

Attention Span and Refocus Time in MCQ for Elementary School's Students

Ajay Kumar Singh

Joint Director (SSA), SCERT, Lucknow, Uttar Pradesh, India.

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ABSTRACT

Performance of students in MCQ examination depends on the attention span of students. Students' understanding on test item depends on their focus time. Small attention span means students will attempt fewer item of test tools as they will face problem in understanding them. It has been found that attention of students is best at the start of the MCQ test and minimum towards the last items of the test tool. It has been found that there are refocus peaks in regular interval, where students regain their focus during MCQ test. It has been also found that pattern of attention span and refocus time doesn't depend on difficulty level of test tool.

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Introduction

Attention span, as measured by sustained attention, or the time spent continuously on a task, varies with age. Older children are capable of longer periods of attention in a task than younger ones. Attention span is the time a teacher is more likely to maintain the child's attention and limit inappropriate behavior during this period effectively. Estimates for the length of human attention span are highly variable and depend on the precise definition of attention being asked for. Researchers talk about two kinds of attentions: transient attention and sustained attention.

Transient attention is a short-term response to a stimulus that temporarily attracts/distracts attention. Most of the researchers disagree on the exact amount of human transient attention span; some say it may be as short as 8 seconds.

Selective sustained attention, also known as focused attention, is the level of attention that produces the consistent results on a task over time. Some state that the average human attention span is approximately 5 minutes, others state that most healthy teenagers and adults are unable to sustain attention on one thing for more than about 20 minutes at a time, although they can choose repeatedly to re-focus on the same thing. This ability to renew attention permits people to "pay attention" to things that last for more than a few minutes, such as long films. When trying to estimate realistically how much time a child can focus on one activity, you can use the following formula (source unknown):

Attention span for learning = chronological age + 1 (For example, an eight-year-old child (8+1=9) would have a nine-minute attention span for a learning activity)

Significance of the study

This information can be quite useful when the teachers are planning their teaching learning process i.e. classroom activities, assessment activity, co-curricular activity, sports activity based on the student's age and type of evaluation.

Teachers may introduce refocus exercises and activities in their comprehensive teaching learning process to maximize students' attention span and maximize learning achievements.

Data and Method

Attention span of students of class 5 aged 10 to 11 year and students of class 8 aged 13-14 year was tested on multiple type of questions, how much time they are able to focus and how they refocus on multiple choice question. Criterion of attention is drawn from their willingness to attempt the questions on the basis of understanding test items.

Research Design

The research design followed in the study is descriptive (survey) and evaluative. In this research the focus of the study is to test certain hypotheses regarding attention span of students, based on their willingness to attempt test items. The descriptive survey method has been adopted primarily due to the fact that it

Sample

Sample has been taken carefully, so that results obtained from study of sample may be faithfully applied to the whole population. Following things are considered while selecting the sample.

- There should be no partiality while selecting the sample.
- All major sub group of population should be sufficiently represented.
- It should be manageable for completion of study.

Sampling is a process used in statistical analysis in which a predetermined number of observations are taken from a larger population. Thus in the sampling technique instead of studying every unit of the universe, we study a sample drawn on some basis from the entire universe. In this study researcher has used stratified and purposive sampling. The sample should be a representative of entire population to get a representative sample, it should be ensured whether all elements are equally represented or not.

For the selection of sample the criterion followed was easy access to data, convenience in conducting survey. Data was collected from all 75 districts of Uttar Pradesh, India. 1500-1700 students of class 5 and 8 were administered test tools. Approximately fifty percent students were administered set one and fifty percent were administered set two of test tools in both the classes V and VIII.

Tools used for the study

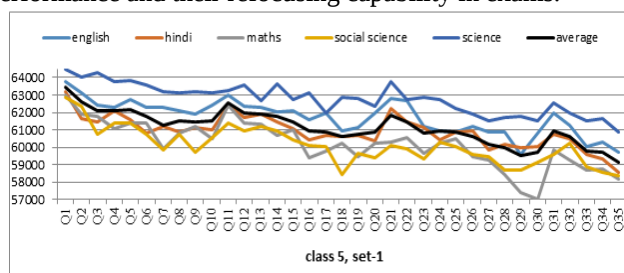
MCQ based assessment tools were developed for class V and VIII based on curriculum and syllabus. Assessment tools for class V and VIII students were developed in subjects Hindi, English, Mathematics, Science and Social Science. Two set of tools for class V and VIII were developed with the same test items by randomizing their orders. Class V test tools of every subjects had 35 test items and class VIII test tools of every subjects had 40 test items.

