M-LEARNING IN A HYBRIDIZED PARADIGM

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Abstract. "Knowledge is Power" the proverb is not only apt and correct but also bears with it an ocean of depth and meanings. It is the knowledge that had been considered for the human being as an enblem of supremity over the angles and what so ever is there in the heavens and the earths, to be the best creation and the vicegerant of the GOD.

Knowledge is the supreme category of data and the refined form of learning. From C-Learning to E-Learning and then to M-Learning is passing a way for the fast mental growth of the learner, making him more knowledgeable by the dint of the smart phone, PDA and the hybrid mobile technology.

An "Integrated Success Factors" Hybridized enviornment for implementation and adoption; in the better interest of the taught (for his multidimentional mental progress) has been proposed in this research paper. Furthermore the social impairing effects as the Risk Triangle has been identified and designed, hence put forth for future research.

Keywords: learning paradigm, mobile technology, C-Learning, E-Learning, M-Learning, hybridized , adoption, mental growth.

AMS Subject Classification: 97C70.

1. Introduction

Mobile, a word that has got so familiar even with the uneducated that it has changed the whole scenario. It is now a days, not only a word but it is a mobile phone for short a mobile, which is so common a communication gadget that it can be seen in the hands of a labourer, a farm worker, who finds it difficult even to both his ends meet. A revolution that spreaded the information in a ubiquitos manner. It has further helped the scientists to reap the benefits of its utility and quality in the dissemination of the education called Mobile learning or simply M-learning.

The two prominent features that differentiate M-Learning from the other types of learning are the portability and its omni reach (where internet connection can be established). These two distinct features has given birth to additional value added five attributes namely; ubiquity, continence, Instant connectivity, personalization, Localization of products and services [11] as shown in the Figure 1.

Classroom learning cannot be thought, to be replaced by Mobile learning, just like the relationship between e-Learning and classroom instruction. Actually   it presents an alternative for the delivery of the contents further its inclusion in the day to day routine. The developed stuff of learning should be in short , easily

understandable chunks, that can be transmitted via the cable less networks. Consequently, the basic theme of on the move learning is not to transform personal computing based know how material into its format acceptable to mobile, rather than considering how these gadgets can be brought in use for strengthening and harmonizing overall strategy of learning.

Figure 1. Attributes of the M-Learning Features.

Mobile learning in the overall scenario has given further flexibility, accessibility along with several activities of one's own interest. These added features are expected to enhance the activities of the learner, thereby creating an environment of greater effective and fruitfulness. The mobile learning system must be adaptive to the learner contexts, i.e., movement, motivation, style, background, etc. [1].

2. Review and development

The wireless feature of mobile utility is only a couple of years old i.e. one of the first was the Darthmouth college to embrace in the year 2000, this wireless revolution initially; till it reached its full adoptability in the year 2002 [4].

As per Sharma, the continuous evolution of wireless technology and the spread of internet-enabled mobile devices, mobile learning will have significant effect on the learning paradigm and reshaping the ways of learning. There are many definitions for mobile learning in the literature; it may be defined as: delivery of e-content in digitized via wireless phones attached to personal digital assistants (PDAs) or laptops [9].

Grasso [2] states that to design mobile learning system two steps must be taken:

First Step: User analysis : The attributes pertaining to the user his nationality, age, needed musts or any handicap; with his level of interest and know-how in terms of the use for learning through the devices he carries with him.

Second Step: Design of useful interface

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The step next to the user analysis is to design an interface that which is compatible with the previous analysis and the technology available. Certain considerations must be followed while the design of the interface is under its way:"

"How content is designed and organized it is an important issue, learning styles, mental processing, and motivational factors must be considered. Some guidelines must be followed in designing contents for mobile learning", says Young [12].

"Architecture for Integrated Information Systems (ARIS), the mobile learning project [3], stands up to the requirements underneath;

Small objects for learning :- In the mobile learning scenario, the user gets irregular slices of educational information. This is to improve the possibility of learner knowledge comprehension till the next occurrence of distraction.

