

Mobile Learning as a Self Evaluation Tool

Kishoara sharmin

Student ID: 02101008

Department of Computer Science and
Engineering



BRAC University

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Declaration

I hereby declare that this thesis is based on the results found by myself. Materials of work found by other researcher are mentioned by reference.

Signature of Supervisor

Signature of Author

Acknowledgement

It was my great pleasure to be involved with the thesis study on “Mobile Learning As a Supporting or Self Evaluation Tool”

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Kishoara Sharmin
02101008
CSE Dept.
BRAC University.

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Preface

The application of information and communications technology to education and training, both in the corporate and public sectors is now big business on a global scale. The rapid emergence of new technologies outpaces the ability of learning communities to apply the technological infrastructure in any systemic or sustainable fashion.

M-learning has now emerged as a new wave of development, based on the use of mobile devices combined with wireless infrastructure, and much of the current literature on m-learning reveals all the strengths and weaknesses associated with the more mature e-learning communities.

In a developing country like Bangladesh only 40% of total population is formally educated which of many even can not speak or understand English. One of the main reasons for lack of literacy is poverty. Approximately 80% of total population live under poverty. But now a days it is some how possible for most of the people to manage at least one mobile phone in a house, since all telecom companies has surprisingly liberalise their cost and facilitate a lot with latest technologies. The number of mobile phone users in Bangladesh has crossed 15.50 million in August, 2006. It means that every 12 people out of 100 have a mobile.

Devices such as Personal Digital Assistants (PDAs), Pocket PCs, and mobile phones used as mobile learning tools can offer cost-effective access to learning materials especially in the rural areas. In our country may be due to some improper system and planning students afraid of sitting for any examination. If we can provide those students with the facility like “mobile devices (especially mobile phone) as self evaluation tools or supporting tools for learning”, students most of who have this cheaper device can help themselves to prepare before facing the admissions.

Since successful m-learning deployment is best achieved through partnerships; telecom companies can provide this service of accessing a test data bank of different education levels at a low cost to increase their subscribers and enhance their image.

Chapter: 1

Introduction:

M-learning' is the follow up of E-learning for its part originates from D-learning (distance education). M-learning is the delivery of learning to students who are not keeping a fixed location. The rapid growth of information and communication technologies (ICT) makes it possible to develop new forms of this education.

M-learning is a term coined to cover a complex array of possibilities opened up by the convergence of new mobile technologies, wireless infrastructure and e-learning developments.

1. “M-Learning is the intersection of mobile computing and e-learning: accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment. E-Learning independent of location, time or space” (Quinn, 2000).
2. “Three ways learning can be considered mobile “learning” is mobile in terms of space; it is mobile in different areas of life; it is mobile with respect of time” (Vavoula and Sharples, 2002).

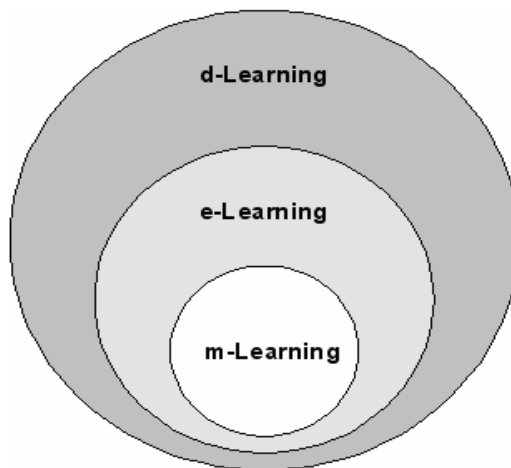


figure 1: m-learning

Chapter 2

2.1 Differences between M-Learning and E-Learning

If e-learning took learning away from the classroom or campus, then m-learning is taking learning away from a fixed point. Where e-learning is an alternative to classroom learning (actually eLearning should/can be complementary to classroom learning) - m-learning is a complementary activity to both e-learning and traditional learning. M-learning respects that a user would like to interact with educational resources whilst away from their normal place of learning - classroom or computer.

2.2 Challenges with m-learning

The connectivity is one of the main differences if we compare a mobile device with the PC (the usual medium for delivering e-learning). Nowadays mobile devices might be connected to 'The Net' via many technologies – WAP, GPRS, UMTS, Bluetooth, WiFi, etc. Although it is predictable that in the future the 'always on' will be wide spread still it is not the case. Mobile devices often have periods of disconnection, either intentionally (when the connection is too expensive) or not (when no infrastructure is provided).

There are a number of challenges involved in meeting the needs of today's students:

1. Mobility Challenges

Connectivity

Security

Device management

Scalability

Services including messaging services, location awareness, intelligent notification

2. Device Challenges

Unique device capabilities

Varying programming models

No dominant standard

3. Application Challenges

Content aggregation

Multi-device capability

Opportunities

Chapter 3

3.1 Current State of Mobile Technologies, Connectivity and Applications

- Limited memory and storage are major inhibitors.
- Screens are generally too small for the use of any sophisticated applications.
- Intermittent connectivity is a major barrier.
- Links to learning management systems or enterprise systems are in an embryonic stage of development.
- The industry is plagued by proprietary solutions.
- Transmitting across different browsers and platforms is almost impossible.
- Existing applications are not easily integrated to the mobile technology environment.
- Tracking outcomes is difficult.
- Cost of accessing major third-party networks is punitive.

- Continuous technology development militates against stability and sustainability in terms of mounting viable m-learning applications.

3.2 Technical requirements

From a different perspective, it can be identified many different factors that have to be taken into account in selecting the right device. These factors summarised by C. O'Malley et al (2003) in the following form:

1. Costs
2. Systems design
3. Choice of technology
4. Roles for initiating and supporting m-learning
5. Procedures and strategies management
6. Equipment
7. Training and technical support
8. Teacher to discover suitable applications
9. User content on data
10. Combination of old and new activities
11. Collaboration
12. Flexibility.

Irrespective of the m-learning environment, all these factors will need to be taken into account, although the solutions or technology combinations may vary greatly according to the particular implementation.

3.3

Pedagogical considerations

There are many overlaps between e-learning and m-learning pedagogical considerations. While e-learning has been developing over a number of years, there is surprisingly little research into the pedagogical effectiveness of the learning experience through technology enhancement. Much of e-learning develops as a response to the convenience factor of more flexible study patterns. Enhancement of the learner experience has not been a key driver so far, although there are now signs of growing interest in learner outcomes derived from e-learning environments.

Given this situation, there are lots of “warning-bells” for the m-learning fraternity who face much more difficult challenges in terms of providing evidence of a satisfactory learning experience, because of the limitations of the mobile technologies and communication networks.

