Concise paper

Ostrich or Eager Beaver: to Embrace or Reject New Tecchnologies

Karen Phillips
Bay of Plenty Polytechnic
Tauranga, New Zealand
karen.phillips@boppoly.ac.nz

ABSTRACT

This paper starts the process of identifying personal characteristics that make it more or less likely that an individual will engage with new technology. This initial stage used a postal questionnaire to discover what motivated people to enrol in Community Computing programmes and how it affected their life. Key findings were that some people had a specific need, such as communication with family overseas or helping children with school work, while others needed to prove to themselves that they could overcome the perceived barrier presented by computers. The majority said the experience had increased their enjoyment of using computers and many described how the increase in confidence had enabled them to do new things. The findings of this study will be explored in greater depth when some respondents are interviewed. In turn, these results will help formulate questions for people who cannot use computers and who have not come forward to receive training. Finally, it is hoped to offer some solutions as to how these people can be encouraged and supported to become part of the digital age.

1. INTRODUCTION

Whenever a new technology is developed some greet it with enthusiasm, others do not. Lack of opportunity is a barrier for many: insufficient time, money, knowledge or skills are factors that make it difficult to access new technology. However, even without the practical barriers, there are those that still resist. This paper is the beginning of an in-depth study of psychological characteristics that differentiate ostriches from eager beavers.

The extent to which people resist new technology varies greatly. Since the Industrial Revolution, there have been "Luddites" - people who understand the new technology and its potential benefits but believe that its introduction would be detrimental. "Technophobes" have a generalised fear of technology, seeing it as "an evil element which is taking society to a process of dehumanization, not recognizing any benefit that it might bring to human life" (Santana, 1997, p1).

As well as the technophobes, there are those whose fear is more personal. Some fear what they cannot understand or feel alienated by their perceived inability to embrace the new technology. People who cannot understand how an aeroplane stays in the sky may well fear flying until there is sufficient evidence that it is safe. Equally, there are those who fear they would be more likely to develop cancer if they spent time working next to a computer monitor. It is outside the scope of this paper to evaluate these fears.

People are more likely to repeat behaviour that results in a positive experience and avoid behaviour that leads to a negative experience (Skinner, 1953). Failure is clearly negative and people who have a history of failure in learning situations are less likely to want to return to a learning environment. However, some do return. What enables them to overcome their trepidation?

Frustration (being thwarted from achieving an intended goal) is another negative experience. According to Miller (1941) frustration often leads to aggression. This aggression can be manifested externally i.e. towards objects or other people or inwardly to produce low self-esteem. Failure can lead us to a state of learned helplessness that can block progress (Seligman, 1975). Using new technology is frequently frustrating and failure to succeed with one application can become generalised to all unfamiliar technologies.

Those who overcome their learned fear of technology are clearly motivated to do so. This research will look at the nature of those driving

TABLE A: NUMBERS OF RESPONDENTS BY AGE AND GENDER

	MALE	FEMALE	NO RESPONSE	TOTAL	
AGE GROUP					
16 – 24	0	1	0	1	
25 – 44	7	30	0	37	
45 – 64	11	42	0	53	
65 and over	22	23	1	46	
No response	0	0	4	4	
TOTAL		40	96	4	141

TABLE B: SUMMARY OF EMPLOYMENT STATUS

Full-time employment	27.0%
Part-time employment	28.4%
Full-time education	1.4%
Part-time education	3.5%
Care-giver	6.4%
Unemployed and seeking work	1.4%
Retired	29.1%
No response	3.5%

forces. The New Zealand Government is determined that its citizens should enjoy the benefits that ICT can bring and has outlined its plans for implementation in its Digital Strategy.

> *"To this end, it has implemented a wide range of ICT-related initiatives, including the roll-out of e-government, promotion of e-commerce to business, ICT strategies for health, education and national heritage collections, community ICT initiatives, and legislative changes in telecommunications and e-transactions." (New Zealand Draft Digital Strategy, p2)*

This research began by focussing on people who chose to enrol in Community Computing at the Bay of Plenty Polytechnic in order to find out who they are, why they enrolled and how the programme changed their life and attitude to computers. It is hopefully of value for those wanting to set up or improve community computing to help fulfil the objectives of the New Zealand Digital Strategy.

2. METHODOLOGY

A postal questionnaire was distributed to 500 people chosen at random from those who had enrolled in one or more of Community Computing programmes at least six months previously. An incentive (cinema tickets) was offered to encourage early response.

3. RESULTS

141 (28%) valid responses were returned with a further 19 returned unanswered.

14.9% of respondents identified as Maori with a further 70.9% identifying as NZ European/ Pakeha. Of the remaining 20 respondents, 10 gave no answer and 10 answered "other". Only 2 respondents did not have English as their first language.

Previous educational achievement was varied, with 17.7% having no qualifications and 10.6% having a University degree.

While the above sample would not be representative of the population as a whole, it is typical of Community Computing attendees.

TABLE C: DAILY COMPUTER USAGE BEFORE AND AFTER TRAINING

TASK	BEFORE	AFTER	% CHANGE
Use for any purpose	72	105	+45.83
Send or read emails	70	97	+38.57
Search internet	24	41	+70.83

TABLE D: AT LEAST MONTHLY USAGE OF COMPUTER BEFORE AND AFTER TRAINING

TASK	BEFORE	AFTER	% CHANGE
Buy goods online	5	12	+140
Online banking	31	46	+48.39
Pay Power Bill online	11	20	+81.82

The majority of respondents (78%) owned a computer before they started their programme with a further 15 (10.6%) now owning one. The following table summarises the change in frequency of computer use.

