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BLOOMS MASTERY LEARNING THEORY: IMPLICATIONS ON ADULT EDUCATION

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Abstract

The study discussed Bloom's mastery learning theory and its implications on adult education. The paper noted that adult learners have peculiar characteristics which educators have to take care of while facilitating their learning. This, they have to do in order to enable adult learners achieve mastery of the subject matter. It discussed the procedures of the Bloom's mastery learning theory which is based on the premise that learners can learn when provided with conditions appropriate to their situation. The relationship between achievement, time, self concept and motivation as discussed by Bloom were related to the characteristics of adult learners. Bloom's learning theory encourages continuous learning and training, lifelong education, education for all and therefore is recommended for adult education.

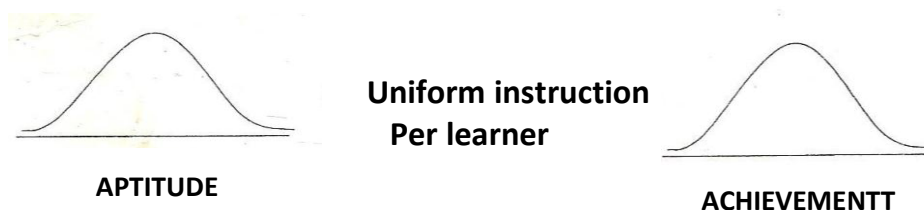
Introduction

The term adult education is used to designate all activities with an educational purpose directed at solving the current needs of individual and communities. As defined by Fadeyi and Folaranmu (2002) adult education can be used to designate that form of education which can be planned and applied for the remedial and continuing learning of adults outside the regular and formal educational system. It also implies the education on part-time basis given to adult of all educational backgrounds who are already working but seek intellectual development. Adult education activities are addressed to all people in the society no matter their level of education and achievement. It advocates life-long education which emphasizes continual training and retraining of an individual throughout life. The National policy on education (2004) classified adult and non-formal education together to cover literacy, post literacy, continuing, civic, correspondence and self improvement classes outside the formal school system. UNSECO (1976) defined adult education as the process by which men and women (alone, in groups or in institutional setting) seek to improve themselves or their society by increasing their skills, their knowledge or their sensitiveness, any process by which individuals, groups or institutions try to help men and women improve in these days. Okedara (1981) classified adult education into three modes namely formal, non-formal and informal. According to him, formal education usually have the characteristics of the formal education system and leads its recipients to obtain a certificate, non-formal adult education covers training and

instruction outside the formal education system and may be organized in the form of individualized apprenticeship, vocational training or as nationwide mass literacy campaign, informal education may come unintentionally and accidentally through face to face groups, the media and through serendipity. Adult education is a multi-faceted discipline from which an adult learner can gain a profession or shift from one profession to the other. It is the word 'adult' in the concept that rightly necessitates a different methodology for facilitating adult learning. This discussion is particularly concerned with enhancing the learning of learners in formal adult education using the Bloom's mastery learning theory.

Bloom's Mastery Learning Approach

Mastery learning is an instructional method that presumes all learners can learn if they are provided with the appropriate learning conditions. Specifically, mastery learning is a method whereby students are not advanced to a subsequent learning objective until they demonstrate proficiency with the current one (Mastery learning, 2009). Benjamin Bloom's Mastery learning was derived from John B. Carrol's model of school learning in 1963. Bloom transformed this model into an effective working model for mastery learning. Bloom in 1968 argued that if students were normally distributed with respect to aptitude for a subject and if they were provided uniform instruction in terms of quality and learning time, achievement at completion of the subject would be normally distributed. This can be illustrated as shown below:



He explained further that if students were normally distributed on aptitude but each learner received optimal quality of instruction and the learning time he required then a majority of students could be expected to attain mastery. There would be little or no relationship between aptitude and achievement. Bloom's idea is based on the fact that if each learner receives optimal quality of instruction and learning time required, majority of students will attain mastery. This situation can be represented as follows:

Bloom (1968) pointed out that centrality of group instruction is effective for some learners but ineffective for others. For example, instruction provided to a group of twenty to seventy learners is likely to be very effective for some learners and relatively ineffective for other learners. According to Bloom (1971) this aspect of teaching and learning is likely to be replete with errors which are compounded overtime and unless there are ways of identifying and correcting the flaws in both the teaching and learning, the education system is likely to produce individual differences in learning which continue and are exaggerated over time. Bloom further emphasized that much individual differences in learning may be regarded as man-made and accidental rather than as fixed in the individual at the time of conception.

