Progressive Learning and Education through Mobile Apps - A Conceptual View

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Abstract In this fast mobile technology environment the necessity of developing mobile learning methodologies is considered to be important since the usage and accessibility is much significant forever. Mobile learning or M-learning provides learning process through handheld devices such as tablets and table computers and iPods, smart phones, etc., The impact of mobile devices in teaching learning process gives a better opportunity to enhance the skills of children and it removes all the barriers. This research work gives importance to next generation learning ideas and suggestions to examine the socio cultural and novel mobile learning experiences. Experimental strategies are applied to set of students from kinder garden students to various grades of students for the duration of six months from May 2017 to December 2017. Mobile learning analysis, values and benefits in mobile learning are highlighted in the research for better future to the budding children.

Key words: *Mobile learning, Cellular applications, Teaching methods*

I. INTRODUCTION

Communication technology continues to expand the boundaries of education to anywhere and anytimeexperience. Since the development of wireless and mobile communication is available with every ones personal computing devices it is easy to implement a mobile learning environment. The present student access information system is uses to communicate the teachers and their parents and also for data base maintenance. The concept of introducing the teaching in the same way to the peers from the teachers through a portal so that a virtual class room is always available for the students and their ability will increases individually by utilizing those available resources. Redefining the education experiences has challenges and issues in both the sectors such as educators and also IT department persons in order to develop the mixed application which involves technology and pedagogy. The main education goal is to enhance the teaching experiences to the teachers and learning experiences to the students. Ultimately the technology has to provide such module considering the challenges and unavoidable issues and develop the application. Figure 1 depicts the education development components which is essential for developing the mobile learning application. The process starts from analysis and ends into mobile technology environment to improve the education. The basic student characteristics and learning types, mobile technologies and its purposes are included in the education components development model.

Mobile learning is a method of contemporary education in latest era since mobile phones is the most enhanced instrument now days posses similar characteristics as computers in terms of accessing information, and file sharing. The re-conceptualize learning for the mobile age is used as the key strategy in the context of meaning establishment. The transformative effect of digital network into the support virtual communities establishes meaning full information flow through the handheld devices. Several benefits are present in the mobile connectivity such as personalized individual connection, collaborating real time and instant interactivity for better decision making. Mobile connectivity enhances the orientation in learning.
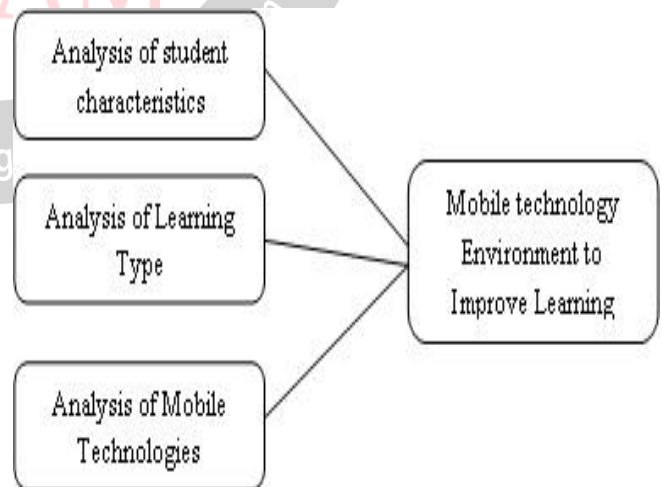

Figure 1Educational Development Components

Figure 2 provides a comparative chart for various learning options such as cell phone, smart phone, tablets, and digital reader for the student access from kinder garden to various grades.
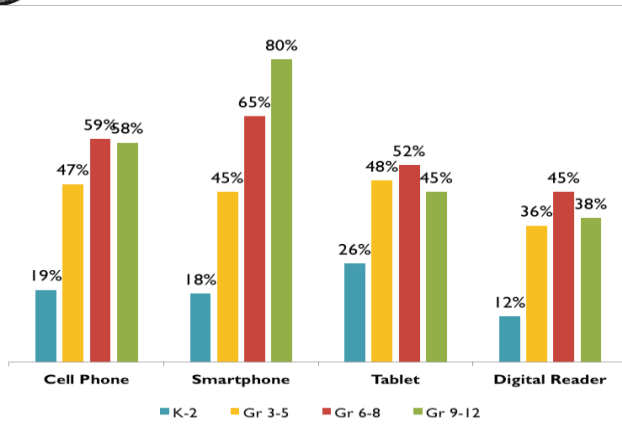
Figure 2 Student Personal Access to Mobile Devices (Not school provided)