- Review concepts Designing: As the Distractions hinder learners to digest new knowledge chunks. Thus; learning objects in the mobile category provide the opportunity to repeat and practice the known material.
- Minimized compulsory interactivity: The fading out chance if needed and to reengage it later on, at the point the learner stopped is of real importance. [3]

Roschelle [8] is of the view that hand held computers(PDA, Mobile Phone or Smartphone) could prove an imperative and dire need of the classroom, for the reason that they help in the transformation of their eventual and additional role in association with the laboratory, further their overall utility in ICT.

Liu [5] has reported: the adoption of mobile and wireless technologies in the developing and developed countries of the world is not only escalating but also unparalleled one. These technologies are modernizing the education, renovating the conventional style of teaching and learning into 'anywhere' and 'anytime'. For experimental Learning environment the wireless technologies have many advantages: sustaining team's work on projects that engage learners in such activities, thereby improving classroom's collaborative and communication learning.

Despite all the affirmative add ons , the worst part about mobile phone or any gadget working on batteries is the constant hassle of recharging. The cells called "Fuel cells" promise to provide 40 hours of power supply (currently in development) but new technology of "Betavoltic Batteries" being developed can render the former useless for the later promise a life of 25 to 30 years without charging [7]. The availability of such batteries within 2 to 3 years would bring a revolution in the mobile phone Technology and hence consequently would further enhance the M-learning environment.

Masud,A.H et.al maintains M-Learning to be virtually accessable from any where but considers high cost and lack of sufficient educational resources to be the challenges [6].

3.   Result & Discussion

According to the learning/ wisdom model as disscussed in [10], connectivity and understanding are co-related to each other in a way that in the general learning environment data moves to perception which further moves to information and further moves to knowledge finally reaching to learning which is actually the wisdom. This model fits well in the M-learning environment. With the addition of the Wi-Fi for smart phones and PDAs, the learning has even grown stronger as it has moved from the conventional to electronic and mobile learning environments.
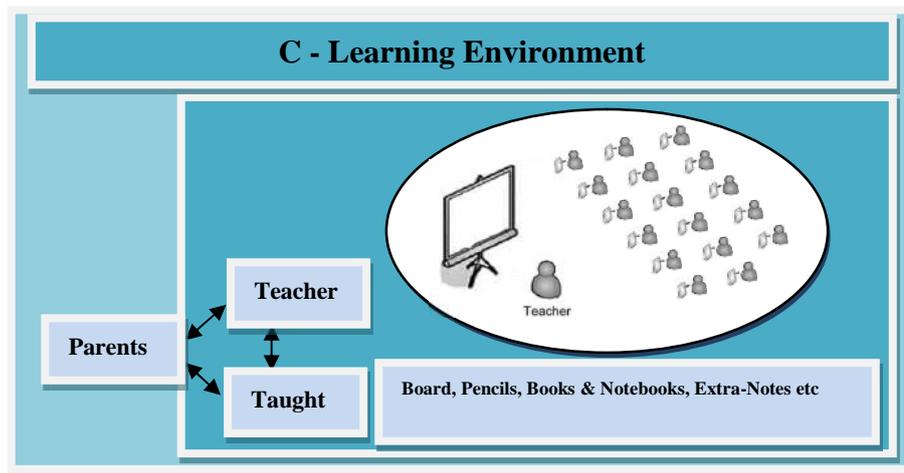

Figure 2. Conventional Learning Environment

In the conventional learning or C-Learning environment as given in Fig-2,we find three entities strongly co-related with each other i.e. a strong relationship between the teacher and the taught, where as another relation between the teacher and the parentsexist and there is continuous feed back about the taught to the parents from the teacher. This feed back about the taught plays an important role for fine tunning of the students by parents to keep them on track for the right & ethical learning. The tools of learning are simple with small affordable cost involved.