Feedback which is provided with formative test and appropriate correctives as they are needed provides a self correcting system with errors corrected before they are compounded. To Bloom (1971) learning characteristics such as good-poor, fast-slow are alterable by appropriate learning conditions. He explained further that a situation whereby an educator expects a third of learners to learn well that is taught, a third to learn less well and a third to fail or just 'get by' is quite wasteful and destructive, reduces teachers aspirations and learners desire for continuing learning and systematically destroys the ego and self concept of a sizable proportion of learners. Block (1971) noted that the key to the success of mastery learning strategy largely lies in the extent to which learners are motivated and helped to correct their difficulties at the appropriate time in the learning process.

Mastery Learning Procedure

The procedures for mastery learning as designed by Bloom (1968) are as follows:

1. Break the course or subject into smaller units, such as a chapter in a textbook, a well defined segment of content which may involve one to two weeks of learning activity. The units should range from specific terms or facts to more complex and abstract ideas such as concepts and principles to more complex processes such as application of principles and analysis of theoretical statements. Such elements are considered as forming hierarchy of learning tasks. It is very necessary that students have mastery of unit one before moving to unit two.
2. Determine unit objectives and mastery level i.e. the optimal learning level expected for the learners before they will move to the next unit.
3. Construct formative test for each unit to determine which of the units tasks the students has mastered or not mastered. At this level students are informed that the tests are used to determine their mastery of a particular unit and are not graded.
4. The formative test is determined and scored using items like mastery and non mastery. Use of grade is avoided to remove tension and anxiety on the learners. For students who have thoroughly mastered the unit, the formative test reinforces their learning and assures them that their learning approach and study

habits are adequate. The formative test also reduces anxiety about end of course achievement for learners who consistently demonstrate unit mastery. For the learners who lack mastery of the unit, the formative test reveals the particular areas of difficulty and the ideas, skills and processes still needed to work on. The formative test also provides feedback to the teacher, because they can be used to identify particular points in the instruction that need modification. It can also serve as quality control in future cycles of the course, the students performances on each test may be compared with the norms for previous years to ensure that they are doing as well or better.

5. Use corrective learning procedure for learning difficulties discovered after the administration of formative test. The correctives are designed to reinvolve the learners in learning the course unit in ways that differ from the original group-based instruction. This makes it possible to adapt instructional methods and materials to the need of all learners, improves interest, motivation, attitude, perception and shifts the entire achievement distribution upwards. Some of the corrective learning procedures include small group study session, tutorials, rereading particular pages of the original instructional materials, studying specific pages or workbooks or programmed materials, use of flash cards, reteaching etc. The learners learn which correctives that work best for them and their later learning becomes more efficient. The extra time spent pays dividend on later learning
6. After using the necessary corrective learning procedures, the formative test is readministered on the learners to determine the effect of the procedures on them. If the majorities have attained mastery, the class moves to the next unit.

Implications of Mastery Learning Approach on Adult Education

The Bloom's mastery learning theory has far reaching implications on adult education. According to Bloom (1968) mastery learning is an instructional method that presumes that all individuals can learn if they are provided with appropriate learning conditions. To Bloom, given a supportive instructional system, 95 percent of all learners can learn and achieve lesson objectives at near the same mastery level, the responsibility of the educator is to plan remedial instruction and include their use in classroom situation before proceeding to the next unit. According to Rogers (1969) and Maslow (1970) every individual has great potential to learn and if given a supportive environment an individual can develop and grow to a fully functioning person. Akinpelu (2002) is of the view that an adult educator must be optimistic and believe strongly that change is possible to any person. This agrees with the philosophy of adult education which has profound belief in the essential educability of man. Adult education holds positive view about human potential and the power of national intelligence to direct human affairs.

An adult learner has peculiar characteristics which makes him different from other learners. He combines the characteristics of adult and those of a learner at the same

time. It is necessary to understand these characteristics of an adult before his learning is facilitated. It was lack of this understanding that perhaps brought the notion 'you cannot teach old dogs new tricks' it is now generally agreed that old dogs can be taught new tricks provided the educator provides adequate learning conditions and uses the right instructional methodology in facilitating adult learning.