The technical capacities of the mobile devices increases as the cost increases and the mobile learning will be the main object in the future educational system. A learning ethics and equitably for developing the mobile learning model has effective information collection process along with analysis. An audio and video presentation is present in the same platform for the flexible and convenient learning. This technology allows anyone to access information and learns from the available material which is considered as an added advantage.The general categories in mobile learning is given as

- Technology-driven mobile learning
- Miniature but portable e-learning
- Connected classroom learning
- Informal, personalized, situated mobile learning
- Mobile training/ performance support
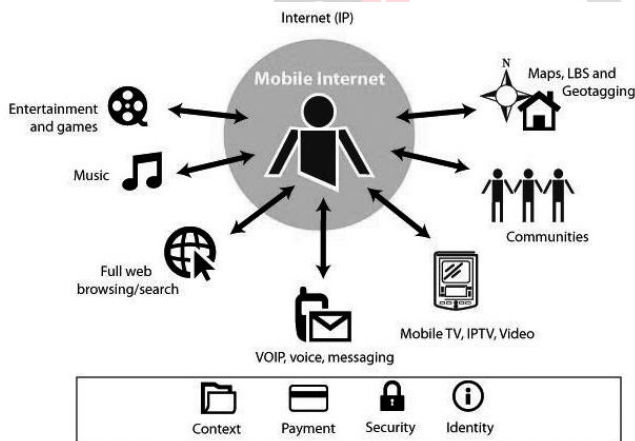- Remote/rural/development mobile learning

Figure 3 Mobile ecosystem

A simple definition for mobile learning as any sort of learning is available when the learner is not at a fixed place or predetermined location then mobile technologies fixes an opportunity to the learner to learn new things. Figure 3 depicts a simple mobile eco system consists of various elements and applications used by a common mobile phone user such as browsing, messaging, social communities. Maps etc.,

II. RELATED WORKS

A survey is conducted to obtain the clear view about the mobile learning models which are available in the current trend by observing various research articles. The review

process is the final step for estimation of the mobile learning and special education [1] applications. The issue in the proposed model is compatible with the knowledge factors of the applications. Several Research article have done researches on autism students those who are affected in their normal study activities. Mobile technologies provide a better opportunity to them to interact in the environment and also to the peoples present in the environment. Researchers found many applications teach and reinforce [2] the communicative skills of the students and other peoples. A design based individual specific learning applications [3] is also developed in the current trend. Since the necessity for each children differs and in particularly for the physically disabled children. In this type of study modules the educational researchers and application designers [4] combine together to provide the future technology solution to that children. Multiple environment [5] learning models is available in the mobile learning model so that the parent engagement with the student is increased and the technology provides wide opportunities for disable peoples than to common person. Another perspective from the researchers is about the parent and the care takers because their engagement and active participation in the learning is essential for the normal and also to the abnormal persons.

Various researches are provided evidence to their technologies to enhance the aspects of the learners and to find the base line [6] for understanding the necessary tools. Generally base line analysis provides better results which are useful for the future practice and professional development. Literature [7] describes about the mobile technology and its representation, expression and engagement. Multiple domain application in a common platform is easy to obtain the relative data which is suitable for the application. Literature [8] describes about to navigate and manage students task in various environment condition such as schools, work and informal settings. The pedagogical views is discussed in literature [9] so that he persons with disabilities an also utilize the learning applications.
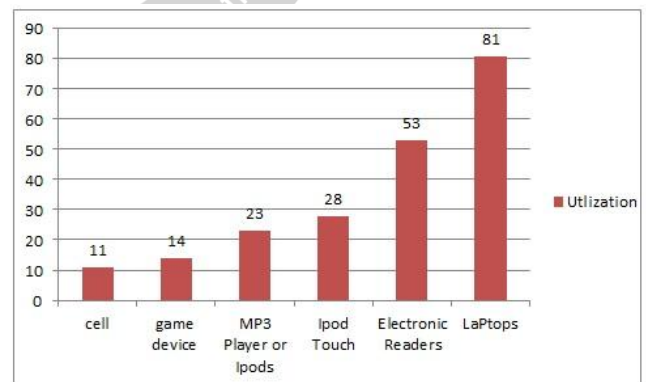

Figure 4 Utilization of resources

Figure 4 depicts the usage of learning applications on various devices. In this compared to smart phones and I pods and pads laptop places a leading role because it is more compatible with the user and also to the developer.