The advancement of technology on one side added a considerable ease to both, in the close and the distance learning, whereas on the other side it has loosened the ties between the teacher and the parents; creating an indirect link but it got further strengthened in case of the teacher and the taught in terms of the double interaction (Direct & Through multimedia). The student got more independence alongwith liberal and enhanced thinking. The tools got modernized in the scenario of the global village and the the information boom; powered with the personal computers and the internet rich media, creating an environment of Electronic or E-Learning as depicted in the Fig-3 that has set and gave another

meaning of the learning without bounds in the jurisdiction of; where ever is the internet available.
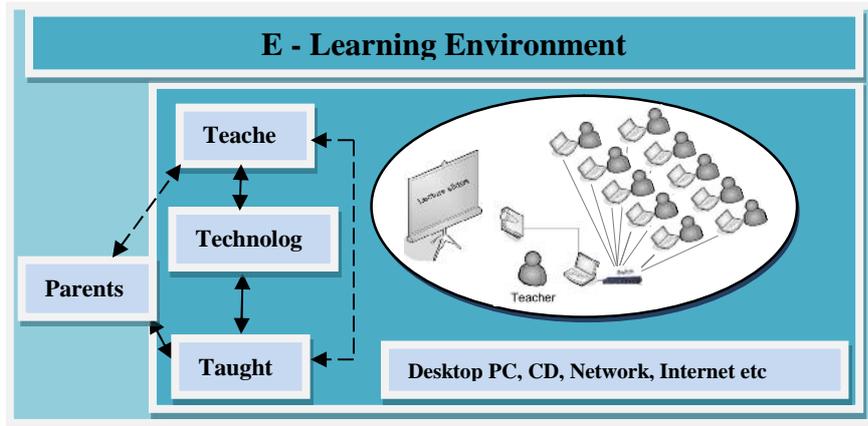

Figure 3. Electronic Learning Environment

Electronic learning opened up a new avenue for the Scientists & researchers to ponder upon its utility and usability in all the disciplines in general and in the field of learning in particular. The wireless technology geared up with the mobile phnoes, smart phones and the PDAs helped to introduce the new idea of Mobile Learning(M-Learning for short), illustrated in Fig-4 below. This environment has more liberty at the student's end for he has the gadget(Handheld mobile device) to learn at his convenience at any time and any where by the dint of the wireless connected environment.
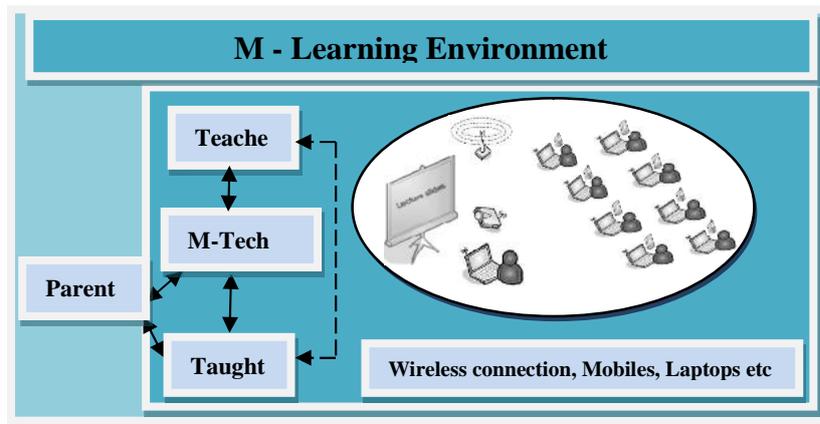

Figure 4. Mobile Learning Environment

The classroom environment has three level coordination and interaction i.e. direct, through laptop/ wireless and the mobile phone with wireless connectivity. The role of teacher in such an environment has become virtual and so does the

parents. The M-Learning has provided an unbounded, independent, self centered, agile, globalized quantity & quality and full of knowledge environment, that is the hybridized paradigm.

An intercomparison of the three learning environments has been presented in the form of Table-1 below, catagorizing the necessary ingredients in each of the environments. Since each of the ingredient is not a finalized entityin each category but has changed its form with the advancement of the learning scenario in the form of a hybridized one, that is why these have been considered as transitional ingredients.