Adult learners have characteristics which distinguishes them from younger ones. Most of their characteristics come as a result of ageing. Studies (Ajiduah, 1998; Jegede 2003; Kaulser, 1982; Oyedeji, 1988; Lovel, 1980) have shown that adults find it difficult than younger persons to store incoming information and organize it efficiently in order to retrieve it later. Studies by these authors also show that as one grows older, changes occur in the brain, heart, sensory organs, body appearance, cells, bones, muscles, skin and other parts of the body. These causes a slow- down in learning process. As a result, an adult learns better when working at his own speed, intellectual capacity has not declined significantly to prevent learning but reaction time has changed which may slow down his rate of learning. According to Ajiduah (1998) the slow reaction time in the adult due to his degenerating neuromuscular system and his diminishing muscular strength no doubt forces him to be a bit more careful and of course slow to react to issues. This seemingly slowness of the adult learner is as a result of psychological changes. In spite of the ageing process in the adult learner, the cognitive, affective and psychomotor aims of education can be achieved. To Akinpelu (2002) it is quite wrong to believe that an adult cannot learn because of physiological constraints. Bloom's view of facilitating learning rests on 'Take your time' that is, take the time you need to learn something well (Mastery Learning, 2009). This essentially agrees with the nature and characteristics of an adult learner who is a slow learner. Using mastery learning approach time to learn is adjusted to fit aptitude. No learner is to proceed to a new material until basic prerequisite material is mastered (Block, 1971). Time spent in learning is a critical variable in mastery learning.

In any learning situation, a learner is affected by his aptitudes, which include verbal ability, memory ability and spatial ability, his ability to understand instruction and quality of instruction he receives (Ajiduah, 1988). No two adult learners are the same, firstly, because of individual differences in human persons and secondly because of varied experiences and circumstances which each of the learner has passed through (Jegede, 2003). It takes individual learners different time to learn a task. In addition, adults have different social roles, development tasks and social status which take much of the time they require for learning. Bloom (1976) argued that many individual differences in school learning are man-made and accidental rather than fixed in the individual at the time of conception. To him, individual differences in learning can be overcome by allowing each learner adequate time and using good quality instruction. His major argument is that what any person in the world can learn, almost all persons can learn, if provided with appropriate conditions of learning. Adult learners because of their peculiar

characteristics require adequate learning time, good quality instruction, and good management of learning situations so that each learner can gain mastery of the subject matter. To Bloom, the basic task in education is to find strategies which will take individual differences into consideration but which will do so in such a way as to promote the fullest development of an individual learner.

Adult learners care so much for their self concept and image. This to a great extent determines the level of motivation and participation in their learning (Ibeh, 1988). Adults usually learn more effectively in a non-competitive atmosphere. Competition raises anxiety levels (Rossmann, Fisk and Roehl 1984). Andragogy (special methods of achieving adult learning) rather than pedagogy (the conventional methods of teaching) is being favoured in many adult learning situations. Bloom's learning approach encourages co-operation in learning rather than competition which is in line with the philosophy of adult education. According to Akinpelu (2002:5) the teaching-learning relationship cannot be one of authoritarian or of superior teacher and inferior learner. In Bloom's mastery theory, formative test is administered at the completion of each learning unit. Formative tests play a key role by reinforcing the learning of high achievers, detecting the errors of low achievers and indicating the type of corrective prescription needed to improve learning. They are not meant to judge learners but to inform them on whether they have mastered the unit and what they still need to learn. Those that finally attained mastery are reinforced while others are given corrective measures in order to improve. Bloom (1971) pointed out that centrality of group instruction in schools is effective for some learners but ineffective for others but feedback which is provided with formative test and appropriate correctives as they are needed provides a self correcting system with errors rectified before they are compounded. Successful and rewarding learning in adults encourages continuing learning, but if learning is frustrating, little can be done to kindle a genuine interest in further learning (Khan, 1969). Such frustrating experiences reduce individual chances of economic survival and security in the world of work and jeopardize his psychological well being. This is because a person inability to meet academic requirements tends to cause the development of a negative self concept. Furthermore to some learners, the repeated frustration, humiliation and despair experienced by their inability to meet these academic requirements may cause mental health problems (Bower, 1962).

According to Bloom (1971), mastery learning suggests procedure whereby a learner's instruction can be so managed in a group based classroom instruction so as to enhance his fullest development. This as a result generates positive interest and attitude towards the subject learned than usual classroom methods. Adult education on its own is development oriented. It is expected to help an individual develop himself and be useful to the society in which he lives. It is a means of individual and societal development, be it social, economic, political or any other type one can

imagine (Ifehigh, 1973). Programmes for adult learners are made in a way that it suits their needs, interest and aspirations.

In order to motivate participation, mastery learning makes it possible to achieve all details in the objectives, adapt instructional method and materials to the need and characteristics of all learners, works to improve interest, motivation, attitude and perception, shifts the entire achievement distribution upwards, get learners immunized against mental illness, creates opportunities for fullest and future development and encourages confidence in continuous learning and training. This is in line with the philosophy of adult education which is development oriented, emphasizes life-long education i.e. education from cradle to grave and continuing education throughout life.

