Byju’s The Learning App: An Investigative Study On The Transformation From Traditional Learning To Technology Based Personalized Learning

Sruthi P, Dr. Sangeeta Mukherjee

Abstract: Technology has drastically improved the existing educational system over the past fifteen years. ‘Self-learning,’ using online platforms, has replaced the traditional rote learning. The umbrella of technology-based educational system incorporates multitudes of learning apps. Byju’s - The Learning App (Byju’s) is India's largest educational app with over 3, 00,000 annual subscriptions. The learning app uses a blend of content, media and technology to make learning more interactive and interesting among the students. It also promotes personalized learning among the users. In this context, the current study seeks to explore a select group of high school and higher secondary students from CBSE and Kerala State Board and interpret their feedback to examine the transformation from traditional learning to technology-based personalized learning. This paper also demonstrates how Byju’s app facilitates and improves the teaching-learning experience among the students of Kerala.

Index Terms: Constructivism, Online Learning Platforms, Byju’s, Traditional Learning, Personalized Learning, M-Learning, Technology, Learning Apps.

1 INTRODUCTION

Learning styles have significantly changed over the years. Gone are those days when we memorized the concepts and put it down during exams. The current teaching-learning environment prefers personalized learning. The teacher is now a facilitator, a mentor and a guide. He/she is not just a content provider. The teacher constructs knowledge through interaction with the students. The students do all the work and the teacher guides them. This method of Constructivism was put forward by John Dewey (1859-1952), Bruner (1915-2016), Piaget (1896-1980) and Lev Vygotsky (1896-1934). “Constructivism is the philosophical and scientific position that knowledge arises through a process of active construction.” (Mascolo and Fischer, 2005, p. 49). The strategy of constructivism is against the Behaviourist theory propounded by Pavlov and Thorndike, which is based on the idea that learning happens through conditioning. The modern strategies of teaching and learning are highly rooted in Constructivism. The facilitators construct the knowledge through the active participation of learners. Learning is student-centred and the students are autonomous. Teachers promote critical thinking of the students. They guide their students to find solutions to a problem. The modern learning is highly technology oriented. Teachers make use of modern amenities like smart boards, projectors, audio-visual aids, and online sites for teaching. Teaching and learning materials are available at the click of a button. The internet, which is the largest network, has become a major tool for teaching-learning process. Multimedia resources, blogs, online forums, online libraries and various websites, provide information necessary for the user. Students all over the world make use of these modern technologies for learning. Majumdar opines, Teachers and students alike can make use of multimedia courseware which helps to promote affective learning that is more engaging and learner-centred. The students can relate their course of study to real life events and make use of individual learning styles that suit their needs. One of the most important aspects of multimedia courseware is that it encourages higher order thinking skills and helps for knowledge construction. (Majumdar, 2006) One of the latest trends in teaching is M-learning or Mobile-learning. “M-learning combines both mobile computing and e-learning, which includes online resources, rich interactive content, strong support for affective learning and performance-based assessment” (Quinn, 2001). As smartphones have become common among students, educators around the world have started using smart phones to impart learning. App based learning is one of the features of M-learning. A huge array of educational apps is available for the learners which help them in personalized learning. Learning through apps is self-paced and are optimized for the needs of each learner. Educational apps like Meritnation, SoloLearn, Coursera, Unacademy, Byjus: The Learning App, etc. are designed keeping the learner in mind. Byjus for instance is one of the biggest educational apps in the world. Once a startup, Byjus now caters to almost 300 million students in India. The app uses 3-D animation, motion graphics and visual effect technique to provide an immersive learning. Started by Byju Raveendran from Kerala, Byjus is now the most valued Edtech Company in the world. This paper aims at analyzing the effectiveness of Byju’s App on transforming Indian education scenario. It focuses on a group of high school and higher secondary students from CBSE and Kerala State Board and analyse their feedback to inspect how the App promotes personalized learning.

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2 HYPOTHESIS

These are the hypothesis formulated in the paper:

- How does M-Learning serve as a constructive learning technique?
- Indian students fully depend on traditional methods of learning.
- Indian students do not fully depend on traditional methods of learning.
- Byju’s App as a great impact on the students’ personalized learning experience.
- Byju’s App doesn’t have a great impact on the students’ personalized learning.

