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## MOBILE LEARNING: THE TECH'NO'S AND THE TECH'KNOW'S

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**ABSTRACT:**

Older adults often tend to be technophobic, preferring to steer clear of electronic gadgets over having to deal with a machine with confusing software. This undeniably affects their daily life in terms of communication, business processes, employability prospects and even household chores. By the same token, it also affects their ability to learn with the aid of electronic gadgets. Taking this position of older adults into account, a study comprising 43 adult learners was undertaken with a view to contrast the level of technological comfort between young and older adults. It was found that older adults were indeed less at ease with technology and preferred to allow someone younger to do technology driven tasks for them. Left to their own resources, they preferred to do things the way they always have (writing letters instead of an email for instance) over grappling with computers or mobiles. The pedagogical implication of this study is that while electronic gadgets are great learning tools, their use across the board is not feasible until the older learner comprises a generation that was not raised on technology. Learner limitations need to be taken into account when designing courses that require the use of modern electronic gadgets.

**KEYWORDS :** *mobile learning, older adults, technology, technophobia, learner limitations.*

**INTRODUCTION:**

In India, the computer revolution can be said to have set in only in the mid to late '90s. This was when people started looking at computers (the desktop version) as a useful machine around the house. Until then, the use of computers was largely confined to offices and large businesses. Mobile phones started becoming popular and affordable almost a decade later. Since then, of course, the electronic gadget market has practically exploded and the use of laptops, mobiles, mp3 players, smart TVs, etc. has gone up exponentially. Based on the these circumstances, it would be safe to surmise that since the profile of early computer users in India was mostly young adults two decades ago, the same generation, now 40 or thereabouts, is where the comfort level with technology falters. It is this divide that this study aims to explore. Based on the findings, the matter of the efficacy of electronic gadgets in teaching older adults is discussed. (Of course, the age of 40 is no precise watershed, but it is a good indicator, and it is this indicator that has been taken into account for the purpose of this study.)

**Review of Literature**

Blank & White (1984); Gunter, Gunter, & Wiens (1998), Jay (1981), Reznich (1996), and Yang (1996) have all said that anxiety about interactions with computers results in a negative attitude, such as fear and avoidance. Ultimately, rather than benefiting from technology, sufferers of technophobia see themselves as victims of

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technology. Czaja and Sharit (1993) claim that with growing age, people are more prone to making mistakes in computer-related tasks. Amanda (1997) shows that older adults have problems with and do not use new forms of automated technology such as ATMs, video cassette recorders and computers, despite a strong desire to do so. According to Harrington, McElroy, & Morrow (1990), Heinssen, Glass, & Knight, (1987), Rachman (1998), Todman (2000), Torkzadeh & Angula (1992); Weil & Rosen, (1995), people suffering from computer phobia often hold a negative attitude toward computers, which in turn eventually causes avoidance of computers. Laguna & Babcock (1997) too indicate that younger people are less likely to suffer from computer phobia. Similarly, Chen's (2002) study involving elementary school teachers says that it is evidenced that computer phobia is negatively associated with computer self-efficacy and that younger teachers tended to have lower level of computer phobia and higher computer self-efficacy.

## Research Methodology

This study was conducted with the help of the survey method and the empirical method, as it involves the exploration of participants 'level of anxiety during the use of technology and their attitudes and thoughts about technology. A questionnaire based on the Computer Anxiety Rating Scale, the Computer Thoughts Survey Scale and the General Attitudes toward Computers Scale was prepared. In addition, there was also a smaller section which had participants describe the frequency with which they used technology on a daily basis. Finally, three technology-based tasks were assigned to the participants and the time taken by each person was recorded.

Data was collected from 43 participants of varying age and profession. All participants werestudents of institutes that teach spoken English. One evening batch was chosen from three different institutes and all students in it were made part of the study. The rationale behind choosing spoken English classes was that i) students of such institutes are generally looking to better their language skills for enhanced employability and are thus active participants in a learning environment; and ii) being adult learners and having themselves made the choice to learn a new language, are fairly motivated.