Principal pedagogical considerations to be taken into account are:

1. Urgency of learning need
2. Initiative of knowledge acquisition
3. Mobility of learning setting
4. Interactivity of learning process
5. Situated ness of instructional activities
6. Integration of instructional content.

Chapter 4:

4.1 M-learning in developing countries:

The designers of current mobile technologies do not necessarily consider the conditions in developing countries when designing, so their products are not always applicable in the developing world. However, there has been research into the technological needs of people in developing regions, and this paper will discuss some technologies and devices that are suitable for conditions in the developing world.

Today's personal computer (PC) complexity makes the learning cycle too difficult and time-consuming for those living in developing regions. Other disadvantages of current PCs are the continuous threat of viruses due to security lapses, and the need for a continuous power supply, something which is often not possible in unstable and rural regions. In addition, there is the issue of cost. Most advertisements for PCs hide the real cost of ownership. PC owners must pay for hardware, software, power supply and maintenance costs. They also face the cost of internet connection, which can often be very high in rural areas. Furthermore, the primary interface is generally in English, not in local languages. For the reasons listed above, normal PCs are unsuitable for three quarters of the world's population.

The developing world needs technology with the following characteristics:

- * Simple, easy to use, affordable technology.
- * Independent of mains power-supply.
- * Rugged, dust resistant. Shareable.
- * Fitted with multi-lingual capabilities.
- * Useful – must make an impact on daily life for education, earning a living, and communication.

Given these special needs, the desirable features for a computer are:

- * Affordable.
- * Battery operated; rechargeable.
- * No moving parts.
- * LCD screen which requires less power.
- * Touch screen with pictorial icons.
- * Printer interface.
- * Internet connectivity with built in modem.
- * Intuitive user interface making a manual unnecessary.
- * Built-in software including word processing, e-mail, browser, multilingual capability, local language text-to-speech, multimedia.
- * Memory expansion capability–application software on USB flash memory stick.

With an understanding of the particular needs of people in developing regions, designers developed a simple mobile device, the Encore *Simputer* .



figure 2: simputer

It is a low-cost Linux-based local language computing device with multiple input and connectivity options, and has the following features:

- * Icon graphics make it easy to use.
- * Voice feedback in local languages does not require the user to be literate.
- * Touch is the primary input; image and sound are the primary outputs.
- * It runs on two AA batteries because these are commonly available in developing regions.

*The applications can be platform independent,

Another computer device similar to the *Simputer*, but larger in size is the *Mobilis*, a mobile desktop computer. The unique features of the Mobilis are:

- * Portability and small size.
- * Optional GPS, GPRS built-in.
- * Low power consumption – battery operation and enhanced operation using solar power.

4.2 Prerequisites:

Before m-learning programmes can be implemented:

- *Infrastructure must be established
- * ICT services expanded
- *Innovative policies administered
- *Curriculum and content developed
- * School administrations reorganized and teacher training conducted.

4.3 In what way m learning should be considered:

M-learning offers numerous opportunities but also poses related policy issues. Decisions must be made as to whether m-learning is a supplement to traditional classroom education or an alternative approach to mainstream education. Alternatively, m-learning could be utilized solely for special education for students with learning disabilities, or only in ICT courses. In educational administration, m-learning can assist in designing curricula, supporting school administration, and training teachers. Once m-learning and its broadband network is set up, the network backbone can be utilized for other services such as e-

government and dialogue between government and citizens, and can enable the development of e-communities.

4.4 Possible sources of revenue

Possible sources of revenue for the deployment and maintenance of m-learning programmes include:

VOIP – people will pay for telephone service

M-commerce – people will buy goods and services using Pocket PCs

E-mail and web browsing – people will pay for Internet access

Private network – businesses will pay for network services

Chapter 5:

5.1 M-learning in India:

India is successfully adapting to the digital age and evolution of ICT. Electronics and information technology is the fastest growing segment of industry in India, both in terms of production and exports. Within the education sector there have been outstanding initiatives to incorporate ICT into education at the state and national level.

5.2 Their journey to M-Learning:

In September 2004, India launched the first nationwide exclusive educational satellite. Edusat is an interactive satellite-based distance education system for the country that provides a total of 74 channels and includes national and regional beams. Edusat will have enormous capacity for providing a variety of options for

interactive / broadcast / telecast modes and online communication networks at the national, regional and state level. AC Band network, Ku Band network and two-

way computer connectivity can be used for virtual classrooms to have access to database and audio networks.

5.3 Limitations:

A key challenge is the limited access to ICT by rural and underprivileged communities. The limitations of the existing telecom infrastructure are such that reaching all communities is difficult in the Indian context.

The Census of 2001 places its population at 1,027,015,247 spread over an area of 3,287,590 square kilometres, with an average density of 329/km². Population density in the 13 districts of the State varies from a high of 612 per square kilometre in Haridware to a low of 37 in Uttarkashi. Infrastructure is inadequate. Most of the roads are usable but not all areas have roads.

5.4 Objective:

The short-term objective was teaching and learning English at primary level through e-learning and M-learning. The purpose of the proposed project was to initiate m-learning for teaching English language.

Chapter 6

Bangladesh:



6.1

Country profile

Name of the country: People's Republic of Bangladesh.

Geographical Location: 20° 34' – 26° 33' North; 88° 01' - 92° 41' East.

Capital City: Dhaka (population 14 million).

Area : total: 144,000 sq km , land: 133,910 sq km , water: 10,090 sq km

Population : 141,340,476 (July 2004,est).

Population growth rate: 2.08 per cent.(2004,est).

Electricity consumption: 14025 billion kwt(2001) .

Internet Service Providers (ISPs) : 10 (2000)

Internet Users: 243,000 (2003)

6.2 Education in Bangladesh:

6.2.1 Primary and junior secondary level

The first five years and the next three years of education constitute the primary and junior secondary levels respectively. Bengali and English languages, history, geography, general science, mathematics and religion are the major subjects taught at these levels. Students become, in a very small way, aware of computers and their vast applications through their general science textbooks.

6.2.2 Secondary and higher secondary levels

The 9th and 10th years of a school-going student and the next two years of a college-going student constitute the secondary and higher secondary levels respectively.

6.2.3 Undergraduate and post-graduate levels

At the moment Bangladesh has more than 8 public and 20 private universities, 4 BIT s and some national university-affiliated post-graduate institutes and colleges. Bangladesh Open University is the only university in Bangladesh that is offering Distance Education. Established in 1992 by an act of Parliament, it has opened up new vistas in distance education in the country.

