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Assessing Science Education at Secondary Level in Bangladesh

Md. Anowarul Arif Khan [1]
Md. Shefatul Islam [2]
Firoz Ahmed [3]
Jinia Alam [4]
Md. Ashraful Islam [5]

Abstract

This paper reflects the findings of a baseline survey conducted to assess the present situation of science education at secondary level. The percentage of science students in secondary and intermediate level has been decreasing. This study tends to find out the reasons behind these negative trends and identify the solution for students to become more interested in science subjects like General Science, Biology, Chemistry, Physics and Information and Communication Technology (ICT). Following quantitative research method, the study was conducted on secondary and intermediate level students. The study revealed that the students didn't like traditional mechanism and equipment. About 64% of the respondents, all of whom were primary and secondary level students, were using internet and most of them through mobile phone. They were hooked up themselves in a techno-buzz environment where media, internet, videography, mobile phone had lots of influence in their daily life. Findings revealed that students found Biology (18%) most interesting, some other students liked chemistry (17%) and Physics (16%) as well among the subjects of science education. Students preferred practical examples (16%) in their learning process. Both students and teachers agreed about more interactive educational content creation that could help students and teachers for understanding topics by themselves and also significantly reducing the cost of education by not going to private tuitions.

Introduction

Science education is considered as a must for the secondary level students of Bangladesh. The necessity of educating young boys and girls with science education is high as it is a turning point of their education life which expects to light up their learning process with numerous blessings of science education. As science education helps to understand the world around, develop skills of planning and conducting investigations, gathering information, team work etc. So it expects to bring revolution

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in students' life especially for secondary level students. However, the rate of learning science education is decreasing among the secondary level students in Bangladesh. In rural areas, students are mostly disinterested in learning science. Some unfavorable conditions are playing vital role in this case. To understand the present situation of learning science education by the country's secondary level students, a baseline study has been conducted.

1.1 Objectives of the Study

The main objective of this baseline survey was to assess the present situation of science education at secondary level. Specific objectives were:

1. To explore difficulties regarding teaching and studying science related subjects
2. To find out the opinions of students and teachers regarding the challenges faced by them.
3. To recommend some way forward for effective learning of science related subjects.

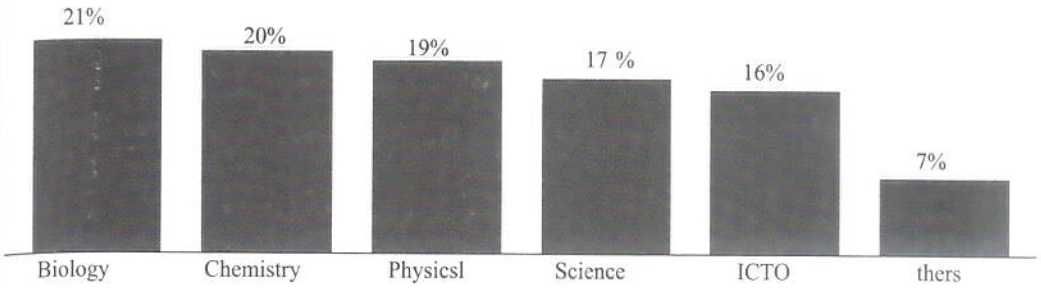
2.0 Methodology

This study was conducted using sample survey method where random sampling techniques were followed. The study areas of this survey were "Udayan Higher Secondary School", Dhaka and "Sonargoan G. R. Institution School & College" Sonargaon, Narayanganj. One school was selected from the urban area and another from the rural area. Both male and female students were selected as sample. For the purpose of getting diversified findings, 195 students, 13 teachers and 2 Headmasters were randomly selected from three classes. The classes were 8, 9 and 10 where from class 9 and 10 had three different groups such as Science, Commerce and Humanities. Data were collected by direct face to face interviews. Both quantitative and qualitative data were collected. After that data were processed and analyzed using statistical software SPSS.

