

Learning Disability of High School Children in Mathematics (VII to XII)

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Abstract: *This case study is focused on learning difficulties in mathematics. It will also focus on developing strategies for improving mathematics learning. Basically there are two types of learning difficulties Learned helplessness and Defensive attribution. The case will provide specific emphasis on these two difficulties by illustrating the case of a student.*

Keywords: Mathematical learning difficulties, learning attribution, learning method.

Introduction:

Much research has been carried out in “Learning difficulties”. However, most of the research focused on discussion of psychology of learning, which lacks a connection to concrete content in mathematics.

Conceptual framework:

In daily teaching practice, various factors attribute to good performance in the learning mathematics process, which includes students working hard, applying effective skills and being good at mathematical thinking.

However, many reasons could cause students to have learning difficulties in mathematics.

There are different types of learning difficulties in mathematics in high schools. Therefore, it is necessary to apply strategies to improve their learning.

Learned Helplessness: (L. H.):

Learned helplessness is the expectation, based on experience that one’s actions will ultimately lead to failure.

It is an internal factor and relates to student confidence. Sometimes, L.H. is also related to external factors. For ex. Sometime student lack help of learning mathematics. They failed in mathematics because rarely getting help in their learning process. If they achieved academic success on certain maths exams, they thought it was their (instability factors) luck otherwise, failures are based on some uncontrollable factors, such as :

1. Knowledge of maths foundations.
2. Loss of interest in the subject.
3. Lack of ability or low ability in mathematics learning.

Their self confidence can be enhanced through guiding them to improve learning skills and correct negative attribution.

Defensive attribution:

Some students are with “defensive attribution” with mathematical learning difficulties.

1. They do not study hard.
2. Not taking the initiative
3. Losing interest
4. Always complaining

For ex. They complain that mathematics is boring, mathematics material is not good enough and teachers are not good, they do not teach well. They never try to find problem in themselves. Students with repeated failures may develop a defensive attribution to protect themselves from negative feedback.

Methods of helping students with L. D.:

Four helpful general principles for supporting students with a tendency to accept failure.

1. Understand the student’s strengths and use these to develop their confidence. (Accentuate the +ve).
2. Deal with students weakness actually (Talk to them and develop on plan to improve learning).

3. Create challenges in which student actively create problem and solve them using their own knowledge and skills.

This case study focused on investigating 2 types of students learning style. Some aspects of the transforming process and developing some strategies, that can be used in helping struggling students.

The following questions were asked what are the factors that caused:

- a) Learned helplessness
- b) Defensive attribution
- c) What strategies can be adapted to help these 2 types students.

Method:

This study chose 2 high school students who suffered different learning mathematics as key cases.

Case Study method:

It is an appropriate choice of research method for studying the changing process.

The descriptive narrative method is used to answer research questions. Triangulation is applied through the use of multiple data sources.

1. Interview the student
2. Analyze the students exams
3. Talk with parents.

Learned helplessness:

The student having difficulties learning mathematics results from the lack of help from others.

Back Ground:

Research subject: Tejas, a high school student in a city of Mumbai.

Research Period: January 2013 to January 2014

Students demographic:

The student's mother is an employee in a city college and his father is an employee in private firm (Both holding Ph.d degree)

Learning characteristics:

Tejas is an introverted character, he is reserved and very few friends. When I met him, he was very tense, rarely smiled. Tejas's mother believed that he was a nice boy, listened to his parents, and studied hard. He used to study early morning from the time he went to high school. He did well in some subject except mathematics. Due to his learning character, father gave him pressure, mother hoped that author would be able to help him and teach him effective learning skills in order to make him more relaxed in learning. Mother was looking forward to the author to be able to understand his particular situation and continue to be patient with Tejas.

Diagnostic Assessment:

On conversation with the subject, whether he likes mathematics?

Subject answered " I only learn mathematics because of teacher's requirements". He says further "as he has to take exams, so he has to do well as he understood it was not easy for his mother, and he also felt guilty for his poor performance.

After the author contacted the candidate he realized he felt stressed and was indeed a sensible boy.

Analysis of Reasons for Tejas Performance:

Tejas always dependent on remembering some results and concrete methods to solve problems and ignoring comprehensions of mathematics concepts, and being less focus for solving problem. When changing topics, he would not be able to deal with it, even he did it right, he always doubted it. He personally felt that his weak foundation in mathematics led to his failure. Author started to developed some strategies to change his learning based on this particular learners character.

Intervention:

- Praise at proper time and enhance the student's confidence.
- Encourage developing problem solving skills.

- Provide guidance to identify reasons beyond personal factors.

Result:

He made great progress during the term the study was done. He got 75% on his terminal examination. The author asked him to talk about his experience of improvement, he was able to relate clearly, and he likes mathematics now and learned how to enhanced his mathematics learn it. The author continue to encourage him to apply effective learning skills which includes structure of the topic, RE DOING PROBLEMS WITH MISTAKES, exchanging ideas with his friends, regularly reviewing the content and focusing on the connection between mathematics concepts.