6.3 Problems in our learning process

Due to some unavoidable political circumstances and improper management of content development, students in developing countries like Bangladesh always

face lack of confidence in sitting for the board examinations. There is a communication gap between teacher and student. Poor students don't get the opportunity to have extra facility from school teachers or coaching centres for which they always feel lack of confidence, lack of proper guidance. To overcome this fear students are allowed to evaluate their knowledge against a knowledge databank by taking self evaluations via a notification system of the mobile device such as SMS.

6.4 Ideas

This is the fact that we can not change the so called traditional education system and can not even provide the students with much more facilities on hand. But we can have such better alternative through which learners' especially primary and junior level students can be benefited with the cheapest and the most famous technologies now a days. If we can provide them mobile devices as self evaluating tools or supporting tools it can help them to a large extent. Especially poor students who can not afford more money, and those children who are physically unable to reach to institutions. In our country we don't have varieties of mobile devices like PDA, laptop, pocket PCs, simputers, mobilies; but the only device most of us have is cellular phone. Most of the people especially young

generation has been grown with the interest of using m-learning technologies to enhance learning through formal or in formal collaboration.

One of the mobile telecom facilities is short messaging service (SMS), which is the least expensive and the common facilities. If we can provide some questionnaire data bank against student knowledge they can have the chance to evaluate themselves. They can appear for the exam any time any where since they have mobile phones with them. If they want to give test then they will answer to those MCQs and get result whether it is right. Already SMS has been used as many other search engines but it can now be used as the supporting tools of learning or learning assistant.

6.5

Benefits of M-learning:

- Expanding educational opportunities
 - -different range of people
 - -people facing social barrier
- Convenient user centered learning
- Sustainable lifelong learning
- Facilitating skill formation
- Increasing efficiency

To reach the individuals and groups those are historically underserved like girls and women. People who can not go to the center due to distance and handicapped people. Modern society demand constant updating. The educated become obsolete. Lifestyle is changing.

6.6

Tools used in M-learning:

We can take all these devices with us wherever we are and does not require any wired connection even for internet access, since we already have wireless modem.

- Mobile phone
- PDA
- Wireless laptop
- Tablet pc

6.7 Guidelines for selecting the appropriate mobile technology:

We should be focused on exactly what type of service we r expecting to improve our skill, for that improvement what technology should be taken. budget behind that process, etc.

- Start with educational goal: sort of technology required
- Learners' need: how can the technology assist them
- Pick a practical platform
- Choose tools that have been proven to be useful.
- Budget for peripherals, software and maintenance.

Chapter 7:

7.1 Current scenario in Bangladesh :

- ▶ Population: 140 million
- ▶ Formally educated people : 40%
- ▶ Inadequate number of educational institutions, shortage of teachers, financial constraints...
- ▶ Limited opportunities to acquire knowledge.
- ▶ Limited number of internet users.
- ▶ Digital divide between urban and rural areas.

Cost of technological access is too high for majority of the people, internet user is only 18 per 10000 people, digital divide, men women, educated – uneducated exist.

7.2 Types of Learners:

- More or less 80% of total population lives in rural areas.
- Majority of students who are educated but lack of English knowledge.
- Technology know how less or none.
- Some percentage of handicapped students who can not move and take academic certificates.
- Vast deference between rural students and urban students' system of education.

7.3 Mobile Telecommunication Infrastructure:

- Number of mobile phone users in Bangladesh has crossed 15.50 million in august 2006.
- Every 12%people has cellular phone .
- The growth rate of telecom industry is 215%,the 2nd highest in the world.
- Grameen phone,Aktel, CityCell, Banglalink added 1.70million subscriber within 1month.

7.4

Telecommunication infrastructure:

Bangladesh rural telephone operators, licenses, technology and coverage

Operator	License	Technology	Coverage
BTTB (unregulated national operator with monopoly over interconnections and ISD)	<ul style="list-style-type: none"> • National trunk and interconnections • International gateway • PSTN urban 	<ul style="list-style-type: none"> • Mostly fixed and some wireless trunk 	450,000 fixed lines in 70 <i>thanas</i> where major cities and towns are located
Grameen Phone	<ul style="list-style-type: none"> • Cellular nation-wide 	<ul style="list-style-type: none"> • GSM mobile, Fibre optic trunk 	50,000 subscribers in major urban centres and towns along railway corridor; 950 Village Phones
Sheba Telecom	<ul style="list-style-type: none"> • Cellular nation-wide • Rural south PSTN 	<ul style="list-style-type: none"> • GSM mobile, 5 WLL and wireless trunk planned 	12,000 subscribers in Dhaka; 1,500 subscribers across 195 southern rural <i>thanas</i>
BRTA	<ul style="list-style-type: none"> • Rural north PSTN 	<ul style="list-style-type: none"> • WLL and fixed line • Wireless trunk 	20,000 subscribers across 199 northern rural <i>thanas</i>
CityCell	<ul style="list-style-type: none"> • Cellular urban 	<ul style="list-style-type: none"> • Analogue mobile and GSM 	N/A
AkTel	<ul style="list-style-type: none"> • Cellular nation-wide 	<ul style="list-style-type: none"> • GSM mobile 	N/A

Table 1: Telecommunication Infrastructure

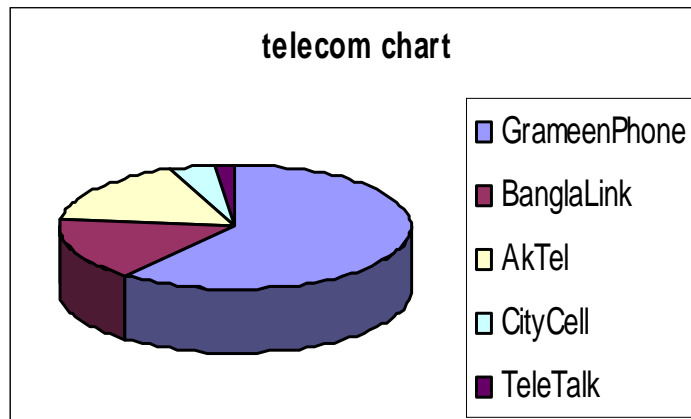


Figure 4: Telecommunication Infrastructure

Five companies in operation — GrameenPhone, AkTel, Banglalink, CityCell and Teletalk — added around 1.70 million customers in August while the number was 14.80 million until July 2006. Another mobile operator -- Warid Telecom is set to enter the market shortly. According to BTRC statistics, the GrameenPhone had reached 9.10 million in August after adding about 1.3 million clients during the month. As a leading operator, it dominates around 62 per cent of the mobile phone market in the country. The second largest operator, AkTel crossed 2.77 million customers in August while the third leading company -- Banglalink reached 2.62 million. The fourth and fifth operators — CityCell and Teletalk crossed 7 lakh and 3.2 lakh clients respectively in August 2006. Recently GrameenPhone has already reached 10 million subscribers.

