

Chapter 8

Problems of diversity: Summary of the quantitative results

***“T is education forms the common mind:
Just as the twig is bent the tree 's inclined.”***

Alexander Pope, Moral Essays. Epistle i. Line 149.

8.1

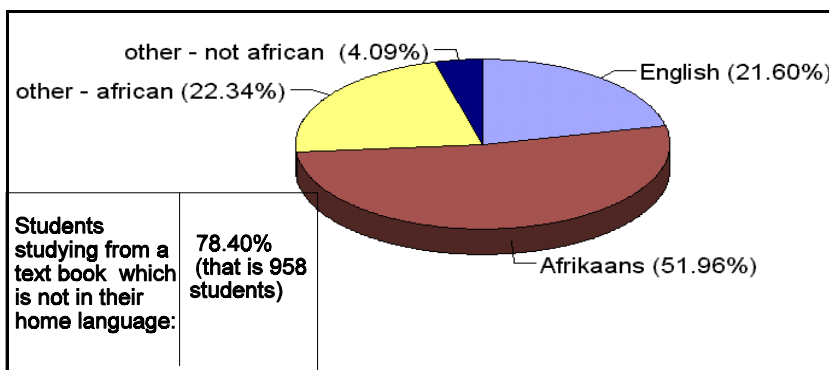
Introduction

The main research project was concerned with exploring the viability of incorporating technology in doing group work (referred to as teamwork in this chapter). Both qualitative and quantitative data were collected during this research as explained in Chapter 7. The quantitative data, obtained using questionnaires, provided a means of providing a rich description of the educational environment and hence allowing understanding the context so that the qualitative data could subsequently be interpreted (in Chapter 9) and it is the purpose of this chapter to briefly discuss the main findings regarding context.

The quantitative data gave insights into how the students experienced one particular course and, in particular, the teamwork done. As the students had to complete the questionnaires, they had to consciously reassess their own learning process and their choice of study methods. At the same time, they were given the opportunity to comment on the teaching and hence influence decisions concerning the way in which the course is presented in future. The results, in the form of the percentages of students selecting each option, together with interpretations as to the meaning of, and possible reasons for, the differences between the different language groups, are summarised in this chapter. The complete, detailed analysis will be submitted for publication separately. It was not included, as the thesis is long and these detailed results were considered to be less important than the rest of the thesis.

8.2

Method



8.2.1 Introduction

The quantitative data was analysed according to the home languages, spoken by the students in order to highlight diversity with respect to culture and possibly educational background.

Figure 8.1: Home language

Patterns emerged that seemed to indicate that the different groups of students had significantly different attitudes towards the course. Since an attempt was made to interpret the data, this part of the research was not simply a descriptive, positivist study [Orlikowski & Baroudi, 1991]. The intention of this part of the research is to increase understanding within a cultural context and hence there are aspects of an interpretive approach.

8.2.2 Sample

Various different questionnaires were given to the students. The data which is to be discussed here comes from the fourth questionnaire entitled "Evaluation of the study option". As can be seen from Table 8.1, a high percentage of questionnaires were completed and returned and there was a large sample.

Figure 8.1 indicates the languages which, according to the questionnaires, the students use predominantly at home. The languages shown as "other - African" were almost exclusively the nine official languages of South Africa other than English and Afrikaans, whereas the "other - not African" were those of Europe and Asia.

Table 8.1: Research sample

Responses	1222	78.28%
Not returned	339	21.72%
Total number of students in the course	1561	

The data was analysed according to the home language of the student, which is given as: Afrikaans, English and 2nd-language students. The analysis compared the percentage of students in each language group who selected a particular option for a particular question. The questionnaire asked for additional comments at various points. As it is difficult to determine accurately how frequently related comments are made, reference is made in this chapter to comments but no attempt has been made to associate a particular comment with any group of students.

8.3

Results

8.3.1 Attitudes towards various aspects of the course

There was a noticeable difference regarding the attitude towards the prescribed book (Principles of Information Systems, edition 5, by Stair and Reynolds), the course itself and the assignments set between the Afrikaans-speaking students and the other students. In all three aspects, the Afrikaans-speaking students were less satisfied than the other students. For example, only 33.23% of the Afrikaans students chose to describe the book as easy, compared with 58.71% of

English students and 48.61% of 2nd-language students. The 2nd-language students were much more positive concerning how interesting the book was than the other groups. Three times as many Afrikaans students as either of the other groups believe the book is unnecessary. The economic pressures on the 2nd-language students are evident and contribute to the fact that nearly 10% do not have the book.