Various research works address mobile phones as computation and communication equipment as almost everyone in the environment holds. The student and the

teacher has faced so many conceptual issues and a face to face interactions , all that kind of issues can be solved via this mobile learning applications. Handheld devices ready to access the information by 1:1 concept. The device ratio and the ready to hand access varies for each person as it starts from school days to personal life. The formulation of pedagogical models is essential to integrate the application for learning and teaching. Research works highlights their design materials used for learning and the considerations taken under the field of social cultural, learning paradigms. The final part of the survey discusses the data connectivity and communication models to support the social collaboration and learning model construction for enhancing the interpersonal communication.

III. PROPOSED WORK

The proposed research model is a conceptual view of the mobile application which combines the socio cultural learning aspects which is reflected in the mathematical environment. A pair of student is used for the analysis and the performance is measured before and after the examination. The initial setting for the proposed model is mainly based on the data collection and analysis. This provides the learning practices to the participants through fully documented face to face activities which is pre-recorded already. Since the data collection is essential for the learners they have to maintain a register to find the important points which is essential at the time of examination. Followed by the analysis a grounded theoretical approach is performed to validate the results and summarize the entire process. The modeling process is defined by the mobility of the learning environment. In general the participants may use cellular camera in the application and it effectively produces a graphical representation for the image recorded. (e.g., constructing a graph while traveling to the university) The participant engagement in the modeling process involves the communication capabilities based on the cellular devices and also it depends on the group learning and individual learning stages.
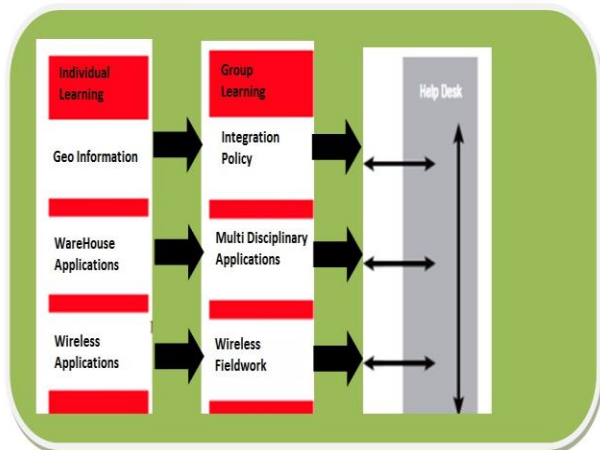

Figure 5 Proposed model learning app internal structure

In the individual learning models geo information basics, RCO warehouse, and wireless course are included for the necessity based layers. The definition for the layer is considered as the content layer which provides the basic solution to the needs of a common person. The second layer is a e learning or web enabled learning model which includes integration of environment policy, multi-disciplinary projects on the web, wireless field works. The last layer has the final application layer which manages the wireless application process to support the W-learning process through wireless medium. The interaction to the student teacher relationships is simple because of the proposed model which meets all the basic and also the essential needs for the learners and also to the teachers. The handy ready to use applications is used to build the health environment to the next generation for their learning process. By the end of the research the usage ratio is increased for mathematical and other applications so that it has advantages in the implementing this environment in schools.

IV. RESULTS AND DISCUSSION

The experimental results are obtained from observing a pair of students from all the ages. The usage of application is fully explained to them and also another set of peoples are selected to perform the same operation without knowing about the application. The course is a collaborative project which is supported by the technical tools and all the students were equipped with necessary mobile phones to perform the source specific tasks and also their own personal tasks. A set of researchers is used to observe the face to face observation and also to introduce the cellular applications. In the end of the course each students has to project their observations and that observations is validated and compared with the research faculty observations.

A comparison chart has been developed based on that and the methodology changes if the results has huge difference and if it matches nearby to the observer results then the developed score is given to the children and their parents. The occurrence of simple temporal phenomena is to be captured and recorded using the video camera. By using the message sharing application the recorded contents is shared to other learners also.

Table 1 Descriptive statistics of proposed model

Mobile Application	Maximum	Sum	Standard Deviation
Puzzle downloads	12	290	1.65
Mobile exercise downloads	9	75	0.71
Mobile exercise uploads	8	200	1.069
Social media apps	10	305	1.35
Apps for studies(science and social science)	31	1037	3.22

"Maximum" indicates the maximum number of instances accomplished by an individual student. "Sum" indicates the total number of instances accomplished by all students participating in the learning activity. "S.D." is the standard deviation around the mean student accomplishments. To date, perceptual data on a large scale have been gathered from two courses of study from 25 students in each batch and each batch contains two pairs and a total of 50 students are selected for observation. Current feedback indicates that students who engaged in the use of mobile devices for learning found that the experience of using a PDA

enhanced their learning experience. Table 2 provides a comparative utilization percentage of application used by the students of various ages.