## The Questionnaire

The questionnaire was divided into five sections. The first was for personal details like age and profession. The second was an attempt to find out the pattern of usage of technology by individual participants. It also served to observe the self-perception of participants with regard to technology. The section included the following questions:

**Which of these personal gadgets do you own?**
1. Mobile phone
2. Tablet PC
3. Laptop
4. MP3 Player

**2. Which of these do you have at home?**
1. Microwave Oven
2. Smart TV
3. DVD/BluRay Player
4. Music System

**3. If you need to buy a new gadget you would**
1. Search for options and select the one that best suits you
2. Ask someone younger to help you find the best one

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3.  Tell the assistant at the store what your needs are and allow him/her to find the right one

## 4. If you need to program a gadget at home you
1.  Always do it yourself
2.  Only do it sometimes as you hate doing it
3.  Avoid it as far as possible because it is confusing
4.  Let your friends/children/grandchildren do it because they do it faster

## 5. When you need to program any device you
1.  Enjoy the experience because you can explore possibilities
2.  Don't enjoy it because it is difficult to figure out
3.  Try to do without it because you are unable to program it
4.  Are filled with anxiety as you might ruin the device

Section three was based on the Computer Anxiety Rating Scale, more commonly known as CARS. The CARS is a 20-item scale in a 5-point Likert format. Respondents are asked to express how much anxiety they experience 'at this point in time 'when faced with computers. The values are fixed thus: 1 = 'not at all', 2 = 'a little', 3 = 'a fair amount', 4 = 'much 'and 5 = 'very much'. Rosen and Weil (1992) state that the questionnaire deals with: (1) anxiety related to the machines themselves; (2) their role in society; (3) computer programming; (4) computer use; and (5) problems with computers and technology. Rosen and Weil set the norm for computer phobia as follows: no computer phobia, 20–41; low computer phobia, 42–49; moderate to high computer phobia, 50–100. Since only 10 items were chosen from the scale for this study, all values were doubled to be able to arrive at the prescribed ranges. The ten items chosen were:

1.  Applying for a job that requires computer knowledge
2.  Learning to write a computer program
3.  Watching a movie about an intelligent computer
4.  Reading a computer manual
5.  Getting an 'error 'message on the computer
6.  Having to buy a new computer
7.  Attending a computer class
8.  Having to send an email
9.  Downloading a computer application
10. Filing away everything on a computer

Based on the Computer Thoughts Survey Scale or CTS, the fourth section dealt with what the respondents thought when using computers. Like CARS, the CTS is also a 20-item scale in a 5- point Likert format. In this questionnaire, 11 items are phrased in the negative direction while 9 are phrased in the positive. Respondents are asked to express how frequently they think the thoughts mentioned. The scores are measured thus: 1 = 'not at all', 2 = 'a little', 3 = 'a fair amount', 4 = 'often 'and 5 = 'very often'. It contains three types of questions: Negative Computer Cognitions, Positive Computer Learning Cognitions and Computer Enjoyment. Rosen and Weil have established computer phobia norms thus: no computer phobia, 69–100; low computer phobia, 61– 68; moderate to high computer phobia, 20–60. Here, too, only ten questions were included and values of answers doubled. The questions were:

1.  I am going to make a mistake.
2.  Thiswillbefun.
3.  I enjoy learning about this.

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4.   People will notice if I make a mistake.

5.   This will shorten my work.

6.   I feel confused.

7.   I hate this machine.

8.   What if I hit the wrong button?

9.   I won't be able to get the computer to do what I want.

10.  This is really interesting.

Finally, in the fifth section, multiple choice questions were posed on the general attitudes of participants towards computers and computer technology in general. Respondents were asked to choose between 'Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree 'to best describe their attitude towards the given statements. This section was based on General Attitudes Toward Computers Scale (GATC-C). While this section only allows an estimate of what participants thought, and does not broach anxiety directly, answers are usually good pointers to the comfort level of respondents with computer technology. As such, this section was only used as a reinforcement of the findings of the earlier two tests. The statements were as follows:

1.   Computers can save a lot of work.

2.   It takes a good background of math to learn computers.

3.   Computer knowledge is a must for getting a good job.

4.   Men are better at computers than women.

5.   Use of computers can cause physical health problems.

6.   Computers are taking jobs away from people.

7.   Computers can never be smarter than people.

8.   There is an overemphasis on Computer education these days.

9.   Computers create new jobs for people.

10.  Computers prepare students for the future.

Since participants were students of ESL, it would have been unreasonable to expect them to understand all questions and respond correctly. To facilitate their comprehension, all questions were translated in Marathi and Hindi before the participants had to fill out the questionnaire.

## The Tasks

Since the only gadget carried to class by all participants was a mobile phone, tasks were designed accordingly. All tasks were to be performed in succession, regardless of order.

Task I: In preparation, each participant was asked to save phone numbers of any three others in the same class. Then, a couple of lines – Hi! Sending you my latest photos. Hope you like them (smiley)! – were written on the board. For the task, participants were asked to click three photos on the spot and email these to the three numbers taken down earlier, with the given lines going in the body of the email and the photos going as attachments.

Task II: Participants were asked to form a 'group 'of 15 people on their phones. The condition was that all names should begin with a separate letter of the alphabet.

Task III: The third task was to create a Facebook account and post any YouTube video of little kids being funny.

