Patterns–Tool for Learning

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Abstract—Teaching and learning are closely connected to oneanother. It could be said that through the process of Teaching, a teacher is also learning constantly. There is consistent research that a teacher needs to entail, if one needs to assure good results out of the teaching and learning process. There are various kinds of activities that are needed to be designed to make the teaching process full of learning and being able to achieve the desired results.

What are the attributes that refer to a good teaching and learning process?

In this paper I wish to illustrate how patterns could be used as an essential tool both by teachers and students and enhancing the learning process.

As per Bloom's taxonomy to be able to remember is the first stage of the learning process. Remembering is considered as the first step of acquiring knowledge. Hence, the prime purpose of teaching is to facilitate knowledge.

Creating of patterns could be considered as a crucial learning point.

If a teacher can create patterns for the learning process, it would be viable for the student to then remember the information processed.

So, what all efforts could a teacher do to have an enhanced learning process?

Using patterns are a great way of helping the students to enhance the learning process. These patterns could not only help to familiarize with the first stage of the learning process but also these patters could be further used to synthesize information and create logical analogies.

Being a teacher could be challenging as there are various structures and modules that are needed to be created to facilitate the learning process. These modules could refer to the classroom activities as a part of the syllabus or the enrichment activities. Classroom activities form the traditional part of the teaching process. These activities could be in the form of deeper understanding of the syllabus, prevalent requirements for examinations and following guidelines as per the different education boards. However, the real question is whether all these procedures and timeframes within the education curriculum- are they sufficient for successful learning.

There is no consistent proof of learning apart from the marks and the grades. There are often cases of students doing well in the first semester or first year but as they proceed to the higher levels, there is fall in their scores. What are the possible ways that retention of knowledge could be obtained?

Memory is a crucial indicator of how much a learner has retained the information. The enrichment activities are thus those activities which are designed to facilitate different forms of learning. These are also be in the form of extra-curricular training. In most schools these activities are limited to learning of arts and sports. What really is needed is the difference in the approach of seeing the learning process. Apart from these activities, there should be number of activities that should be included in order to enhance the learning process.

One such activity should be pattern recognition. In a simple way to illustrate pattern recognition is being able to create analogies and the ability to use logic. These patterns are often used by students in order to make notes. A simple exercise is done by abbreviating a letter or a code to every piece of information.

Table 1.1

All cats are mammals. A Some mammals are vegetarian. S Some cats are vegetarians. S

In the above table 1.1, it is shown how a student can mark each sentence with the first letter with which the sentence begins. This is a very basic exercise which is also used by students to make notes during examinations. This helps in remembering large chunk of information.

An experiment was conducted by a Cambridge neuroscientist, Daniel Bor in the year... to illustrate the power of chunking and pattern recognition. According to Bor, human beings can use their mental mechanism in order to expand the capacity of working memory. Anundergraduate volunteer with an average IQ and memory capacity took part in an experiment where the researchers read him a sequence of random digits, and he was asked to read them back in the order he'd heard. If he was correct, one digit was added and if incorrect, one digit was reduced. This experiment was conducted over two years. By the end of the two years, the undergraduate student was able to say back a sequence of 80 digits.

The question arises what strategies did the student adopt in order to improve the retention skills by such high degree.

The undergraduate student was a track runner, let's suppose when given a digit of 3492, he converted it into 3 minutes 49.2 seconds which is close number to world-record for running a mile. Another strategy that he used for creating superstructures of running times. This helped in remembering large number of digits.

Hence, it could be seen that creating patterns helps in increasing the retention powers.

Superstructures could also be related to the next stage of memory power that is be creating analogies and using advanced logic.

In the table above, it should be noted how the first sentence uses the subject All, the second sentence uses the subject -some and the third sentence is actually a derivative of the first two sentences. The third sentence is considered a conclusion and therefore uses some as the subject as it needs to include a subject that could be within the framework of the two sentences(premises) and in order to create a relationship between the predicate or objects –mammals and vegetarian. This also forms the basis of logic and analogies in mathematics and philosophy. Logic is also used for computer data processing.

Another way of understanding is-

If, Sentence 1 is A

Sentence 2 is C

Then, Sentence 3 will be E

These superstructures forms the basis of aptitude and mental ability skills in many research and higher level exams.

Many scientists have contested that the creating patterns for remembering the information, might reduce the ability for synthesis of information. With the help of superstructures, this objection against patterns could be nullified.

Thus, patterns not only help in increasing the retention powers but also enable in increasing the aptitude and research skills.

Hence, pattern recognition is an effective learning tool and must be recognized for higher development of mental powers.

Therefore, Patterns are an effective form enhancing the learning process.

References

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