



Constructivist Approach: Best Cognitive Tool For Late Bloomers in Learning Multiplication

Mrs.D.Packiam,

Research Scholar, Lecturer,DIET,T.Kallupatti.

Dr.M.Parimala
Fathima

Asst.Prof,Alagappa Univeristy college of Education,Karaikudi.

ABSTRACT

This article discusses the effect of methodology used in the teaching and learning process of late bloomers in the classroom. In this study are including identified ten late blooming children in III STD,PUPS,Madurai,TamilNadu with help of the class teacher. Aiming at using a constructivist approach in the teaching and learning of multiplication in the III STD, the class teacher agreed to cooperate with the investigator. Investigator well plans the learning activities, the class teacher to observe systematically their children and to reflect on the outcomes. This way of research doing in the class III enabled them to 'act' effectively in designing an action plan appropriate to children' achievement level. This research was carried out in the period of three weeks incorporating several different constructivist activities. Findings of this study showed that all the late blooming children have substantial development of doing multiplication problem through constructivist approach

KEYWORDS

Multiplication; Constructivist approach, Cognitive Tool,late bloomers

Introduction

Late Bloomer" is commonly used to refer to young children who develop skills such as language, reading, or social interaction later than others of their age. There are many theories of the way in which children develop, proposed by authorities such as Urie Bronfenbrener, Jerome Bruner, Erik Erikson , Jerome Kagan, Lawrence Kohlberg ,Jean Piaget, and Lev Vygotsky. Although they disagree about how stages of development should be defined, and about the primary influences on development, they agree that a child's development can be measured as a predictable series of advances in physical, intellectual and social skills which almost always occur in the same sequence, although the rate may vary from one child to another.

When a child falls behind their peers at some stage of development, their teacher may perceive that the child is "backward". There is strong evidence that this perception may become self-fulfilling: although the child catches up, the teacher may continue to rate their performance poorly, imposing a long-term handicap. Thomas Edison's mind often wandered and his teacher was overheard calling him "addled." This ended Edison's three months of official schooling. His mother then home schooled him. Edison may have had some form of Attention-deficit hyperactivity disorder (ADHD), which the American Psychiatric Institute says affects about 3 – 5% of children.

The main reason for children become late bloomer is the transaction method used by the teacher. This action research pointed out that few late bloomers of standard III were not able to understand the concept of multiplication. The investigators thought that constructivist approach is a suitable cognitive tool for enhancing the achievement of late bloomers.

Constructivist learning is a Process which goes through Several Stages

Stage I:(Performance is assisted by a more capable other): The first stage is where the child is directly assisted by a more capable adult or peer .In this stage, the adult is working with the child and helping her discover what she knows and how it can be related to the problem that she has to solve. As is obvious, providing assistance does not mean telling the child what to do, but assistance is only in helping her to analyze the problem. She would discover the solution herself with the abilities she has developed. Little hints and questions at this stage are helpful to the child in understanding the prob-

lem, and subsequently finding a solution for it.

Stage II: (Performance is assisted by the self): In the second stage, the child begins to assist herself in the same way that the adult did earlier. If she is given a problem similar to one she has done with the help of an adult earlier, she will try and do it herself. The adult only needs to point out the similarities with the earlier problem. She may go through roughly the same steps while solving it, except that these may be worded differently. This time round she would ask herself the questions that the adult would have asked her in Stage I, and try to answer them also. In this stage, children are assisting themselves to find the solution to the problems.

Stage III: (Performance becomes automatic): This stage is reached when the child no longer needs help from outside to do the task and does not need to repeatedly stop and think about the next step. We may say that the child knows how to solve the problem. She cannot solve all problems like the ones she is exposed to in stage II.

Stage IV :(This process can be used over and over again for other activities): Once the child has mastered a certain kind of thinking and competence and reached the potential of development in one area, other areas begin to open up. For instance, her ability to understand multiplication as repeated addition and use of multiplication tables helps her to discover new patterns between numbers. She can now start to deal with factors of a number. . This stage can be described as the stage where the learning becomes a step and a support for the child to be used as a building block for more difficult problems. This whole process, where adults provide a support for the child to help them solve problems and build their understanding, is also known as "scaffolding". As the child becomes more independent and confident about the problems, the adult gradually alters the extent and nature of the support.

