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E-Learning Adoption: An Empirical Study on App Based Learning Among Lower Primary Class Students in Karnataka Region

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The present research work essentially targets the audience who are using App based learning across Karnataka region. The core aim of the study is to identify the factors that influence the lower primary class students to opt for app based learning. The study has examined how well the students have adopted and are using the application in their day to day academic activities. By employing simple random sampling technique, a sample size of 54 respondents who are using app based learning were selected. The overall results showed that the respondents are highly satisfied with the app based learning and it has confirmed that the app based learning has helped the users enhance their academic performance.

Keywords: App Based Learning, Academic Performance, E-Learning, Mobile Learning.

RESEARCH ARTICLE

1. INTRODUCTION

Like any other developing country, In India also Information Communication Technology (ICT) has been considered as a crucial component in education system. Education is one of the basic needs to every child and citizen of the country. The integration of technology in the education need of the hour. Gone are the days where chalk and talk method was being used for teaching learning. Present education system is transforming into a modern education system that includes flipped classroom, video lectures, remote classroom, live seminars etc. In spite of using myriad of ICT tools in class room students are still facing lot challenges in learning process. As all the ICT tools are not handy and user friendly, especially lower primary class children, the advent of smart phones offers at offer remarkable access to curriculum content paves the way to successful e-learning in the form of mobile learning [14]. The introduction of application model in Indian education system has led to the introduction of novel learning methods in the form e-learning or mobile learning. Innovations in mobile technology facilitates the young generation to access lot of academic content. The learning style that uses mobile technology devices to simplify and facilitate learning is called a mobile learning by the researchers [6]. M-learning is the resulting form of e-learning and mobile learning has transformed the theoretical part of academic exploration into a real and valuable form of academic exploration [1]. Mobile learning is the latest method in learning which provide lot of advantages like cost saving, easy access, study aids, convenience and location based access [2]. The applications of mobile computing devices in the academic field varies from retrieval of information, contact and communication, assessment, learning and Personality development [8] and to enhance the learning opportunity, the mobile devices are also deployed to medical students [7]. The degree of interest and quantity of time that the school going children devote with internet and the inclination and orientation of the young children towards the usage of educational applications in digital media gives lot of scope for to supplement learning outside the school [11]. At this backdrop, the research paper explores how the "educational apps" which are developed for lower primary school children education has been adopted effectively among the targeted audience.

2. STATEMENT OF THE PROBLEM

Though the mobile Apps have gained its cynosure very recently, its level of adoption and penetration among people have both positive and negative impact. The sweeping

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technological change has had significant effects on the daily lives of adults and particularly its ultimate impact may be more with the children [11]. Next to gaming application in mobile technology, educational application has huge potential in the market [17]. Vast Customer base and steady education expenses made educational apps to create a huge market share [15]. Though the customer base for mobile apps are escalating at one side the challenges faced by the online educational service providers are unavoidable. Presently, educational apps are not offering a balance between the value and benefit and there is lot of bottlenecks which are limiting the penetration of educational apps. Further, majority of the App developers design a product based on their individual idea which may fail to consider the needs of users [17]. In this scenario it is very imperative to understand the level of usage and adoption pattern mobile learning among various age group. in this context the present study is an attempt to explore the adoption and usage of application based learning among lower primary class students.

3. THEORETICAL FRAMEWORK

The usage of mobile devices for the purpose of teaching and learning is called as mobile learning [12]. Learning through mobile is comparatively first-hand between students as its introduction has not surpassed even five years [4]. Mobile learning is meant for the people those who are not familiar with ICT tools and have an interest for e-learning. By integrating mobile learning to traditional learning methods, unenthusiastic learners are being encouraged to learn [9]. Mobile learning also provides a personalized platform for the learners to grapple ideas at their own speed [10]. Accordingly, "m-learning" aids to enhance the confidence and self-respect of the learners [5] (Vishwakarma, 2015). The mobile technology development mount ways for more users to reap the benefit of education, thereby one can enhance the academic performance for personal development [13]. Application based learning may possibly develop the respondents' potential and ability to comprehend the problems [16].

3.1. Objectives of Study

- To determine the acceptance level of students of e-learning program.
- To identify the factors which influence the respondents to use learning app.
- To identify the adoption pattern of application based learning programmes students among various age group.
- To identify whether there exist significant improvements in academic performance of usage of app based learning program.
- To understand the difficulties faced by students while using the application.

4. RESEARCH METHODOLOGY

In order to achieve the objectives and to answer the research question a systematic methodology will be followed for the proposed study.

The study has been started with identification of problem based on review of available literature and found the best possible way to understand how problem is addressed by various researchers on the same topic. After understanding the literature, the objectives were defined. Then questionnaires were framed according to the objectives. Data collection was carried out through the digital platform. Data analysis is done through the IBM's SPSS data analysis tool. General analysis is done through the google form's graphs and charts. Finally, the findings and discussion were made upon the same.

4.1. Research Design

Descriptive research design has been implemented for the research. As the study attempts to explore the various parameters like acceptance level of application based learning, effectiveness of e-learning in understanding concepts and difficulties faced by students while using the application, the descriptive research design is found to be more appropriate.

4.2. Sampling Technique

Simple Random sampling technique was used to collect a sample of 54 respondents who are the users of application based learning.

4.3. Sources of Data Collection

4.3.1. Primary Data

The research is essentially based on first-hand information from the respondents. The required primary data has been gathered based on focus group discussion and interview schedule method. The primary information pertaining to objectives of the study has been collected from users of application based educational services. The data has been gathered using questionnaire method. The researchers have taken free will consent from participants while obtaining data.