3 REVIEW OF LITERATURE

Numerous researches and studies have been conducted upon the effectiveness of various teaching-learning methods. Teaching-learning process has evolved drastically over the years. Modern teaching-learning process uses the strategy of Constructivism. Constructivism theorizes the fact that, learning is an individual activity. “In the Constructivist model, teacher does not behave as a sage on stage, but acts as a facilitator of learning,” (Singh and Sangeeta, 2015, p. 2). In the constructive learning process students do not sit idly remain as passive earners of knowledge but are active constructors of “knowledge through experience, observation, documentation, analysis and reflection,” (Singh and Sangeeta, 2015, p. 4). Constructivist teachers encourage students to constantly assess their understanding. Students in a constructivist classroom attain expertise in learning through the act of self-questioning and analyzing the strategies they undergo. (Bada and Steve, 2015). Shumaila Bhutto and Imran Umer Chhapra (2013) in the paper, "Educational Research on Constructivism - An Exploratory View," opines that teachers who are part of the constructive process “should receive appropriate training with awareness of overall progress and the quality and quantity of support and practical suggestions” (P. 23). The training the teachers undergo and the qualitative and quantitative assessments they make increase the validity of Constructive methodology.Constructive methodology of teaching and learning can be applied to the whole array of subjects. Dr. Sunila Singh and Sangeeta Yaduvanshi (2015) in the paper, “Constructivism in Science Classroom: Why and How,” propounded that “Constructivism is helpful in the learning of Science in true sense i.e., not only as a body of knowledge but also as a process for making sense of surroundings,” (P. 4).

4 SIGNIFICANCE OF THE STUDY

M-learning is growing at a rapid pace in India as more and more institutions, teachers and students use online platform for study. Indian teachers use both traditional and modern strategies for teaching. Blended-learning which uses both the conventional and modern strategies is gaining in popularity. The teachers of modern day are expected to have the technical know-how of using modern classroom technologies. Slowly but steadily, Indian classrooms are becoming smart. Students are trained in information technology right from the primary level. As internet and allied technologies are getting cheaper and more widespread, more students can lay their hands on m-learning. Byju’s is one of the most important players in Indian education system. They provide a host of services like aid for competitive exam preparation, school-level study materials, home learning program, etc. Byju’s, one of the most valued edtech companies in the world, has played a major role in transforming Indian education scenario. The company has raised investments from big players like Chan-
Zuckerberg Initiative, Tencent, Lightspeed Venture and Sofi. The company is expected to grow more as it now caters an international audience. The present study aims to provide authentic information for students, parents and educators about the various improvements that learning apps bring in the field of teaching-learning process. Byju's App, one among the M-Learning apps, helps studying difficult subjects by making concepts easily comprehensible. This paper helps others to investigate and get a clear picture of the possibility of Byju's App in enhancing personalized learning. The findings of the study will also be useful to understand how far Byju’s App transforms the traditional scenario of learning, by incorporating modern methods of self-learning techniques. Further, this acts as a reference point to other interested scholars to do more researches in this area.

5 RESEARCH DESIGN

This paper titled “Byju's - The Learning App: An Investigative Study on the Transformation from Traditional Learning to Technology Based Personalized Learning among High School and Higher Secondary Students” uses Quantitative Methodology of research to analyse data collected through questionnaires which were sent through Google Forms. The objectives of the study include:

- To identify how Byju’s app acts as a facilitator.
- To investigate the students’ transformation from traditional learning to technology based modern learning.
- To find out how far Byju’s app promotes learning.

The study has been conducted from the theoretical perspective of Constructivist Pedagogy, and its effectiveness in a technology assisted self-learning process, using Descriptive and Inferential methodology of analysis. The questionnaire comprised of 10 multiple choice questions in order to find the responses from random learners who are currently subscribed to Byju's app. Questions were asked in order to comprehend the effectiveness, easiness, comfort, interactivity, and personalized experience of using the app. Personal data of the respondents too were collected. The statistics was analyzed and computed into pie charts. The respondents answered to the multiple-choice questions and they chose their answers based on their individual perceptions.

6 DATA COLLECTION PROCESS

Data Collection in research can be defined as the process of collecting and measuring information in a systematic manner so as to answer research questions, test hypothesis and evaluate outcomes. For collecting data for this study, the researchers chose learners from class VIII to XII, of both CBSE and State Boards. Questionnaire has been distributed to learners from over 25 schools in 5 Districts of Kerala, namely, Kannur, Malappuram, Palakkad, Thrissur and Thiruvananthapuram; in order to find out how Byju's App transforms and influences their study behaviour. They have been given around two weeks to fill the questionnaire and return the same to the researchers. The learners who use the app actively participated in filling out the questionnaire. From the 115 respondents, 100 have been selected for the research paper. Others were omitted as data filled were incomplete.

Diagram 1. shows the number of students participated from Kannur, Malappuram, Palakkad, Thrissur and Thiruvananthapuram districts of Kerala. 50 students responded from Kannur, 34 from Malappuram, 8 from Palakkad, 6 from Thrissur and 2 from Thiruvananthapuram.

Chart 1. Shows the percentage of male and female student respondents. 52% learners were males and 48% were females. Chart 2. depicts the board of study of the learners. 58% of the total respondents were State Board (Kerala Syllabus) and 42% were from CBSE. From the CBSE Board, 8 males and 34 females responded and from the State Board, 40 males and 18 females responded.