Recommendations

Facilitators of adult learning should endeavour to provide for each learners adequate learning time in relationship to his ability. Adult learners should be allowed to work at their own speed, good quality instruction and good management of learning situation is very necessary for adults so that each learner can gain mastery of the subject matter. They should be allowed to take the time they need in learning so that they can learn better, because of their individual differences, physiological changes and social roles.

Adult educators should endeavour to use non-graded formative evaluation which forms part of teaching-learning process in adult learning. This is because it is non-graded and eliminates competition. It encourages cooperation, provides continuous feedback and helps to diagnose weakness of individual learners. This, as a result enhances interest and fullest development of adult learners.

Adult educators should use corrective learning strategies in facilitating adult learning. Learning strategies such as small group study session, tutorials, rereading workshops and programmed materials should be used to enhance and motivate learning in adult years in order to avoid compounding their learning difficulties. This will help generate positive interest and attitude towards subjects learned and also interest in further learning.

Adults learn better when learning condition is made adequate for them. Good learning and cool environment should be made available by the governmental, non-governmental and private agencies that provide education for adults. Adequate library facilities and teaching aids, good sitting arrangement, ventilation and illumination should be arranged in such a way that adult learners are motivated and optimal learning achieved.

Facilitators of adult learning should teach from simple tasks to the more complex tasks. The course content should be broken into smaller units from abstract

terms to more specific facts and ideas. Relating their life experiences to learning also promote concrete and optimal learning.

Conclusion

Mastery learning offers a very meaningful approach to learning which can provide about 95 percent of learners with successful learning experiences. Adult learners can learn irrespective of their physiological constraints. Mastery learning approach is a powerful approach which can be used to educate adult learners, enhance their chances of individual and economic survival, immunize them against mental illness and creates opportunity for their fullest and future development. Successful learning experiences can be provided for adult learners by adopting the ideas in the Bloom's mastery learning theory. For a meaningful and positive change to be achieved, Bloom's learning theory is quite useful.

References

- Ajiduah, A.O. (1998). Physiological ageing. In L. Oyedeji (Ed.) *Coping With learning in adult years*. 19-33. Lagos: Joja
- Akinpelu, J.A (2002). *Philosophy and adult education*. Ibadan: Stirling-Horden
- Block, J. (1971). *Mastery learning: Theory and practice*. New York: Holt Rineheart and Winston
- Bloom .B.S. (1968). *Learning for mastery: Evaluation comment*, 1 (2),1-5
- Bloom .B.S. (1971). *Mastery Learning*: New York: Holt Rineheart and Winston
- Bower, E.M. (1962): *Mental health in education: Review of educational research* 32, pp. 441-454
- Fadeyi, T.O. & Folaranmu, O.O. (2002). *Adult education, the core of the Department*. In M. Omole & A. Sarumi (Eds). *50 years of adult education at Ibadan 10-20*. Ibadan: University Press.
- Federal Republic of Nigeria (2004). *National policy on education* (4th ed). Lagos: NERDC Press.

- Ibeh, A.E. (1988). Adult perception. In L. Oyedeji (Ed). Coping with learning in adult years. 109-124. Lagos: Joja Press
- Ifebigh, I. (1973). Opening address: Proceeding of the 2nd annual conference of the Nigerian national conference for adult education.
- Jegede, .S. (2003). The adult learner a psychological analysis. Lagos: University press.
- Kaulser, D.H. (1983). Memory for activities adult age difference and intentionality: Development psychology 19 19) 889-894.
- Khan, S.B. (1969). Affective correlates of academic achievement: Journal of Educational Psychology. 60. 216-221
- Lovell, R.B. (1980). Adult learning. New York: John Willey
- Maslow, A.H. (1970). Motivation and personality. New York: Harper and Row
- Mastery Learning retrieved April 15, 2009 from [http://en.wikipedia.org/wiki/mastery learning](http://en.wikipedia.org/wiki/mastery_learning).
- Okedara, J.T. (1981). Terminologies and concepts in Adult education in L. Bown& .J. Okedara (eds), An introduction to the study of adult education Ibadan: University Press.
- Oyedeji, L. (1988). Intellectual capacities and ageing. In L. Oyedeji (ed) Coping with learning in adult years (pp. 40-60)
- Robinson, M. (1992). Mastery learning in public schools: Some areas of restructuring education. 114 (1), 121-126
- Rogers, C.R. (1969). Freedom to learn. Ohio: Charles Merrill
- Scriven, M. (1967). The methodology of evaluation: AERA monograph series in curriculum evaluation (1) 39-83.
- UNESCO, (1976). UNESCO recommendations on the development of adult education. The general conference of UNESCO held in Nairobi.