3.0 Findings of the Study

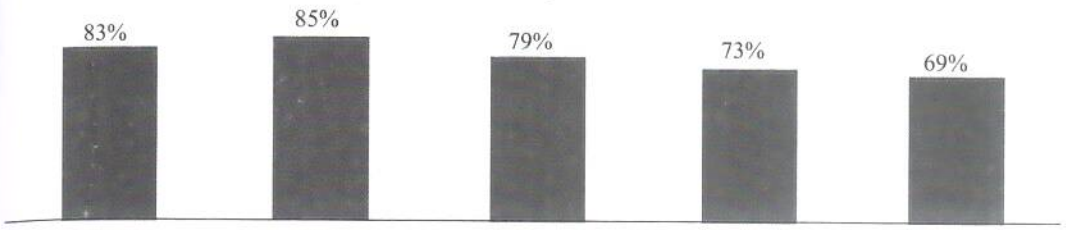
The findings gathered from this baseline study have been presented in a systematic and segmented manner in below section. Regarding favorite subjects of the students, about 21% of the students liked biology, 20% of the respondents liked chemistry and 19% of the respondents found interested in physics and 13% of the respondents of the study liked to study ICT at secondary level because students came to know about the basic information and knowledge about science through those subjects.

Fig. 1: Favorite subjects of the students



Multiple Responses

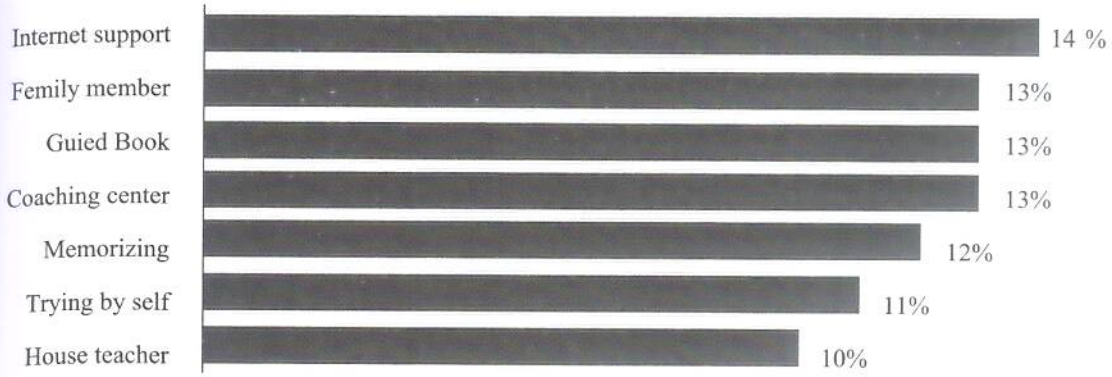
Fig. 2: Difficult subjects for students



Multiple Responses

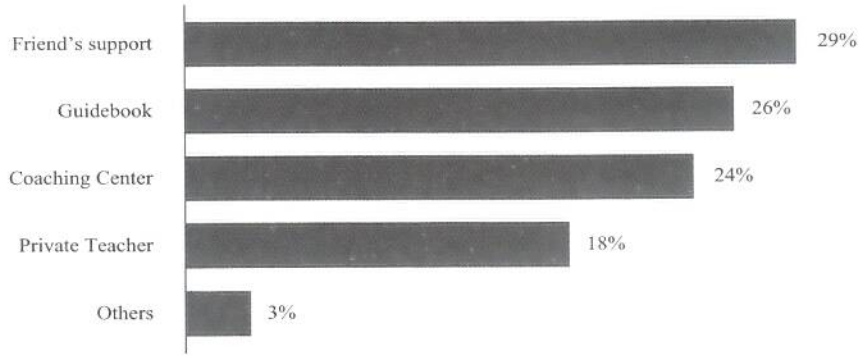
A staggering 85% students mentioned that ICT was difficult for them, 83% students mentioned general science as a difficult one and 69% students mentioned that chemistry was difficult for understanding due to several reasons including difficult to understand, lack of proper guidelines from school and study assistance.