Grameenphone nearly doubled its subscriber base during the initial years while the growth was much faster during the later years. It ended the inaugural year with 18,000 customers, 30,000 by the end of 1998, 60,000 in 1999, 193,000 in 2000, 471,000 in 2001, 775,000 in 2002, 1.16 million in 2003, 2.4 million in 2004 and it ended 2005 with 5.5 million customers.

Year	Number of subscribers
1998	30000
1999	60000
2000	193000
2001	471000
2002	775000
2003	1160000
2004	2400000
2005	5500000
2006	10000000

Table 2: grameen phone subscribers

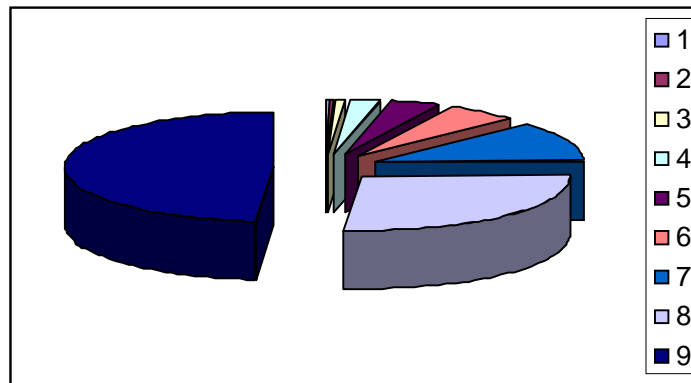


Figure 5: Grameen phone statistics

7.5

Initiatives Taken:

- Short message service (SMS) cost has reduced down to the minimal rate.
- Wireless modem / GPRS introduced in mobile devices (mobile phone).
- GPS used for location detection.
- Fiber optics will soon be applicable in our country.

Few years ago Bangladesh did not own technologies or the infrastructure to offer and produce such technology. The cost of access was too high for the majority of the population .However; steps are being taken to overcome these challenges. The telecom authority of Bangladesh (BTRC) has liberalized the telecom sector to a very large extent. Various telecom companies like GrameenPhone, CityCell, AkTel, Banglalink provides various facilities for various packages. Grameen phone for example has already opened “Djuice” package concentrating on especially young generations and provides some extra facilities for them. In this way there can be another offer for the students with the learning assistant. Since all the telecom companies have already launched internet facilities in mobile phones through GPRS, EDGE etc, so learning become easier through cell phone. Short message service has been reduced to the minimal rate.

Chapter 8:

8.1 Mobile Phones as Supporting Tools:

It should be clear that mobile device especially phones can not be the alternative to traditional learning. Here comes the main drawback of it. Although telecommunication technology has improved to very large extent and through GPRS, EDGE, GPS still mobile telephony can not be the alternative to traditional class room learning or alternative to e-learning since it has limited storage memory, too small screen size. Especially in our country like Bangladesh as an under developed country does not have too fast technology to maintain two way communication between teacher and student without any intermittent disconnection. But mobile devices especially phones can help as successful helping hand to new generations. Young students can not use it for dissemination of knowledge but can take it as the helping assistance to enhance their knowledge.

8.2

Effective use of M-learning:

- It works as a supporting tool, mostly as a self evaluation tool.
- Can not be the alternative to traditional learning rather be the helping hand to traditional learning.
- M-learning can not be used in dissemination of knowledge.

It should be clear in what way M-learning can be implemented in our country. In some developed country M-learning has been introduced as medium between teacher and student while doing some project work or class assignments. Students get information of some prerequisites of reports, deadline to submit report etc. some country like our neighboring country India introduced m-learning as the mentor of English learning ,since most of South Asian students lack of English proficiency.

But from the aspect of Bangladesh it is not possible to make m-learning as the alternative to traditional learning. But it can be one of the biggest helping hand for traditional learning. Though our telecommunication companies have been expanded to a large extend still learning needs some other technological prerequisites to complete the total learning process like high tech mobile phones, PDAs, mp4, palmtops etc which are expensive and sometimes incomplete for the completion of the learning.

m-learning can be used as the self evaluation tool for the students who don't have enough opportunities to manage to go any coaching centers for lack of money, who are unable to move and in the rural areas where schools and colleges are very far from house. It can not be the alternative since technology is not enough updated in our country. it is mostly used for the people who r unable to move, deprived or under served, handicapped. it is for their practice to their knowledge.

8.3

Benefits:

Poor people those who don't have ability to continue to go to school or college they can self evaluate themselves through this question bank by sending and receiving SMS (*) we hardly think of handicapped people who struggle lot to get education. In our country they don't have such facilities. They can be helping themselves by mobile phone.

Mobile learning increases the access of learning and education.

Does not require electricity which is one of the big crises in developing countries.

It will not be used only for communication and fun. This can divert students' concentration from only fun or communication tools to education and user friendly tools.

8.3.1

Students

In our country may be due to some improper system and planning students afraid of sitting for any examination. If we can provide those students with the facility like "mobile devices (especially mobile phone) as self evaluation tools or supporting tools for learning", students most of who have this cheaper device can help themselves to prepare before facing the admissions.

- Self evaluation leads to building confidence. Students who r deprived and afraid of giving examination can prepare themselves more confidently by evaluating as many times as they want.
- Great helping hand for the poor students, students who can not afford money for coaching centers or group exams can evaluate themselves inside their house.
- Help handicapped people/student. There are small numbers of this type of students. But if m-learning can be implemented then this amount will

rapidly increased since many of handicapped students give up due to lack of opportunity.

- No extra training required to operate mobile devices which saves cost as well as time and thus attract students more.