The responses to questions regarding the course itself also indicate that the Afrikaans-speaking students seem to be the least happy. They are significantly less inclined to say that the course is interesting and considerably more Afrikaans-speaking students said it was difficult. Since the prescribed book is an important part of the material aiding the students, this response might be associated with the responses concerning the book.

The same pattern was evident in response to questions regarding the first of the two assignments which had to be submitted for the second half of the course. Exactly 60% of the Afrikaans-speaking students said the first assignment was difficult or very difficult compared with 46.21% and 47.37% in the other two groups. The results were more uniform in the second assignment which almost all the students found challenging.

It is noticeable that the English-speaking students are least likely to attend lectures. This seems to be because they find the book to be an easy and informative alternative and they do not find the subject very difficult. The 2nd-language students are the most conscientious as regards attending lectures. Since most of these students also attend lectures presented in English we can assume that the standard of lecturing was not the predominant factor influenced class attendance. The good attendance by the 2nd-language students might be ascribed to a generally positive attitude towards their studies.

8.3.2 Attitudes towards teamwork

8.3.2.1 Introduction

Three answers to the question "How did you decide who you wanted to be in a team with?" predominated. Most students explained their choice as:

- People they knew socially - these were often school friends, or people who were in the same residence.
- People whose work habits and standard of work were likely to result in good marks.
- Coincidental choice, such as people who happened to sit nearby in class when the teams were created.

The way in which the team members relate to one another is a significant issue. The following question types were used to measure this:

- How the individual student communicates personally - six questions
- Outcomes and processes in teamwork - ten questions
- Team dynamics - how well team members got on and team communication - eight questions

The answers selected by the English group were consistently positive, scoring most positive compared to the other two groups in sixteen out of twenty-four questions and within one percent of the most positive score on a further five questions.

8.3.2.2 Attitude of 2nd-language students

The question regarding whether the student was satisfied with the standard of the assignment that his team submitted was identified as the key question and the other questions are then used in an attempt to determine reasons for this result. The marks obtained for assignments are important to the students and significantly influence their attitudes to future teamwork. The group of 2nd-language students were noticeably less satisfied with their results than other students (71.83% were satisfied compared with 80.16% and 89.02% for the other two language groups). In fact, this group's assignment results were similar to other groups.

A combination of shyness and lack of confidence (and domination by some of the team members who do not allow others to contribute because they do not consider their input to be valuable) was indicated by the data. This phenomenon did not seem to assume serious proportions but is also identified in the findings reported by Theda Thomas [Thomas, 2000].

One frequent problem identified by all the groups was the unequal contribution made by team members. A number of questions explored aspects of how teams work together and the answers shed light on this problem. Reliability is significant in teamwork and the 2nd-language students did seem to be noticeably less happy with the reliability of the team members than the other students were. The question regarding whether team members contributed satisfactorily is even more directly associated with the issue. The data values for this question for all three groups were quite close and the value for the 2nd-language students was in the middle.

Comments made regarding the best aspects of teamwork often focussed on the interaction between individuals in the team. They frequently included comments about making new friends and how well the team communicated and reached consensus. An important question reflecting team dynamics was whether the team ever had to address a problem concerning the way people worked together. 23.22% of the 2nd-language students answered "Yes" compared with slightly more than 11% in both the other cases. This finding was confirmed, although not to such a

pronounced degree, by the question “On the whole did team members get on well with each other?” - 85.14% of the 2nd-language students said “yes” compared to 87.56% and 92.05%. Students were asked to explain what they had done to address the problem if they answered “Yes” to the first of these questions but few explained. This result is cause for concern. An interpretation of it follows in the discussion section.

A markedly different number of students from the different language groups (Afrikaans - 62.36%; English - 71.97%; 2nd-language - 55.11%) said of their team “Everyone usually took part in discussions”. Compared with the other two language groups, 2nd-language students were less inclined (74.92% compared with 80.31% and 85.75%) to say that team members were mostly or always friendly and polite. The reason may be given by the fact that far fewer of these team members knew each other well before they formed the team.