## Findings and Discussion:

**Section II:** Analyzing the answers to Section II, it was found that all participants had mobile phones.In second place were laptops, followed by microwave ovens and then tablet PCs. Smart TVs, Music Systems and DVD Players came next, in that order. Only five people had MP3 Players. 36 respondents (81%) owned at least four of the eight gadgets. Not a single respondent owned less than three gadgets. It can safely be concluded that all

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participants had reasonable exposure to technology, a factor necessary in ascertaining the level of anxiety faced by them.

**Section III:** In section III, the findings were quite in consonance with various studies exploring the relationship between age and computer anxiety. It was found that as a general trend, computer anxiety rose as the age of participants went up.

In all, there were 15 participants who were under the age of 40 in this study. Of these, only 2 (13%) displayed signs of moderate to high computer anxiety. Significantly, one of them was unemployed at the age of 32. Of the remaining 28 participants, only 3 (10.7%) showed signs of low computer anxiety. Here, too, profession seems to have a role to play. A 61 year-old participant, whose anxiety score was just 26, was a retired engineer from the Electricity Board. Another participant, aged 46, was an architect. The only exception was a 48 year-old housewife whose anxiety score came to just 24. It appears quite safe to conclude from the CARS test that age has a lot to do with computer anxiety. The relation is direct; higher the age, bigger the anxiety. The graph below shows this trend very vividly.
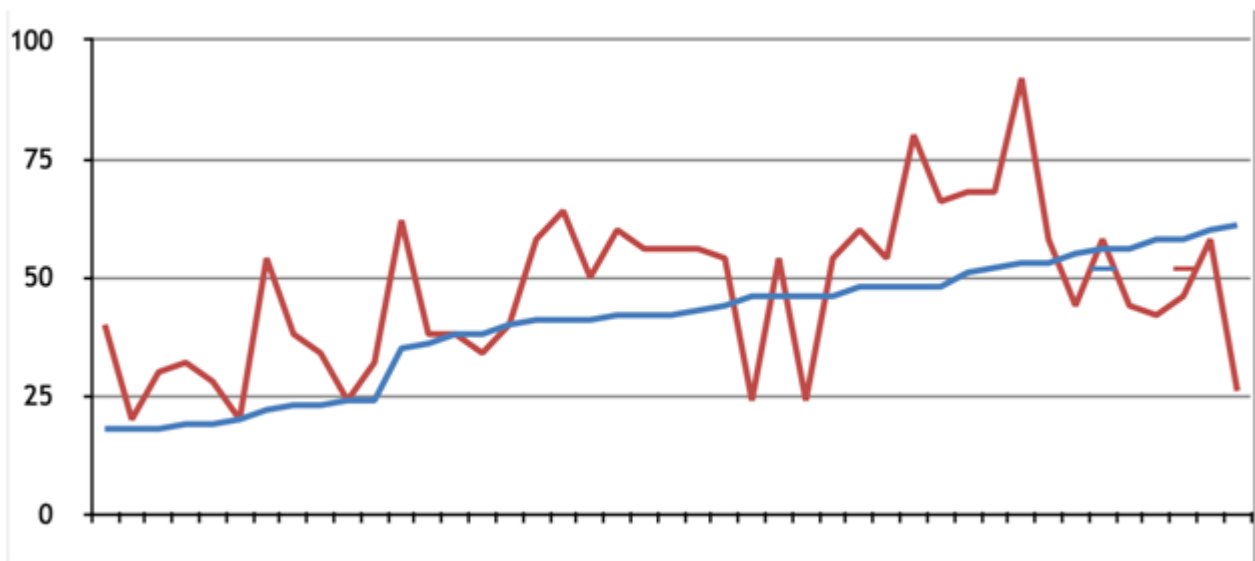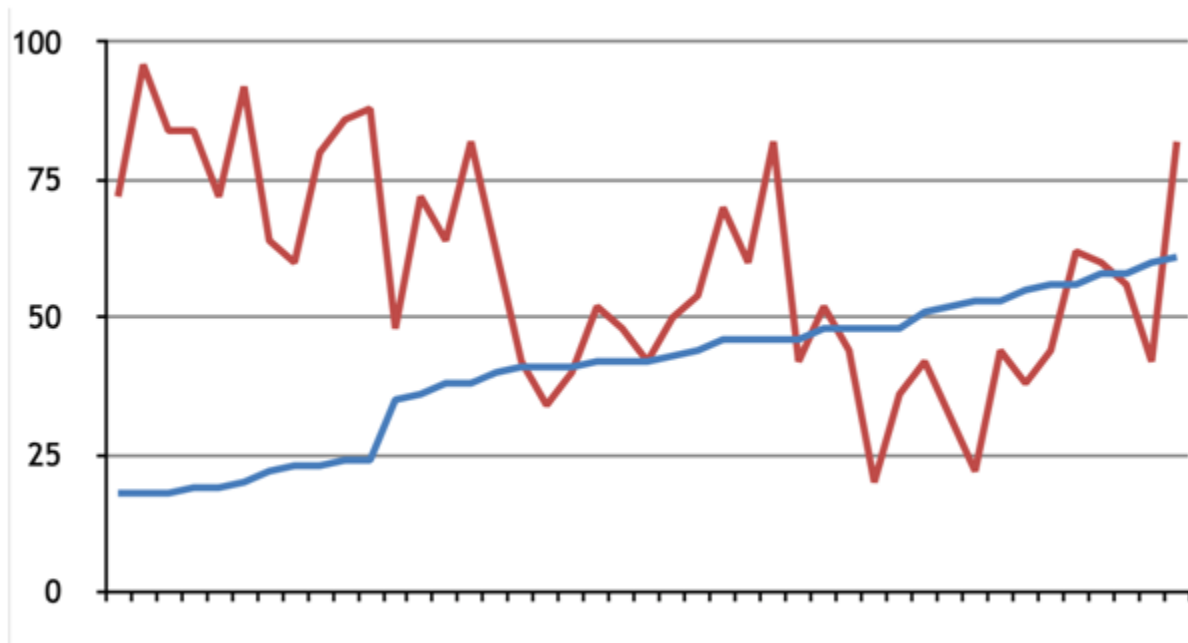