Fig. 3: Student's approach to resolve the difficulties



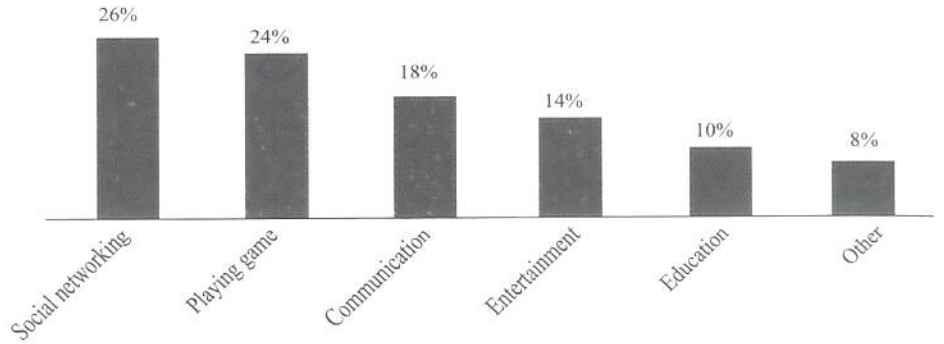
In terms of student's approach to resolve the difficulties, 14% students took the assistance through internet, 13% students tried to memorize the lessons those seemed difficult to them and 13% students took assistance from coaching center but only 11% students tried by themselves if they faced any difficulties.

Fig. 4: Study assistance source



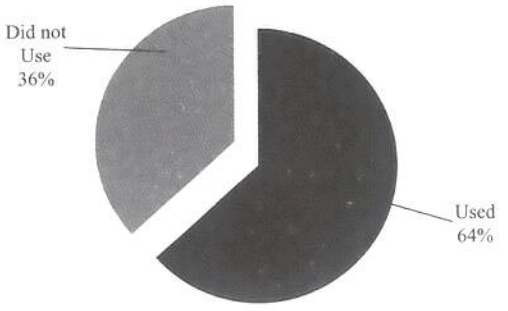
Here, most of the students found engaged with tutor particularly as a private, coaching, friend's support or others. About 18% students went to private tuition, 24% students went to coaching center, and many got supported by their friends (29%) while students faced difficulties to study the text book at secondary level.

Fig. 5: Purposes of mobile phone use



Graph 5 demonstrated that about 26% students used mobile phone for social networking purpose, 24% students used for playing game but only 8% students used the mobile phone for education purpose which was very few to compare with other purposes of internet use.

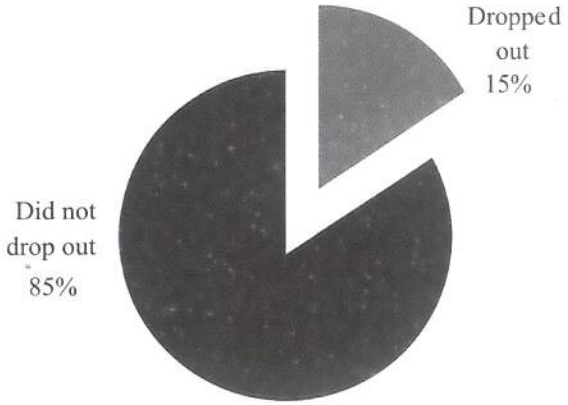
Fig. 6: Status of internet use of the students



Regarding using internet, about 64% students found to use internet for different purpose including social networking, education, communication, gaming and entertainment. On the other hand, about 36% students did not use the internet.

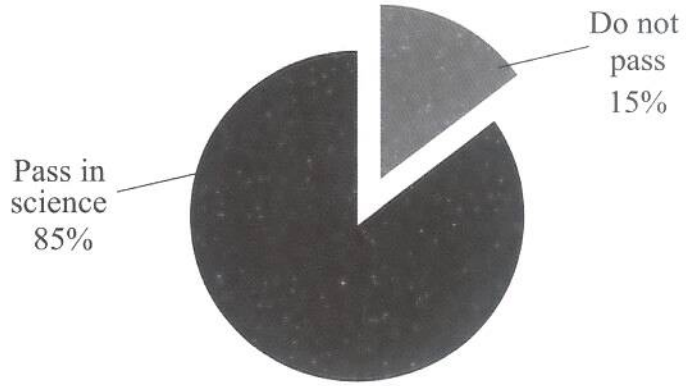
Teacher's opinion about current education process

Fig. 7: Students drop out rate (yearly)