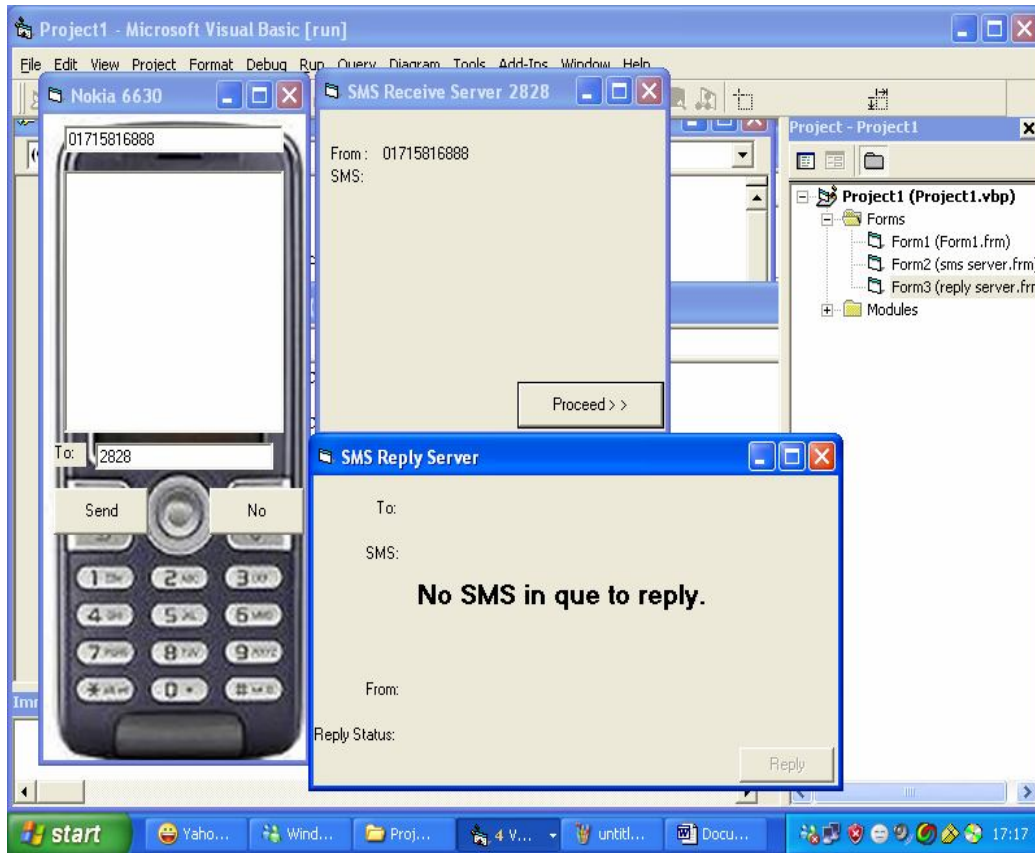
8.3.2 Telecommunication companies:

- More subscribers-
Reduce access fee
- Provide as an extra service for promotion

Chapter 9

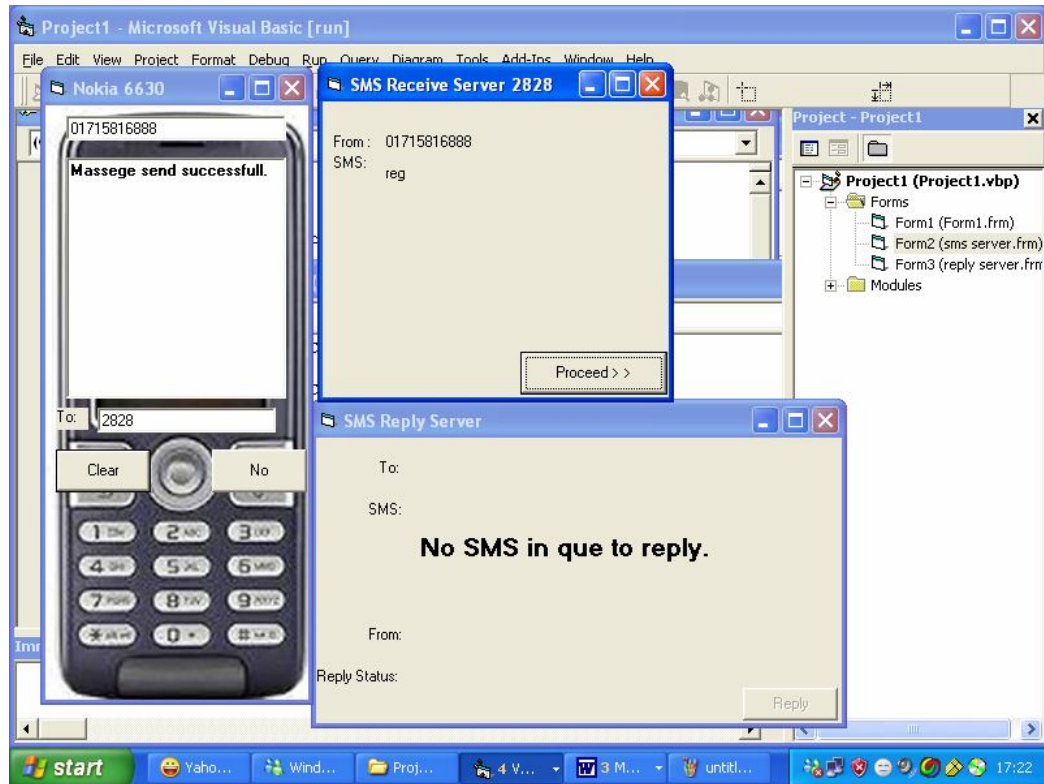
Prototype Snap Shots

In this demonstration , I have attached some snapshots regarding the using method of mobile as a learning tool. Here it is mentioned how to register , proceed and end up with the short message services. At least 3 SMS are needed to complete the process. Here in my proto type I completed the total process with 7 SMS s , of those 5 SMS contain 5 question regarding SSC students for the topic of physics.