Table1. Transitional Ingredients of C-Learning, E-Learning & M-Learning

C-Learning	E-Learning	M-Learning
Books & Note-Books	Computer	Mobile
Direct Interaction	Bandwidth	GPRS, Bluetooth, G3, MMS
Direct Relation	Hyperlinked	Wireless Connection
Mutual	Collaborative	Networked
Travel Consequences	Media-Rich	Lightweight
On Campus Learning	Distance Learning	Situated Learning
legitimate Situation	Simulated Situation	Realistic Situation

A deep look on Table-1 reveal that the learning has evolved over the period of years with the advent of the technology as it has made its discourse from C-Learning to E-Learning and the M-Learning as it is seen in today's hybridized paradigm, but this is not the end of the learning , for neither the technology nor the human mind has ceased to grow . It may however be possible that with the passage of time and further technological inventions, new and enhanced learning environments come into existence. As whole of the world can't be modernized simultaneously, the importance of the C- and E-Learning would remain intact.

The above discussion is true for the suggested "Integrated Success Factor" in hybridized paradigm for all the three learning environments as well, as shown in the Figure-5 below. The funnel type structure of the success factors environment indicate that the success factors building blocks of C-Learning environment support the addition of the new success factors, thereby creating a new and higher level learning environment called E-Learning and further incorporating more success factors, hence giving a strengthened, one more level up than the E-Learning environment, now a days known as the M-Learning environment.

It is evident from the diagram that the ratio of the success factor to the learning level turns out to be 0.90 and 1.45 for M-Learning and C-Learning respectively. This ratio is the clear indication that in the C-Learning environment although the learning level was relatively lacking but what ever was taught, was more than a hundred percent success and along with the evolution in Learning, the E-Learning both of the factors got stronger and reached almost hundred percent but heading towards more independent, omnipresent, every and any where learning

environment enhanced the level of learning to an unparalleled extent but the factors like security, unbounded impendence with the little ethical adoption has affected the success factors to a considerable level, leaving with us a food for thought that certain factors require a dire consideration in order to bring a balance between the success factors and the learning level.
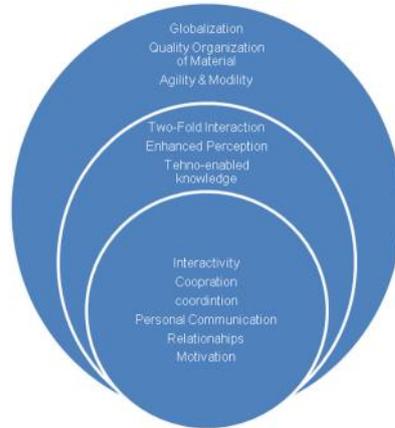

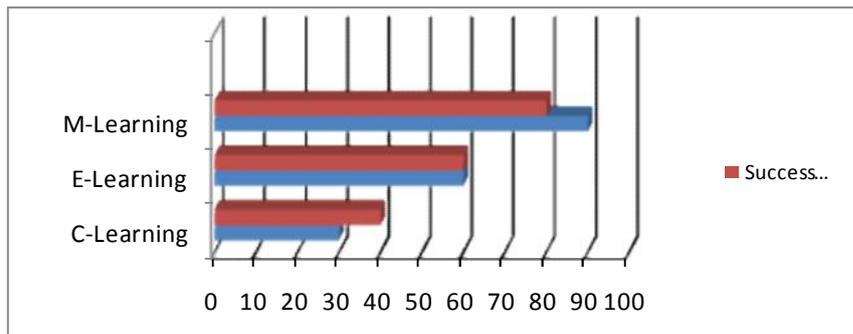Figure5. Hybridized Paradigm: Success Factors