Results and Discussion

Student's Attention Pattern for different Questions

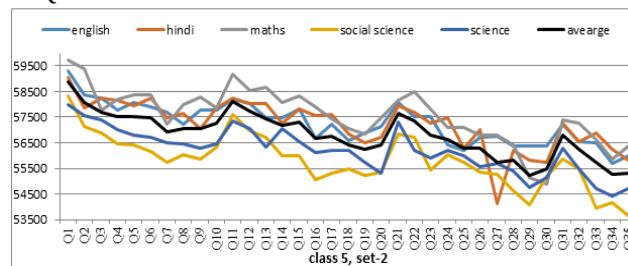
In this study two set of test tools were used for five subject i.e. Hindi, English, Mathematics, Science and Social Science in class 5 and 8. Subject wise tools were randomly marked as set-1 or set-2. Every subject tool for class 5 had 35 test items whereas subject wise tool for class 8 students had 40 test items. While designing study, test tools were designed in such a way that 90 percent students may finish their test in 50-55 minute, students were given 60 min to complete the test. In every district and school these tools of different sets/subjects were administered almost equally in both the classes. Questions were not arranged in any pattern in subject wise test tools of class 5 and 8 and were almost random. Question wise analysis of data shows that there is a pattern in student's attempting questions. To demonstrate pattern a graph has been plotted between 'numbers of students attempted question' and 'question serial number'.

For class 5 and set-1 graph shows that different subjects and questions have been attempted differently. Attention span and refocus time varies for different subjects and question pattern. As it clear from diagram below that every subject have its own attempted pattern. Graph also depicts that maximum number of students have attempted early questions (say 1, 2, 3...) then there is a decreasing trend to the last question. This decrease in attempt is not smooth, it decreases and then spurge to a level and then starts decreasing again. It happens in different interval in different subject. Average attempt shows that down fall is not uniform but has a pattern, it decreases and gives peaks near questions, say Q11, Q21, and Q31. These points are refocus points for majority of students, means attention of students have dropped well before these points for majority of students. This pattern indicates something about student's attention length or performance and their refocusing capability in exams.

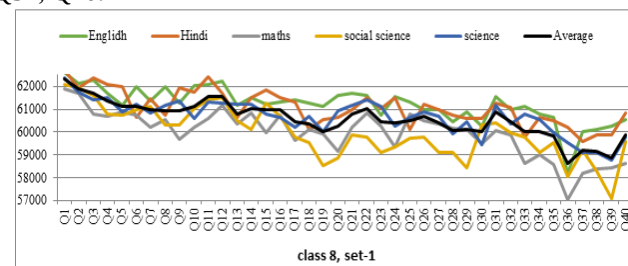


For class 5 and set-2 graph shows that maximum number of students have attempted early questions (say 1, 2, 3...) then there is a decreasing trend to last question. Average attempt shows that down fall is not uniform but has a pattern,

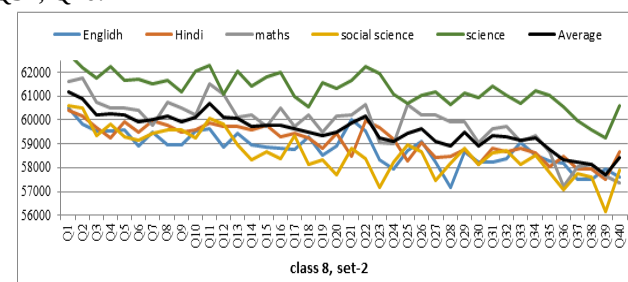
it decreases and gives peaks near questions, say Q11, Q21, and Q31.



For class 8 and set-1 graph shows that maximum number of students have attempted early questions (say 1, 2, 3...) then there is a decreasing trend to last question. Average attempt shows that down fall is not uniform but has a pattern, it decreases and gives peaks near questions, say Q12, Q22, Q31, Q40.



For class 8 and set-2 graph shows that maximum number of students have attempted early questions (say 1, 2, 3...) then there is a decreasing trend to last question. Average attempt shows that down fall is not uniform but has a pattern, it decreases and gives peaks near questions, say Q11, Q22, Q31, Q40.



This shows that students feel tired as they proceed from question number 1 to last. Social science happen to be the less attempted subject by students, though average achievement in social science is not minimum. It indicate that in social science either student know the answer or don't know, so probability of attempting the question is less, while in subject like Maths, science, Hindi they may answer the question based on their personal experience or day-to-day knowledge or previous class learning. Though there is a definite pattern in attempting questions, difference between maximum attempted and minimum attempted varies from 5-9 percent for different subjects and class.

Attention of students or willingness of students to attempt question is very high at the start of the test. It start decreasing in process of attempting further questions. This decrease in attempting questions in not uniform, it increases after a gap of some questions and produce a pattern of decrease and upsurge.

Conclusions and Recommendations

The overall study elucidates the issue of attention span of students. Its findings, recommendations and suggestions may further research in the area. Following are major findings of the study.

- Attention span of class V students is less than class VIII students, means it increases with age.
- Attention of students is best at the start of the MCQ test.
- Attention of students is at its lowest at the end of test.
- Students refocus on test items at regular interval during the test.
- Decay in attention is approximately 5-10 percent in different subjects.

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