formulate more than one hypothesis, raise questions, understand a situation in a complex way should be selected. Examples ofsuch materials forteaching Social Studies at this stage include case study and simulations that shows real world scenarios; debates and discussions on social issues, historical events and ethical dilemmas; research project that can presents findings through reports, presentations, that fosters independent learning and analytical skills. The materials should be capable of giving him ability of thinking back over a series of mental operations, reflecting on them.

The formal operational student thinks in terms of many possibilities rather than being limited to the facts before him. He can think of ideals as opposed to realities, and he is capable of understanding probability theory. So materials selected should aim at tasking his brain and from which he could deduce more information.It is therefore important that materials selected at this stage carry unbiased and balanced information to avoid misleading the student. For topics that require this kind of operation, materials that could provide great deal of information and appeal to more than one sense should be selected.

Conclusion

Piaget's theory of cognitive development is not the only theory in the area, for example Bruner's stage theory of cognitive development also made interesting contribution to ideas on the course of intellectual development which links many of the ideas of Piaget. It is observed therefore that Piaget's theory appears to be most popular and the work on which others' including that of Bruner built. Therefore others' work could be viewed as a supplement to what Piaget had done. In essence, the contribution of Piaget's theory of cognitive development to considerations for the selection of instructional materials could not be negated by others' contributions rather they would serve to lend credence to it the more.

Teaching itself is painting a picture, giving impressions, introducing impulses (or stimuli), exposing, making bare, seeing, helping to connect, reinforcing past experience, leading to discover, helping to imitate, helping to transfer knowledge, helping to associate, leading to insight and so on. On the whole, teaching is communicating, learning is to know through discovery, examining, connecting, associating or imitating. When pupils have access to materials in ways that could strengthen their ability to carry out these processes of learning, actual learning is maximized. If knowledge is learnt better through senses, then teaching should afford the learner opportunity for sensing appropriately the material meant to aid learning. This is capable of eliciting or engineering correct responses (knowledge, attitudes or skills) from the learner.

The Social Studies teacher must develop competence in the usage of activity methods with appropriately selected instructional materials to facilitate effective learning of the realities inherent the concepts being taught. When this is done the teacher would be assisting the learners to appreciate not only in knowledge but also in psychomotor/ manipulative and attitudinal skills for positive individual and group endeavours:

Recommendations

Taking into cognizance that Social Studies is about acquiring new habits, skills, attitudes and knowledge and teaching it should facilitate learning, the use of activity methods must be a priority for the teacher. And in facilitating learning effectively, teaching requires the use of aids called instructional materials which are used to develop abilities in different operations at various development stages, we therefore make the following recommendations for Social Studies teachers:

1. Teachers should provide materials that would involve students in rich experiences at their level of development because to do this is more likely to provide a better foundation for later stages of cognitive growth.
2. Activity method should be adopted, especially at the primary school level.Emphases should be laid on the importance of children manipulating objects with widely differing properties of texture, colour and shape. This together with discovery, collection, classification, construction and analysis of materials are essential for the natural development of cognitive skills such as perceptions, conception, memory, language, reasoning and creativity.
3. Teachers must master the logical models or structures of concrete and formal operations. This is important if we are to understand the relevant elements of content, functions and quality of our pupils' thinking and therefore take decision on the instructional materials that would be appropriate to help them in the process of learning.
4. Teachers should take every opportunity to select materials that can be used to point out similarities, equivalents, opposites, relationships and other group structures if they want their pupils to acquire the art of generalization and skills in handling concepts in increasing complexity.
5. Piaget stresses the educational significance of learning in a social context. Therefore selecting materials for group discussion of a common problem, provided pupils have some experience or factual knowledge of the topic, is invaluable in development of formal reasoning and logical argument.
6. Materials to be selected should help to appreciate alternative points of view and testing hypothesis developed in a social context through discussion, debate and argument with peers and adult or teacher. It is better if this social context created in the classroom is democratic.

References

Adeleyin, I. O. (2006). *The use of Instructional Materials by Social Studies Teachers in Secondary Schools* in Oredo Local Government Area of Edo State. *Nigerian Journal of Social Studies,* Vol IX (I), 126.

Akinpelu, J. A. (1998): *An Introduction to Philosophy of Education*: MacMillan Education Ltd.

Ansorge, R., Gatta, F., Gopal, A, (2024). Piaget Stages of Development. Chidren Health Guide. Retrieved from https://www.webmd.com /children/ piaget-stages-of development february 26, 2025

Chiemala, V.A; Ebube, C. A; Ugo, P.O; & Irish, M. (2022). Systematic Review and Annotated Bibliography on Teaching in Higher Education Academies (HEAs) via Group Learning to Adapt with COVID-19. *Journal of Education Science, 12 (10), 9*.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for Educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97-140.

Idowu,B. & Ogunbodede, E. (2006). Information and Communication Technology in Nigeria. *Journal of Information Technology Impact.*3,(2). 69-76.

Kajogbola, D. O. (2004): *The Impact of Information Technology on the Nigerian Economy ATPS Working Paper Series* No 39: ATPS Communication Department.

Koleoso, A. (2004): *Introduction to Teaching Profession*. Alex Publishers.

Mishra, P., & Koehler, M. J. (2021). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Records*.