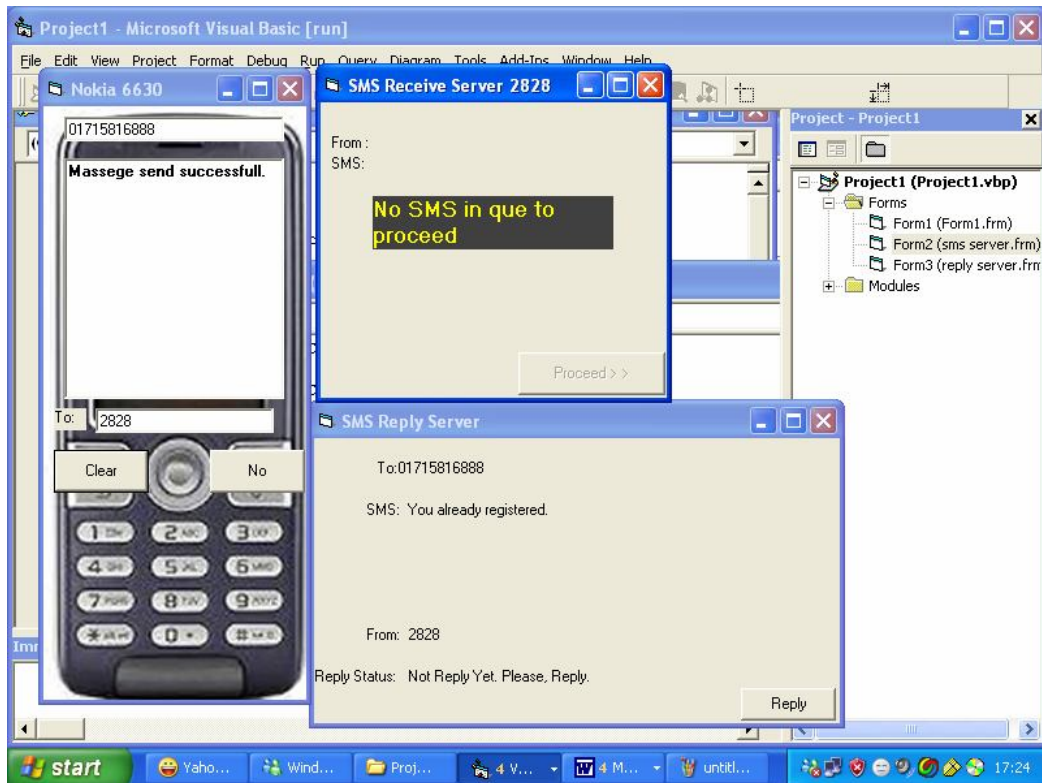
Shot: 1

This is the initial state of the total process. There are two servers. Receiver server and reply server. Receiver server takes the information from mobile phone and then send to the reply server which replies by sending questions and giving answers.



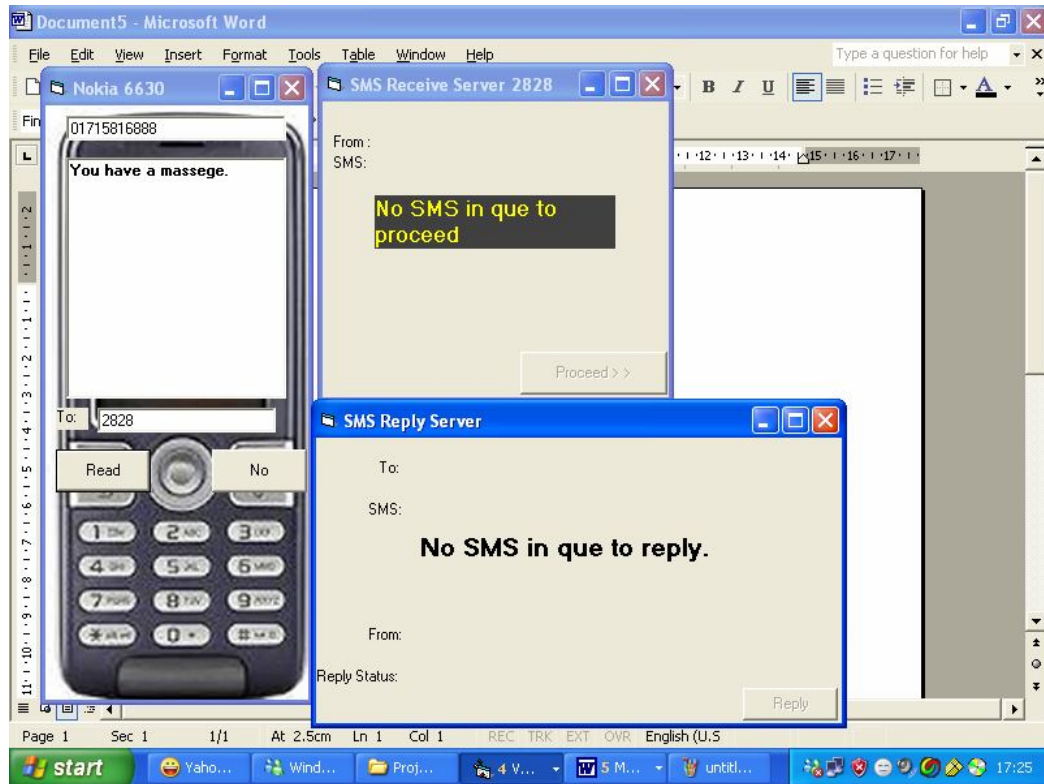
Shot 2:

In the second step user has to register his number for getting the service. If the user is already registered to that number then a message will appear regarding that information. Then he/she does not need to register again for any further usage from that number.



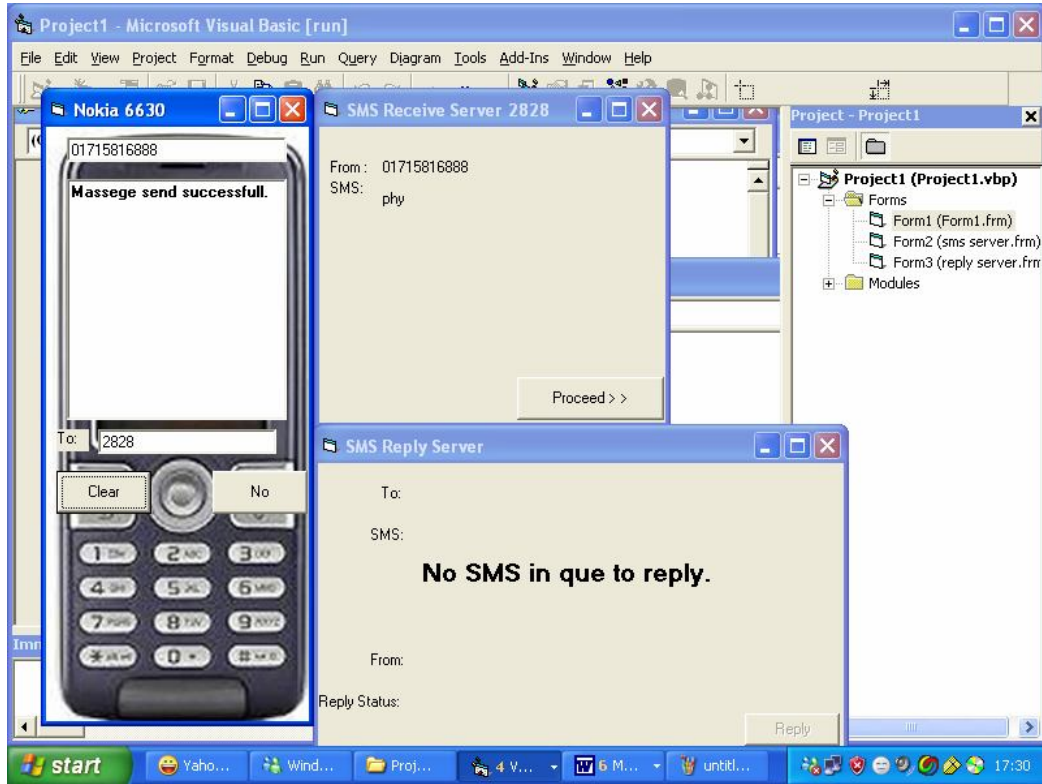
Shot 3:

This is how the reply server shows the information if user is registered already. If we click on the “reply ” button then the mobile phone will receive an SMS with that message.