The next questions attempted to discover what motivated people to enrol. 46.8% of respondents said they had no specific aim in enrolling in Community Computing. Of those who did, the desire to use the internet and email formed the largest group (25.53%). Themes that emerged from other comments provided were communication with family members, supporting children with schoolwork and increasing self-confidence. The final group had been required to enrol for the ICDL by their employer. They had a much more negative attitude to their programme than those who had enrolled voluntarily.

When asked about what changes attendance at Community Computing had effected, 62.4% said they now enjoy using computers more, 32.6% said they felt the same and only 2.8% said they disliked computers more. 21.3% felt that attendance on Community Computing had brought about a major change in their everyday life. Of the 31 people who added a written comment, 8 said they felt more confident, 6 had started paid employment or voluntary work, 4 mentioned improved communication with family, 3 had started using the web rather than books to find information and one person said "as a retiree, this has opened up a whole new world in the 21st century".

When asked about significant aspects of Community Computing, content was most important (66.7%). 70.2% of people said that they had been encouraged to enrol because the programme was free of charge, although 13.5% were prepared to pay up to $100. 38.3% wanted to study within 5kms of their home with a further 17.7% wanting to study online and 17.7% wanting to study at home. 68.8% of respondents liked the flexible learning scenario and 54.6% specifically liked the self-paced approach. However, 29.8% of people would like to attend taught sessions. Whilst this endorses the current programme delivery method, there was sufficient demand for alternatives (such as learning at home, taught sessions etc) that consideration should be given to why people stated these preferences and how they might be made possible.

Of the 28 people who listed other topics that would motivate them to re-enrol, the most popular request was for digital photography (9 responses). Understanding computer jargon, repairing minor faults and using a scanner were each mentioned by 3 people. Two people commented that they would only return to Community Computing if the sessions were taught or if they could be assured of help more quickly when needed. These are issues that will be explored in the next stage of this research.

To ascertain whether inaccessibility of shops, banks etc was a factor in learning to use a computer, people were asked how far from a town they lived. 27% lived within walking distance, 18.4% could get to town by public transport in

less than 20 minutes and 47.5% lived within 20 minutes driving time. It would seem that difficulty in accessing town centre facilities was not an issue for people attending Community Computing. Later research will include those people who have not attended Community Computing. It is possible that for some of these the location of the training is as big a barrier as access to town centre facilities.

Another possible motivator in seeking computer training might have been lack of social interaction. 13.5% of respondents lived alone with 77.3% living with family and 5% with flatmates. 28.4% of respondents did not participate with clubs or societies with the others spending at least 2 hours a week at a club. Lack of social interaction would not appear to have been an issue. This question will be re-addressed with those who have not chosen to attend Community Computing.

Respondents were asked to identify factors that helped or acted as a barrier to computer use. 39 people identified helping factors. 6 listed social support, 4 mentioned regular use of computers, 8 mentioned training programmes, 4 specified modern computer and flat screen and 3 said they needed to use computers at work. More people (47) listed barriers. These included 15 people still not sufficiently confident/competent, 8 who had insufficient time, 5 limited by lack of access to computers, 2 for with a financial barrier and 4 who cited disability or old age.

22 people added further comments. 12 were general comments about Community Computing: 7 positive and 5 negative. The negative comments related to classes being too noisy and distracting, some staff being less helpful than others and being forced to take the programme by their employer. Specific ideas for change suggested there should be a scheme to allow people to buy a laptop on interest-free credit and have tuition on that laptop, being able to take the textbook home between classes and offering certificates to people who had completed Community Computing.

Almost two thirds (63.1%) of respondents agreed to be interviewed. For this phase I will be selecting a cross-section of respondents from different backgrounds and with different views about the programme and how it has affected them. I will use this opportunity to explore themes that have emerged from comments provided on the questionnaires. Following analysis of the interviews, the more difficult process of gaining access to people who have not enrolled in computer training will begin. Using information gained from earlier stages, I will focus on people with no computer skills, exploring the reasons and their attitudes etc. I will concentrate on identifying the psychological barriers and solutions that might enable these people to participate in New Zealand's digital future.

REFERENCES

Miller, N.E. (1941) The Frustration-Aggression Hypothesis. *Psychological Review*, *48*, 337-342.

Digital Strategy: A Draft New Zealand Digital Strategy for Consultation (June 2004). Retrieved18 April 2005 from http://www.med.govt.nz/pbt/infotech/digital-strategy/draft/draft-03.html#P36_4963

Santana, B. (1997) Introducing the Technophobia/Technophilia Debate: Some Comments on the Information Age. *Education, Technology and Society, UCLA*. Retrieved 5 May 2005 from http://www.gseis.ucla.edu/courses/ed253a/beatriz.htm

Seligman, M.E.P. (1975) *Helplessness: depression, development and death.* New York: W H Freeman

Skinner, B.F. (1954). The science of learning and the art of teaching. *Harvard Educational Review, 24,* 86-97.