



Surveying the Social Impact of Computers

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ABSTRACT

Students on UNITEC's Master of Computing programme carry out a survey on the social impact of computers. This paper updates the survey results presented by Joyce, Nodder, Northover and Sprigode (2000) and by Joyce (2001), and highlights some interesting patterns in the responses (including age and gender differences), and how these have varied over time. It also evaluates the effectiveness of the survey as a learning tool, in terms of both process and outcomes.

Keywords: Social impact, survey

1. INTRODUCTION

One of the four compulsory courses in UNITEC's Master of Computing programme has the stated aim "to enable students to analyse the impact of information technology on society from social and ethical perspectives". Topics covered include historical development of IT, culture and gender issues, strengths and weaknesses of new and emerging technologies, ethical behaviour and criteria for professionalism (Joyce, 2000a,b). Since the programme

began in February 2000, 123 students have taken the course.

As part of the information gathering for the course, each student has to get at least 7 people (at least one per decade) to complete a survey. The survey establishes each respondent's age, gender, current weekly computer useage, first computer use (what, where and when), and first significant impact of computers on them. Respondents are then asked to identify

- ◆ two ways in which computers have made their lives better
- ◆ two ways in which computers have made their lives worse
- ◆ two ways in which computers could make the world better in future
- ◆ two ways in which computers could make the world worse in future.

2. SUMMARY OF SURVEY RESULTS

The following tables show the results obtained over five semesters. Sample sizes were 104, 178, 145, 157 and 192 respectively. Responses to the last four questions were placed in one of 13 categories: Business, Communication, Education, Health,



Information, Keeping up, Leisure, Security/Privacy, Social, Time, Vulnerability/Dependency, Work, and Other.

The entries in the tables are ranked according to the percentage of respondents whose responses fitted into the categories concerned. Given the difficulties involved in achieving consistency in categorisation of responses among 123 students from

March 2000	August 2000	March 2001	August 2001	March 2002
Communication 67	Information 38	Communication 46	Communication 42	Communication 51
Information 39	Communication 31	Information 35	Information 35	Information 32
Leisure 28	Work 24	Work 25	Work 22	Work 31
Work 19	Leisure 17	Leisure 21	Education 20	Leisure 19
Education 12	Time 13	Education 18	Leisure 13	Education 16

Table 1. Life Better

March 2000	August 2000	March 2001	August 2001	March 2002
Vulnerability 37	Time 32	Time 29	Health 25	Health 27
Time 27	Health 28	Health 25	Time 25	Time 22
Health 19	Social 20	Vulnerability 21	Vulnerability 18	Vulnerability 21
Security 18	Keeping up 16	Social 19	Social 11	Social 18
Keeping up 12	Vulnerability 10	Keeping up 11	Keeping up 9	Keeping up 6

Table 2. Life Worse

March 2000	August 2000	March 2001	August 2001	March 2002
Communication 57	Communication 30	Communication 42	Communication 38	Communication 41
Information 26	Information 26	Information 26	Information 30	Information 33
Education 15	Work 18	Education 15	Work 15	Work 19
Work 10	Business 16	Work 14	Education 10	Education 14
Leisure 8	Education 13	Business 13	Time 8	Time 11

Table 3. World Better

March 2000	August 2000	March 2001	August 2001	March 2002
Vulnerability 47	Social 31	Vulnerability 36	Security 28	Vulnerability 36
Social 25	Vulnerability 28	Social 32	Social 28	Security 29
Security 21	Security 26	Security 27	Vulnerability 25	Social 17
Keeping up 15	Health 13	Health 13	Health 11	Health 10
Information 15	Work 10	Work 9	Work 11	Work 10

Table 4. World Worse

diverse backgrounds, the results are remarkably similar over time. This is highlighted below in the comments after each table, along with some comparisons between tables.

Table 1 shows that Communication and Information were always in the top two. Work always ranked third or fourth. Leisure fluctuated between third and fifth. Education was in the top five for four semesters out of five.

Table 2 shows that Health and Time were always in the top three. Keeping up and Vulnerability/Dependency were always in the top five. Social was in the top four for four semesters out of five. In the August 2000 survey 32% of responses indicated that computers had a negative impact on time, whereas 13% noted positive impacts on time.

Table 3 shows that (as in Table 1) Communication and Information were always in the top two and Work always ranked third or fourth. Education fluctuated between third and fifth. When taking a world view (Table 3), respondents did not include impacts on leisure as often as when taking a personal view (Table 1).

Table 4 shows that Security/Privacy, Social and Vulnerability/Dependency were always in the top three. Health and Work were fourth and fifth respectively for four semesters out of five. In the March 2000 survey 26% of responses indicated that computers could make information better for the world (Table 3), whereas 15% indicated that computers could make information worse for the world (Table 4), usually referring to pornography or dangerous information, such as bomb-making.

3. OTHER RESULTS

Some interesting age and gender differences have emerged from the nearly 800 responses. For example:

- ◆ more women than men thought computers had made communication better in their lives
- ◆ more women than men thought information from computers would make the world better
- ◆ most of those who thought computers had improved their leisure were males under 20
- ◆ most of those worried about security/privacy issues were aged 30 or over
- ◆ business impacts were mentioned by very few respondents aged under 30.

4. LEARNING

Quite apart from providing some interesting data which may be useful in assignment work, the process of conducting the survey also provides many learning opportunities. Students are confronted with the realities of designing and conducting surveys, categorising and analysing the responses, and presenting the results. Issues raised include:

- ◆ deciding when to use closed questions and when to use open questions
- ◆ checking the wording of questions for ambiguity and bias
- ◆ selecting respondents and obtaining informed consent

- ◆ interpreting and categorising answers to open-ended questions
- ◆ what to record if both responses to a question fall into the same category
- ◆ what to record when a respondent provides more answers than the question asks for.

5. CONCLUSIONS

Incorporating the survey into this course has proved very productive, in terms of providing experience with the processes involved in surveys, generating data, and stimulating thought and debate. In one case three students joined the author in presenting the results as a poster at an NACCQ conference (Joyce, Nodder, Northover and Sprigode, 2000).

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