4.3.2. Reference Period of the Data to be Covered

Time Scope: The proposed study was conducted for a period of 3 months to effectively gather the information that successfully meets the study objectives. The data collection was carried out for a period of 2 months.

4.4. Scope of the Study

The study has been conducted among lower primary class students who use apps for learning. Majority of the users who participated in the study was from across Karnataka. As the researchers found difficult to obtain the database of the opted users of educational app, the sample size is

RESEARCH ARTICLE

kept 50. However, the researchers could be able to get 54 samples which was complete in all the aspects.

5. RESULTS AND DISCUSSION

5.1. Age Group

Among the user's app based learning, 27% of students belongs to 8–10-year age group and 23% students belongs to 11–14-year age group which depicts that much of app based learning methodology is prevailing among the school children. Further, among the participants the students in fourth standard have enrolled for app based education and reason for the same is the respondents needed a basic strong academic foundation.

5.2. Usage Pattern of Learning App

While exploring various reason for using the learning app, majority (i.e., 75%) of the respondents opined that to gain understanding of the basic and fundamental concepts they are using the learning app. Further, the respondents have also opined that they are exposed to the art of using application based learning for the past 2 years. When the respondents are expected to answer for the source of influence for learning app, majority of them think that they are influenced by advertisement in the social media as a major source. Further, the respondents have expressed that the quality of content provided in the learning app are exemplary and need a kind of technical support while using the learning app initially.

In addition to that an attempt has been made to check whether the usage of learning app has brought a significant improvement in the academic performance of the respondents. To decipher the same, the researchers have selected the variables viz., improvements in academic score, level of understanding of basic concepts, improvement in the recollection level and increase in the duration of study time.

5.3. Determinants of Usage of M-Learning

To examine the challenges faced by the respondents in using mobile app, the respondents stated that connecting with the mentors is the biggest challenge faced by users while using mobile learning app.

In order to group the factors which, influence the respondents to use mobile learning app, factor analysis has been used. The factors viz., Quality of content, Ease of language, Teachers in the Videos, Mentor support, Ease of usage of tablet learning, Technical support, Student portal for doubts clearing, Education Counsellors counselling session, Competitive exam preparation material and Quality of video.

Based on "Kaiser-Meyer-Olkin (KMO)" measures the "sampling adequacy" for the study is 74.5 percentage. The following Table I–III shows the results of commonalities based on the "Principal-component method" for extracting the variables into components, "total variance method" and "rotated components matrix."

All the selected 10 variables have been categorised into two components and each component have a group of factors which are correlated with each other and has influence on each other.

Based on the following Table III it can be inferred that the first group of factors viz., Teachers in the Video (0.624), Mentor Support (0.862), Technical Support

Table I. Commonalities: Extraction method: Principal component analysis.

Component	Parameter	Initial	Extraction
1	Quality of content	1.000	.815
2	Ease to English usage	1.000	.564
3	Teachers in the video	1.000	.684
4	Mentor support	1.000	.796
5	Ease of usage of table learning	1.000	.565
6	Technical support	1.000	.785
7	Student portal for doubts clearing	1.000	.634
8	Education councillors counselling session	1.000	.595
9	Competitive exam preparation material	1.000	.509
10	Quality of tablet and accessories	1.000	.674

Extraction method: Principal component analysis

Table II. Total variance explained: Extraction method: Principal component analysis.

	Initial eigenvalues			Extraction sum of squared loadings			Rotation sum of squared loadings		
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	5.144	51.443	51.443	5.144	51.443	51.443	3.328	33.275	33.275
2	1.477	14.771	66.214	1.477	14.771	66.214	3.294	32.939	66.214
3	.752	7.518	73.733						
4	.672	6.715	80.448						
5	.617	6.167	86.615						
6	.439	4.390	91.005						
7	.315	3.146	94.151						
8	.267	2.672	96.822						
9	.178	1.782	98.604						
10	.140	1.396	100.000						

Extraction method: Principal component analysis

RESEARCH ARTICLE

Table III. Rotated component matrix.

Component matrix*			
		Component	
Component	Parameter	Team support	Quality of material
1	Quality of content		.895
2	Ease to English usage		.693
3	Teachers in the video	.624	
4	Mentor support	.862	
5	Ease of usage of table learning		.695
6	Technical support	.815	
7	Student portal for doubts clearing	.782	
8	Education councillors counselling session		.763
9	Competitive exam preparation material		.657
10	Quality of tablet and accessories	.807	

Extraction method: Principal component analysis

(0.815), Student portals for doubt clearing (0.782) and Quality of videos (0.807) are highly correlated with each other and the same has been named as "Team Support."

The second group of factors viz., Quality of content (0.895), Ease of Language (0.693), ease of usage of app (0.695), Education Counsellors (0.73) and material provided (0.65) are highly correlated with each other each other and same has been named as "Quality of material."

6. CONCLUSION

The overall results of the study indicate that among lower primary class students who are using mobile learning app, majority of them are satisfied with the usage of application and there is a scope for accelerated adoption among the children in both lower primary and upper primary group. The study has proved that the application also helped users to perform better in their academic performance. Though there exist some challenges in using the mobile learning app, the rapid technological development and through the augmented services of Telecommunication sector, mobile learning has become a valuable complement to formal learning. It has become an extension of e-learning. If m-learning can be used appropriately along with "Information and Communication Technology" the quality education among the masses can be brought in without any hindrances.

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RESEARCH ARTICLE