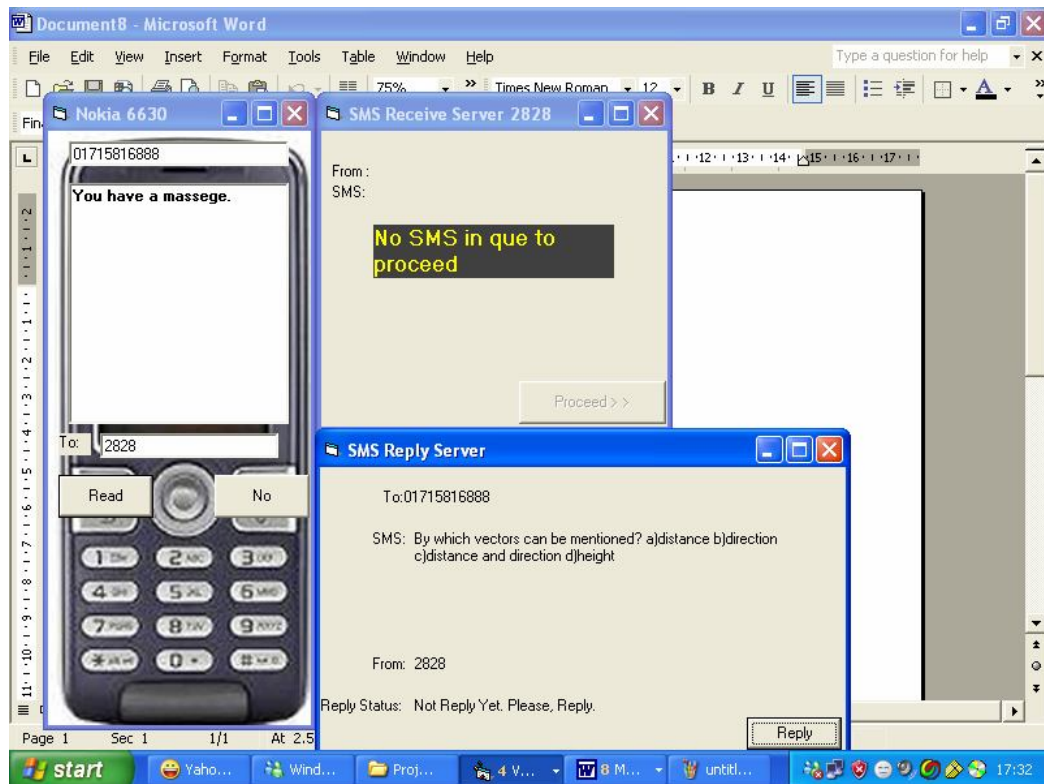
Shot 4:

Mobile has got the SMS with the message that the user is registered already and ready to proceed.



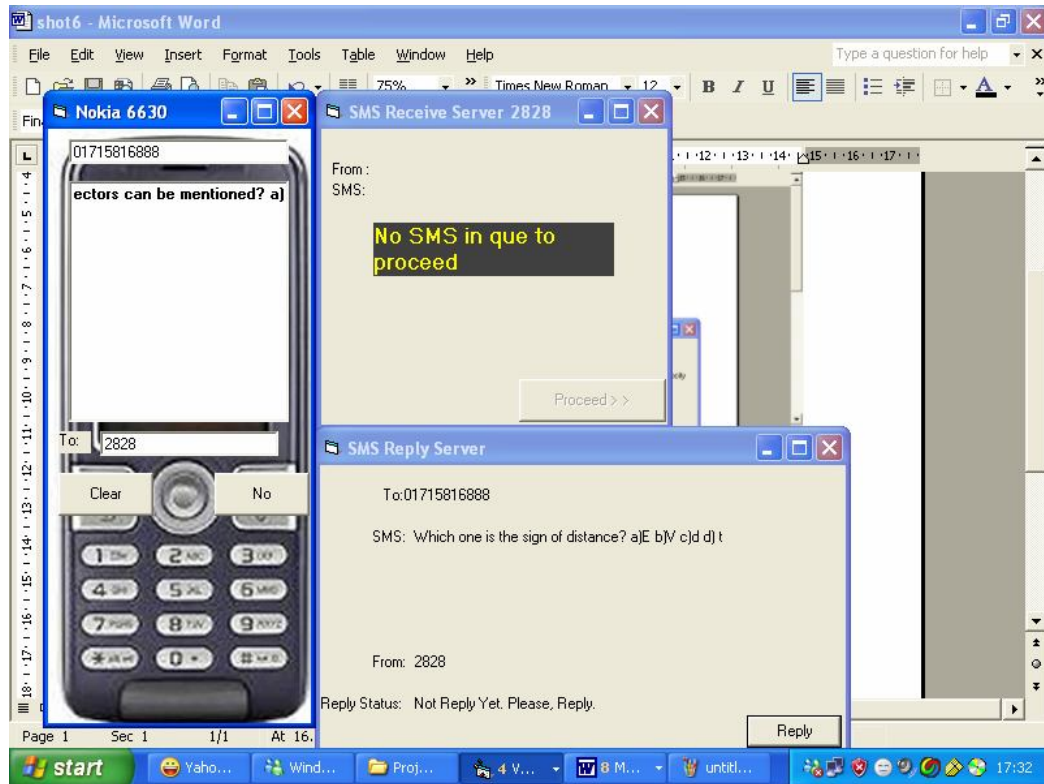
Shot 5:

Now the user will choose which subject does he want to give the test say for example, physics, biology... in this case I have chosen the subject physics .for the access user has to send another SMS written "phy " to the server so that the server can present the data base for physics.