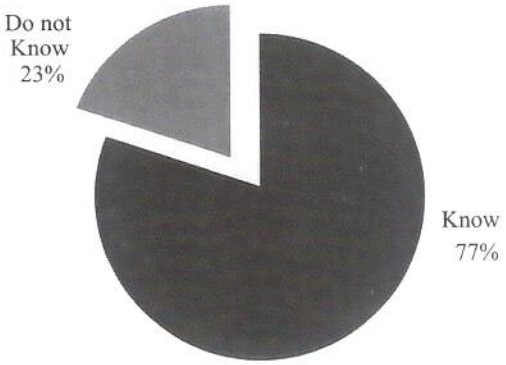
The Fig. 7 illustrated the status of student's yearly drop out percentage from the school. Drop out percentage rate was 15%. Rest of the respondents (85%) revealed about no drop out.

Fig. 8: Status of results on science subjects



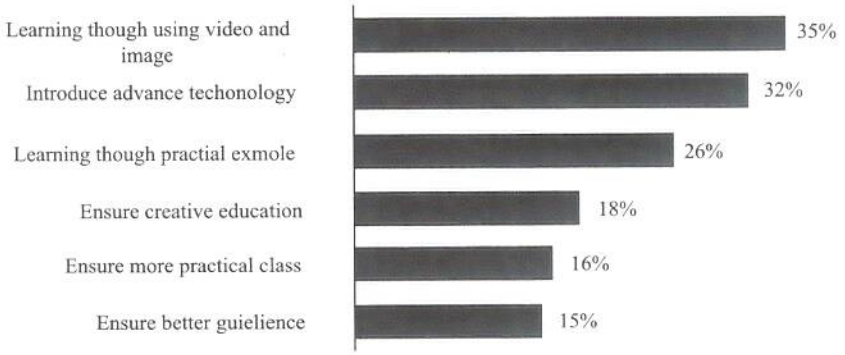
The above Fig. (8) shows that, 15% students failed in science related subject. Several reasons seemed to be responsible for this regard, like; of proper guidance and study assistance, lack of science materials at school, difficult to understand and memorizing. However, a significant percentage (85%) revealed that students did not fail in science related subjects at school level.

Fig. 9: Status of familiarity of teachers about Teachers Portal



About 77% teachers knew about teacher's portal only and few of them used the teacher's portal regularly but 23% teachers didn't know about it. Many of respondents both teachers and students were unconscious about the teacher's portal and its benefit or purpose for education system in Bangladesh.

Fig. 10: Recommendations to make the study interesting



Recommendations were drawn out to make the study interesting for students. About 35% students preferred learning through using video and image, 32% students suggested introducing advance technology and 18% students preferred creative education materials, 26% students preferred practical examples to make the study more interesting.

Discussions

Science education at secondary education level of Bangladesh is very much imperative as it gives basic knowledge of science to the students. However, the present stydy revealed that secondary students of the country found disinterested in learning science subjects due to various barriers such as lack of proper study guidelines, practical learning methods, tendency of memorizing without understanding etc. The students

also took assistance for learning science from private tuitions rather than schools. Findings also revealed that 12% students used a guidebook and 13% students relied on coaching center and 13% students relied on memorizing when faced a difficult topic. In this age of modern learning, society does not want the children to rely on these things. If students are not provided with necessary support and they continue to rely on these harmful ways, all the effort of making science education interesting will go in vein. Study also exhibited that only 10% students got advice from private tutors. Government needs a better service tool to cater the need for better understanding in difficult topics for students.

Conclusion

Science education at secondary level impacts the students' lives along with the nation to build up a technology-based atmosphere. However, Bangladesh is having an alarming situation in science education at secondary level. Crisis of trained and competent science teachers, prompting students to take private tuition, pushing up their educational expenses, lack of motivation for the guardian, higher expenses for science education etc. behind the negativities that have been faced by the students in learning science. Besides, irregular practical classes, comprehensive curriculum, students' tendency to take easy subjects to pass, among others, also contributed to this negative trend. Such drastic and decreasing rate of science education is alarming for the nation. The country has a huge population and to turn the population into efficient human resources, the concerned authority should consider and take required steps in order to promote science education from school level.

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