b. Interpretation

The historical context in which this research took place, must be taken into account when these results are interpreted. Although almost all the students concerned were in their first year at university and would have started secondary school after 1994, it is still reasonable to assume that the English and Afrikaans students come from an established catchment area, either in the city where the university is located or from schools elsewhere with a tradition of sending students to this university. Therefore, there is a much greater possibility that these students will join up with already established teams of friends. This puts them at an advantage when doing teamwork. The 2nd-language students are less likely to have been to the same schools. The data shows that the students in the 2nd -language group have a variety of different home languages and this means that the majority may not have been to school locally. This would explain the low number who knew all their fellow team members previously. Their estimation as to how reliable, friendly and polite team members were, and also how trustworthy they were, would influence how successful the team was. It is recognised that how long team members have known each other affects their perceived and actual trustworthiness [Jarvenpaa & Shaw, 1998]. A positive point is that when asked to state what the best feature of teamwork was, many students mentioned that it provided ways of getting to know fellow students. These comments were not captured in a way that permits analysis according to language group but can be confirmed by fact that 73.77% of the 2nd-language students say that the team members can now be considered to be friends that they will continue to see (compared with 82.55% English and 72.03% Afrikaans). This represents a big growth in friendship when compared to the number of pre-existing friendships. Thus, future teamwork will benefit from this team building.

Thomas [2000] makes some suggestions regarding how to improve the participation of a diverse group of students in teamwork. These include setting aside time during which the students are taught how be assertive in an effective and nonthreatening way. Team building exercises are

done during this period as well. One of the main findings in Thomas' research is that black students, when they are in the minority, as was the case in the current report, tend to be reticent and do not participate sufficiently in teamwork. It was hoped, in the research being reported here, that this acknowledged problem could be avoided by allowing students to choose their own groups and by encouraging them to choose team members with whom they were at ease. It seems, however, that this was ineffective. The findings being reported here highlight the fact that time is needed to establish trust. This is extremely difficult to schedule. The absentee rate at lectures is already high and attendance would probably be extremely low at any workshop or team building exercise unless it was going to contribute significantly to final marks for the course.

8.3.2.3 Attitude of Afrikaans students

a. Analysis

The slightly lower rating for enjoyment of teamwork compared with the other students is in agreement with the scores discussed earlier regarding how interesting the prescribed book is and how interesting the course is. The lower rating by this group regarding whether other team members understood what they were trying to say might reflect the fact that new terminology is used in the course and these terms are given in English in the prescribed book and Afrikaans in class. Communicating about the course material may easily be affected by this. The lower perception of team members' enthusiasm seems to point to the same rather unenthusiastic attitude towards the course in general. The Afrikaans-speaking students selected the always or mostly option regarding whether team members had prepared in advance of team meetings considerably less often than the others.

Responses to three out of the four questions intended to shed light on just how much of the teamwork was done together and how much was done by individuals and simply put together later, indicated that the Afrikaans students were most likely to work separately at least to some extent. It is not surprising, therefore, that the question which largely covers all team activities, namely "Team members contribute satisfactorily", shows an unsatisfactory pattern similar to all the others discussed in this section.

b. Interpretation

Taking results from an earlier questionnaire, which was completed before the students started the course, it seems possible that this group of students have not enjoyed teamwork in the past quite as much as either of the other groups and have possibly been exposed to less teamwork than the English-speaking students.

The results were discussed in detail with three members of the academic staff in the departments concerned. They were chosen because they taught the first year Information Systems courses and all three have considerable experience teaching Afrikaans-speaking students. None of them were surprised at the results. They all believe that the Afrikaans-speaking students tend to play a passive role in their studies and expect to be given a great deal of structure and support. These students have had little experience of being creative in the way expected in this course and tend to want to follow a recipe for a solution. The lecturers believe that this attitude is established during the students' school years but is perpetuated at the university by other departments. These other departments, which most of the students consider to be their home departments as they will be majoring in subjects offered there, lecture in a very structured way and generally use text books that are available in Afrikaans. Since these students used only Afrikaans text books at school, this means that an English textbook is a difficult new element. The lecturers believe that this group of students resent being expected to show initiative, are reluctant to prepare work and do not take responsibility for their own results. The lecturers reported a low attendance at lectures, considerably lower than that indicated by these students in the questionnaire.

Another more senior member of staff suggested that little teamwork was done at Afrikaans high schools in the past but that the advent of outcomes-based education was changing this. Another factor identified was that many Afrikaans students take additional subjects for Matric. Hence many of these students have already studied material which overlaps with that in this course and are bored. This staff member also noted that she had the impression that, of those students who requested permission to change their degrees in order to major in Information Systems, few were Afrikaans speaking.

8.3.3 Assessment of results as a whole

Although the difference in the average marks obtained by the groups of students for different activities is not large, a reasonably consistent pattern can be identified for all the student assessments done for the course. The 2nd-language students scored lowest on three tests containing mainly multiple choice questions but had marks close to those of the Afrikaans-speaking students for teamwork assignments and did well (average mark above the class

average) in the examination . This might indicate a language skills problem amongst those students.