Table 2 Special education student's use of apps

Age → Application Description ↓	1-5 (%)	5-10 (%)	10–15 (%)	15–18 (%)	18-21 (%)
Puzzle downloads	22.22	37.96	20.37	9.26	10.19
Mobile exercise downloads	87.69	87.41	82.78	81.0	67.58
Mobile exercise uploads	90.74	4.65	0.91	0.0	3.51
Social media apps	86.45	10.95	1.67	0.0	0.0
Apps for studies (science and social science)	88.89	10.25	1.79	0.0	0.0

In particular, they noted that the mobile environment made the course more interesting, enjoyable and fun in addition to being useful for understanding and remembering, as well as generally helpful for motivation and increasing confidence. Figure 6 provides the illustrative description about the comparison of various ages of students.
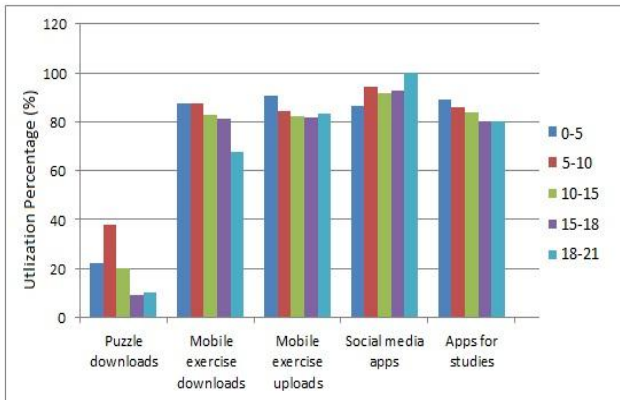

Figure 6 comparison of utilization percentage for various ages of students

However, they saw the environment questionable for changing learning behavior and not especially useful in stimulating students to explore new topics. Table 3 describes about the use of application by therapeutic professionals of all the ages.

Table 3 Therapeutic Professionals' use of apps (n=32)

Age → Application Description ↓	1-5 (%)	5-10 (%)	10–15 (%)	15–18 (%)	18-21 (%)
Puzzle downloads	92.45	31.25	32.35	39.45	40.15
Mobile exercise downloads	95.58	93.54	92.56	96.54	91.66
Mobile exercise uploads	91.25	98.69	88.97	84.69	89.91
Social media apps	100.0	98.65	99.9	99.9	99.9
Apps for studies (science and social science)	100.0	96	98.6	97.64	95.62

From all the observations the proposed model is compared with the Chiang et al education model for observing the success ratio and the drop rates. Since the education model is used for all stages of peoples and the same model is used in the Chiang et al model from mobile learning application. Figure 7 depicts the performance comparison.
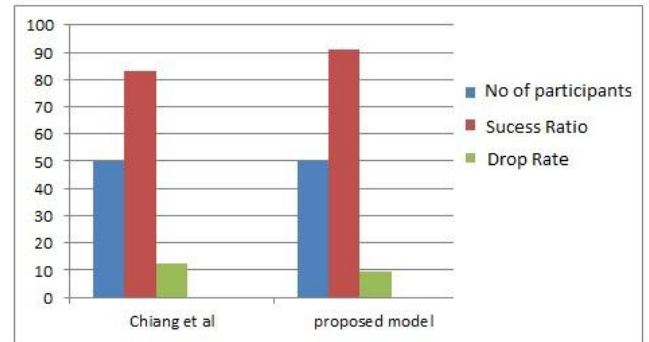

Figure 7 Performance comparison

The same model is selected with 50 numbers of students and it is observed that the success ratio is higher for the proposed model than the Chiang et al., model of learning system. The success ratio for the proposed model is 91.25 % which is 10% more than the Chiang et al., model and the drop rate is less compared to others as 9.65%.

V. CONCLUSION

The main objective of the research is to present a mobile learning environment to the students to enhance their socio cultural activities. In the end a particular attention is given and a feedback from the students is observed to measure the performance of the proposed model application. Various stages and ages of peoples and their activities are monitored to summarize the results and particularly in terms of daily exercises upload and download, studies, entertainment activities. From the results it is observed that initial stage students re very eager to learn new things via the application. So this mobile learning application is a successful one based on the maximum utilization ratio observed from the stage 0-5,5-10. The developing age students and the necessity to provide good and quality education is at the time of a child in the age range of 1-10. This mobile application has success rated for this ranges and Provides "No" as an answer to the question "do mobile learning affect children"

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