7 FINDINGS AND DISCUSSIONS

The data was collected from the respondents and were collated for analysis based on statistical models. Statistical models help to provide an inference or a conclusion from a small population. Bar Diagrams, Pie Charts, Tables and Line Graphs were used to illustrate the data collected. After the effective representation of data, the researchers could analyse the data through Inferential Analysis and Descriptive Analysis. Inferential Data Analysis is a type of analysis that helps to test theories based on the samples collected from a group of
The respondents collected from the questionnaire given to the learners were thoroughly analysed based on Descriptive and Inferential Methods of research. The analysis of the study helped to draw certain inferences on the app. The particulars considered for this regard include, Penetration of the App among students, Scope, Attractiveness, Easiness, Subject Focus, Effectiveness, Personalized Learning, etc. Each particulars selected here were chosen based on the questionnaire distributed among the learners. Advertisement through Visual media like television, and New Media like the Internet helped the App to reach a wider audience. 74% of the learners heard about the app through advertisement. 70% of the learners use the App to understand concepts, 24% for exam preparation, 4% for doing homework and only 1% for doing revisions. From this, it can be understood that the learners give more importance to learning concepts rather than rote learning. 68% of the respondents found the App to be attractive and interesting in learning difficult subjects like Mathematics and Science. 60% of the learners use the app for 30 minutes to 1 hour. Only 14% use the app for more than an hour. From this data, it can be understood that the app is used only as a tool for learning concepts and not used during the entire study time. 72% of the students opined that the App helps them in exam preparation. 46% of the respondents claim that they use an educational app other than Byju’s. The table given below shows the findings of the study.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Particulars of the Study</th>
<th>Advertisements</th>
<th>School Orientation</th>
<th>Familiarity</th>
<th>Printed Media</th>
<th>Personalisation</th>
<th>Promotion of Learning</th>
<th>Effectiveness</th>
<th>Exams Facilitation</th>
<th>Other Learning Apps</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Orientation for Exams</td>
<td>Very-36%</td>
<td>Quite-36%</td>
<td>Not Very-20%</td>
<td>Not at All-8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Effectiveness</td>
<td>Very-50%</td>
<td>Quite-34%</td>
<td>Not Very-12%</td>
<td>Not at All-4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Self-Learning</td>
<td>Very-52%</td>
<td>Quite-32%</td>
<td>Not Very-14%</td>
<td>Not at All-2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Use of Other Learning Apps</td>
<td>Yes-46%</td>
<td>No-38%</td>
<td>Some-16%</td>
<td>Many-NIL</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Table 1**

In order to find the reach of Byju’s App among the learners, certain criteria had been chosen for analysing the questionnaire given. The criteria included Transformation, Personalisation, Promotion of Learning, Effectiveness, Easiness, etc. The values of the criteria were put together to create a bar diagram which is given below:

**Bar Diagram 2**

The criteria, named ‘Transformation’ was created in order to analyse how the respondents make use of the app. From the response of the learners, it can be seen that 70% use the app for understanding concepts and not for rote learning. This is clearly a transformation of learning from the old rote learning method. ‘Personalisation’ and ‘Promotion of Learning’ analyse how far the App promotes self-learning among students. 52% of the respondents consider that the app provides a personalized experience and promotes self-learning. ‘Effectiveness’ examines the effectiveness of app in preparation of exam and in reducing exam fear. 50% of the respondents said that the App helped them to score good marks in exam and 36% opined that the App helped them to reduce exam fear very much. ‘Easiness’ analysis showed how easy the app for usage is. 50% of the students feel that the app is quite easy to use. ‘Comfortability’ analysis showed how comfortable is the App to use from a user’s perspective. 68% opined that the App is good. ‘Interactivity’ was chosen based on the attractiveness and assistance of the app for exams. ‘Facilitation’ analysed how the app facilitates the learner to break down difficult concepts and helps to ease learning of difficult subjects. 42% of the respondents use the app for learning Maths and another 42% use it to learn Science. The study finally seeks to understand how Byju’s App helps the students of class VIII to XII for a personalized learning.
learning experience. The line graph given below clearly shows that the students of class X uses the App the most, followed by class XI and XII. Students in the high school and higher secondary sections take learning seriously. Rote learning is not useful for them as questions in the exams are mostly application level. Learners need to understand concepts to answer such questions. Learning byheart will not help in the long run. The educators of today insist on self-learning. Constructive techniques of teaching-learning process are widely used in the field of education as it is student-centred and concept oriented. Byju’s App strikes the right chord in this regard and its success speaks for itself. The line graph given below clearly shows that the students of class X uses the App the most, followed by class XI and XII.

8 CONCLUSION
The Byju’s App is known for its self-paced learning experience by enabling the students crack down difficult concepts. The app uses a host of modern techniques like web-based learning, visual graphics, video-based instruction, etc. to provide an immersive learning experience. These innovations are highly helpful for the students to understand basic concepts and enable them to prepare for exams. From this study, it is clear that Byju’s app has transformed Indian education scenario by effectively incorporating Constructive methods of teaching and learning. Most of the respondents agree that the app is interactive, comfortable and effective. But the study also finds that some users are not able to effectively use this App for personalized learning as they are not regular subscribers of the app. regular subscription is on the expensive side for average Indian students. Byju’s App is striving hard to transform education scenario and will surely reach to a mass audience if it can become more affordable.

9 ACKNOWLEDGMENTS
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10 REFERENCES

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