Role of Teacher in Constructivist Classroom

A constructivist teacher (Brooks & Brooks, 1999) is not a depository of 'all knowledge' nor does s/he try to get pupils to give the 'right knowledge', or 'correct answer'. S/he rather, tries to get pupils to give their 'point of view and understandings' so that s/he can understand their learning in turn.

Instead of presenting information to pupils, s/he prepares

learning environments where they can discover and construct knowledge. A constructivist teacher is also reactive, adaptive and a task provider (Muijs & Reynolds, 2005: 85). S/he reacts to learners' responses and ideas and thereby allowing a lesson to go in a different direction from that originally planned. In the process, a teacher explores a good idea or questions which a learner gives. A teacher is too adaptive who takes into account the pupils' academic ability and learning style. S/he acknowledges individual differences in learning and believes that no two pupils construct precisely the same meaning even when presented with identical objects or events, and thereby brings variations in his/her teaching. Teacher is not a task or project designer for pupils; s/he rather provides them opportunities and gives choices and options (pupils' say) in what tasks, projects or assignments they are doing. S/he works with them to design task or project that will facilitate their learning.

Hypothesis

"Constructivist approach" will enhance the achievement of Late Bloomers of III STD in learning three digit multiplications.

Planning for Intervention

After scrutinizing and analyzing the pre test scripts, the investigator confirmed again where the children lack in. They were very poor in doing multiplication problem. This was evident from the pre test scores. The Investigators decided to give an intervention through the excellent cognitive tool as constructivist approach. Intervention was give three weeks in this study.

Methodology

A single group pre-test /post –test experimental design was used in the study. Identified ten late bloomers of III STD in Panchayat Union Primary School in Madurai District , Tamil Nadu were taken as the sample for the study.

Tool

Two achievement papers in addition and multiplication ,one for per-test and other for post - test were used to measure the achievements level of the late bloomers in multiplication which test questionnaires were prepared by the investigator. The content area was restricted to the addition and multiplication from semester textbook, prescribed by the Government of Tamil Nadu for Standard III. Test papers are consisted the type such as Fill in, Matching and life oriented. Maximum mark of the test is 60.

Statistical techniques used

The collected data were analysed by using percentage analysis.

Model Activity

Skip counting arouses the children to learn multiplication in simplest constructive way. The late blooming children are taken to ground and then called one of the children to jump two steps at a time as she did. In the same approach, the student jumped five times and then the investigator asked to stop. How many steps when he started and how many times he jumped? The student answer "two steps and five jump, totally I jumped steps. Investigator explained "five times two is equal to ten or five multiplied by 2 is equal to ten. This game is done by all the children in the play ground.

Findings

Pre-test and Post –test questionnaire were analysed by using percentage Analysis.

Table – 1

Difference between pre and post - test percentage

Student	Pre-test	pre test %	Post-test	Post test %	Gain from Pre and Post test %
Student A	21	35	40	66.66	31.66
Student B	24	40	55	91.66	51.66
Student C	29	48.33	49	81.66	33.33

Student D	28	46.66	53	88.33	41.67
Student E	22	36.66	51	85	48.34
Student F	20	33.33	45	75	41.67
Student G	22	36.66	44	73.33	36.67
Student H	19	31.66	49	81.66	50
Student I	22	36.66	55	91.66	55
Student J	25	41.66	58	96.66	55

From the table: 1 inferred that all the late blooming children showed substantial development of doing multiplication problem through constructivist approach. Gain score percentages of achievement have considerably increased after the treatment given through constructivist approach for Late Blooming Children.

Conclusion

As a result of this study, the Investigators will be planned to continue the same constructivist approach with her future researches also. Investigators strongly believed that the teaching through "Constructivist approach" contributes a lot of improvement in the achievement of late blooming children. The children who were dull and lacked interest to do multiplication are now happily doing the multiplication easily. This finding will be helpful for the teachers to practice the constructivist approach for the better performance of the children in mathematics in the primary level. During the intervention the investigator did not meet any difficulties to facilitate the children to learn multiplication. At the completion stage, the late blooming children were able to understand and do the classroom interaction in multiplication.

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