*Fig. 1.1: CARS – The relationship between age and computer anxiety*
*(Series 1 – Age; Series 2 – Level of Computer Anxiety)*

**Section IV:** Section IV, the Computer Thoughts Survey, threw up results that were comparable with those of Section III. A high score in this questionnaire denotes a low comfort level with technology. Of the 15 participants who were under the age of 40, two displayed signs of high discomfort while two others showed moderate comfort levels. A good fourth of the group showed high or moderate discomfort. However, of the two whose comfort levels were low, one was the unemployed 32 year- old with a level of 48. The other, with a level of 60, is a border-line case. In the moderate comfort zone, both participants showed a comfort level of 64.

In the group above age 40, once again, only 3 participants (10.7%) posted comfort levels at 70 or above. Of these, the participants who exhibited maximum comfort with technology at a shared level of 82 were once again the retired engineer and the 48 year-old housewife. The third exception, at 62, was a teacher in the moderate zone.

Once again, the findings make it reasonable to conclude that computer phobia or computer anxiety is directly proportional to age. As age goes up, so does anxiety.

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**Fig. 1.2: CTS – The relationship between age and technology comfort levels**
**(Series 1 – Age; Series 2 – Level of comfort)**

**Section V:** As pointed out earlier, this section did not deal with anxiety directly. However, it was found that the same people who displayed signs of high anxiety were also the ones who believed in the myth that it takes sound knowledge of math to be able to operate a computer and disagreed or strongly disagreed with statements like 'computers can save a lot of time'. They were also the people who agreed or strongly agreed that there is an overemphasis on computer education in schools and colleges these days. Of course, a high majority of these respondents fell in the 40+ age group. On the whole, the larger picture reinforced earlier findings wherein age was directly proportional to anxiety.

**Tasks:** This was the most interesting section where young adults were seen to be much swifter than their older counterparts. Not surprisingly, the first person to complete all three tasks was a 20 year old student, completing all tasks in slightly under four minutes. Most participants under the age of 24 were able to complete them in 5-6 minutes. One participant in this age group, however, could not complete the Facebook task at all and gave up, while another was unable to attach his photos in the email. Only 4 participants in the 40+ group were able to complete the task in under 6 minutes. Significantly, 5 participants in this group could not perform a single task, while 1 failed at two tasks and another 6 failed in one task. Taken together, it can be interpreted to say that nearly 50% of all respondents in the 40+ age group failed at at least one task. This activity, too, reinforced the findings of CARS and CTS.

**Conclusion**

While it is not entirely unusual to find people over 40 at ease with computer technology, it is not entirely common. Also, if people in their forties or above do not face anxiety when faced with a computer, their ease usually comes about because their profession demands it. This study may be considered a reinforcement of all studies quoted in the review section where research has established a direct relationship between age and

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technophobia. Since so much emphasis is being laid on e-learning today, it is necessary to take pause and take learner limitations into account before designing a course. Electronic gadgets are undoubtedly great learning tools; however, their use in a course may actually prove counterproductive for older adults who do not enjoy the same command over technology as their younger counterparts. A possible solution could be the introduction of a short module familiarizing older learners with the gadgets of choice for the course; however, in the absence of such modules, the use of technology in teaching older adults should be moderated by concerns regarding their comfort level with technology.

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