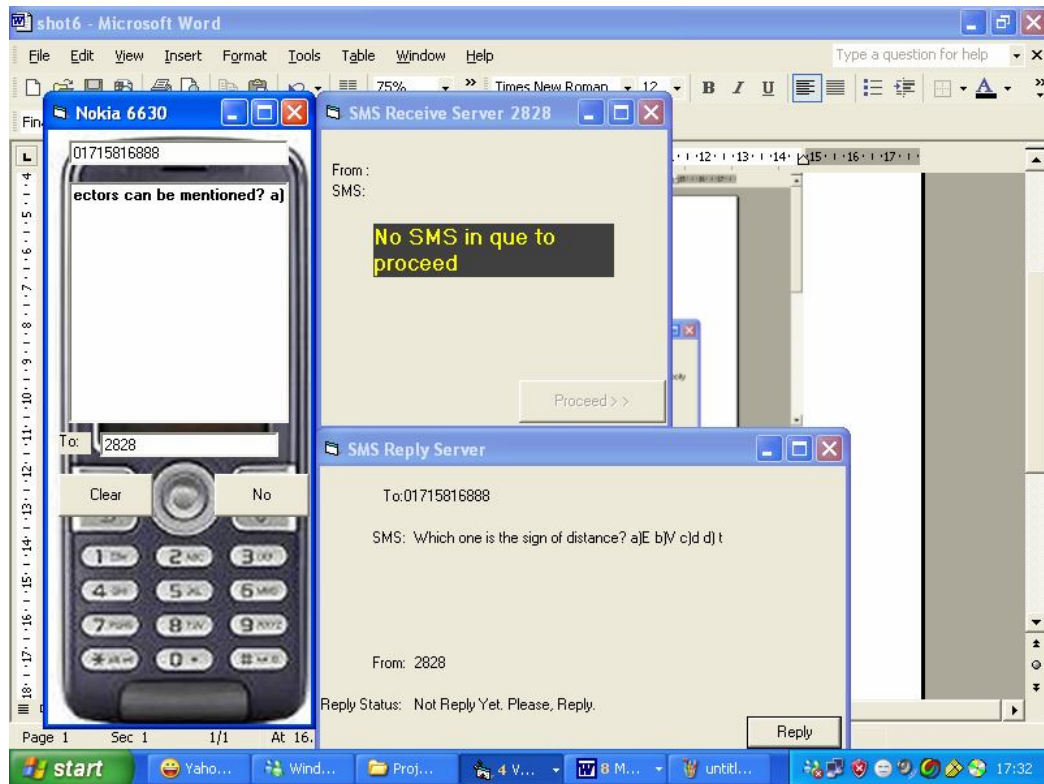
Shot 6:

After entering the data base for physics by turn all the questions will appear on the reply server screen. When click on the reply button, mobile will get the SMS. Here mobile phone is showing that it has got SMS.



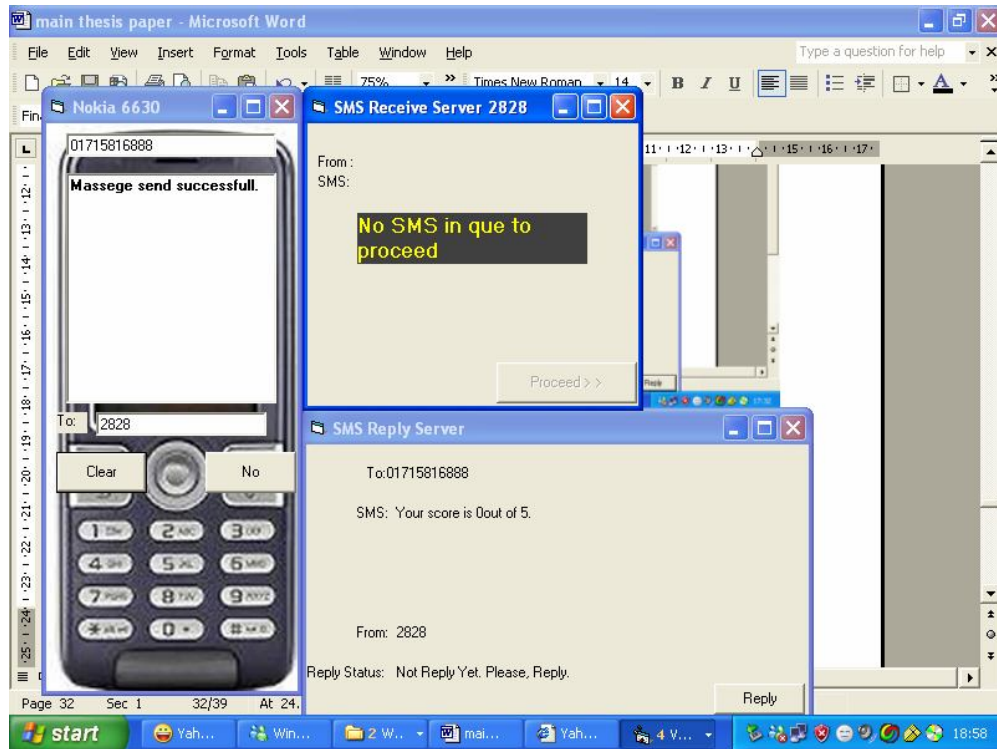
Shot 7:

Here mobile screen is showing the questions that have been asked and the reply server already received another question and ready to be replied. In this way total 5 questions will be shown. Each time the user registered the 5 questions will be come by turns.



Shot 8:

After all the questions has been asked, then user then answer to all the questions in one SMS. If user gets confused then he can go back to those SMS with questions and can then answer.



Shot 9:

After sending all the answers the user will get the total score he earned out of the exam. This is how a user can get help from this service and can be confident by practicing more with the mobile phones. He can attempt as many times as he want. each time new questions will come randomly so that they can learn more.

Chapter 10

9.1 Problems:

The main problem in students of our country is lack of English proficiency and content development. Only about 40% of people are educated in our country mostly that are very inefficient in understanding English, especially from bangla medium schools and colleges. So when they come up with English platform in mobile the SSC or HSC level students and rural students may not understand properly.

Cost can be a big problem issue, if the present SMS cost does not reduce for the learning package.

Mobile screen sizes are too small to gather all questions in one SMS (160 characters).

Since most of the rural educated students have lack of English proficiency it can be sometimes difficult for them to understand the English terms . Mobile phone has limited storage, so they can not access as mush as they want. They can only access within that limitations. Since it is operated through battery. They should be concerned about the charge.

9.2 Suggestion

Content can be adapted to the local language rather than in international language. If image or icons can be added then there should not be any problem in understanding even if it is in English platform.

Cost of SMS must be reduced to the minimum expense. Since it will take more than one , at least 3 SMS to complete the evaluating process so the cost should be trivial for this special package so that the user do not need to expend extra money for the service.

9.3

Conclusions

Though there are some technological and learning challenges in mobile learning for our country, these can be eliminated. We have some better solutions over those problems, and steps are already being taken .the contents can be adapted to the language and culture of Bangladesh .Touch can be primary input and images and voice can be that output. Icon graphics may be used as do in simputer. Cost can incredibly be reduced for this particular package of young students.

Periodically databank can be updated for better practices. Some reward or extra facility or certificate can be given for the students who regularly keep practising. This is how the young generation can get rid of their lack of confidence and handicapped students who can not go and communicate directly to others get the heavenly opportunity to enrich them with the light of knowledge.

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