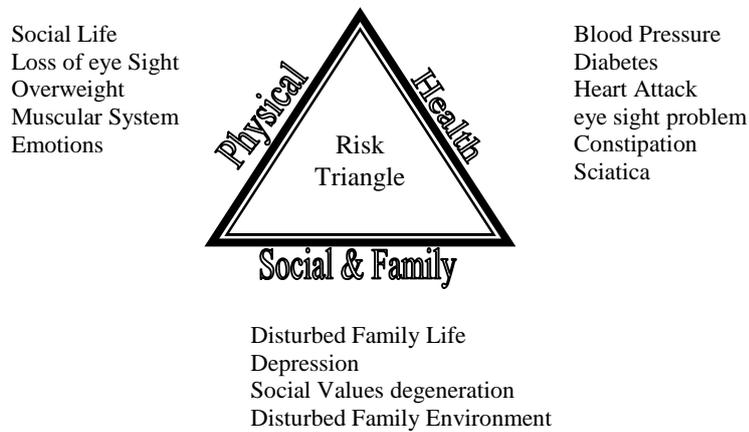Chart-1: Success Factors VS Learning Levels of Hybridized Paradigm

It is evident from the diagram that the ratio of the success factor to the learning level turns out to be 0.90 and 1.45 for M-Learning and C-Learning respectively. This ratio is the clear indication that in the C-Learning environment although the learning level was relatively lacking but what ever was taught, was more than a hundred percent success and along with the evolution in Learning, the E-Learning both of the factors got stronger and reached almost hundred percent but heading towards more independent, omnipresent, every and any where learning environment enhanced the level of learning to an unparalleled extent but the factors like security, unbounded impendence with the little ethical adoption has affected

the success factors to a considerable level, leaving with us a food for thought that certain factors require a dire consideration in order to bring a balance between the success factors and the learning level.

4.   Conclusions & Future research

We conclude that the use of the wireless technologies at educational institutions could be of certain advantage and benefit to all the associated ones, given that the imperative policies and guidelines are in practice. The   arena comprising the stakeholders (Parents, Teachers & Taught), communication infrastructure, mobile devices and the success factors have been identified as critical for the m-learning adoption successfully; and hence required to be considered seriously.

It has been further observed that on one hand the advancement of M-Learning has added to the sharpness of mind, improved the skills, enhanced the analytical ability, increased the interactivity, and catalyzed the direct tackling and problem solution approach , while on the other it has introduced a triangle of risks as indicated below need an earliest attention for further research in this direction:

Social Life   Blood Pressure
Loss of eye Sight   Diabetes
Overweight   Heart Attack
Muscular System   eye sight problem
Emotions   Constipation
                                Sciatica

Physical **Health**

Risk
Triangle

Social & Family

Disturbed Family Life
Depression
Social Values degeneration
Disturbed Family Environment

5.   Acknowledgements

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Hibrid paradiqmalarda M-t dris

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XÜLAS

"Bilik gücdür"- bu müdrik k lam t kc u urlu v do ru deyil, h m d özünd d rin m na da ıyır. M hz bilik insanı m l kd n f rql ndir n sas c h tdir v bu da onu Allahın yaratdı ı n mük mm l varlı a çevirir.

Bilik- veril nl rin n yüks k katoqoriyası v t drisin n mük mm l formasıdır. T l b nin sür tli qli inki afı C-t dris, E-t dris v n hay t M-t dris kimi m rh l l rd n

keç r k onu smartfonların v dig r müasir hibrid mobil texnologiyaların köm yi il daha m lumatlı edir.

Bu i d "U urun c ml nmi faktorları" üsulu t klif olunur ki, bu da slind t l b nin maraqlarına uy un (onun h rt r fli psixi inki afını t min ed n) q rarların verilm si v h yata keçirilm si üçün qibrid mühitin yaradılmasından ibar tdir. Bundan ba qa i d Risk Ücbuca ının n tic si kimi meydana çıxan t l b nin sosial sıxılması anlayı ı verilmi dir ki, bu da g l c k t dqiqatlar üçün material olacaq.

Açar sözl r: t dris paradiqması, mobil texnologiyalar, C-t dris, E-t dris, M-t dris, hibridlik, uy unla ma, qli inki af.

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