The results of the research for this thesis all portray the students' perceptions and not actual fact. There is a 5.6% drop out rate and a 11.24% failure rate for this course. (Some of these students will subsequently pass the supplementary exam.) Almost all of the students who wrote the examination (1432 students) also wrote all the tests (1408, 1393, 1424 students for the three tests) although **all** students are permitted to write examinations regardless of whether they did any other work.

The research results reported above have come largely from quantitative data obtained from questionnaires. The sample was large and aspects concerning the participation in teamwork by the 2nd-language students are consistent with the findings of other researchers, namely Thomas [2000] and Goduka [1996a; 1996b; 1998].

The findings concerning the attitudes of the Afrikaans-speaking students towards teamwork and the course cannot be explained with certainty. As this university is one with an Afrikaans tradition, one might expect these students to be the most advantaged and that they would out-perform the other students. In addition, the Afrikaans students have been fortunate in that they have had to cope with few disruptions to their school education. Nevertheless the data seem to indicate that these students are relatively negative towards their university studies. Questions that need to be followed up in further research are: Are the problems local to the course in the sense that they are related entirely to issues such as the language of the textbook, or do they partly stem from earlier education as was suggested by the lecturers consulted?

On the other hand, factors to do with the change in the South African society might play a role. The rapid changes in the political dispensation have resulted in a completely new distribution of power. This, together with the major change in the composition of the student body at this university, could be put forward as reasons for some students feeling that they were losing status, whereas others might perceive themselves as gaining. This perception would particularly come to the fore in the first experiences of students outside the more protected and unchanged environments of their schools. Unfortunately the data can shed no light on these issues.

South African society is multi-cultural and it would be naive not to expect differences in the way in which different groups view teamwork. English-speaking and Afrikaans-speaking students could be expected to be more individualist than collectivist [Hofstede, 1997] and hence less enthusiastic about working in teams than the 2nd-language students. This was found to be true for the Afrikaans-speaking students but not for the English-speaking students. The different attitudes towards teamwork cannot, therefore, be interpreted as being in line with Hofstede's findings.

This is, therefore, an example of quantitative research telling only part of a story. It certainly appears to point to differences in attitudes that might be important but it says little or nothing directly about the causes. Further research could be undertaken.

8.4

Conclusion

In this part of the research it has been necessary to consider the cultural and historical context in which the research took place. This is appropriate for intersubjective social research as was noted in Chapter 2. Some of the data was analysed in a quantitative way using a spreadsheet and calculating percentages but it was also interpreted and occasionally suggestions were offered as to why things might have occurred. These interpretations are not value free but nor are the opinions that were collected in the questionnaires. The outcomes from this part of the research are descriptive and contribute to the research goals identified in the research framework, (refer to Table 2.8 in Chapter 2) namely a greater understanding of the context.

Three sets of attitudes that are a cause for concern were identified using a combination of quantitative data from the questionnaires and the comments that were included. The first is to do with the way the choice of a textbook affects the non-English-speaking students. The second, is the general attitude of the Afrikaans-speaking students to this course, including the teamwork. The third, is difficulties that the students whose home language is neither English nor Afrikaans have with teamwork.

The issue of English text books is a universal one and has been confronted repeatedly. From the results of this research, it is clear that the English-speaking students are at a distinct advantage and this is reflected in all types of assessment, their final results and their attitudes to all aspects of their studies. However, the difference of 4.5% in the average final mark cannot with certainty be ascribed solely to one factor. The difficulty of translating a textbook in a subject where new editions are published regularly and the fact that it is not only Afrikaans-speaking students but all non-English-speaking students that are affected, means that it is simply not feasible to provide a suitable book in multiple languages. We must accept that the students are going to have to improve their reading skills in English.

The issue of the overall attitude of the Afrikaans students to this course needs further investigation in order to determine whether this is true of specific courses and faculties or is a phenomenon which can be detected throughout all tertiary education. Once the extent of the problem is identified, its cause and, thereafter, the solution can be worked on. Possibly a multi-pronged approach is required with longitudinal studies monitoring progress.

The problems of diversity, and particularly those problems that the black students and other minorities experience in doing teamwork, has also been identified before. It seems, as is the case with language, that the best way to solve the problem is to confront the students with it but also to try to give them specific guidance by making all of them, not just the minorities, aware that there are problems and that there are recognised techniques for ameliorating them. Time needs to be allowed for this. Orientation courses for first year students might be one opportunity but it is possibly necessary to repeat these within courses to reinforce them in the context of actual problem solving.