Chapter 3

Making the transition: the story

3.1 Introduction

This case study considers the experiences of 26 learners in the computer class in their final year of high school.

Grade 12, or the Matriculation year, is the final secondary school year for South African learners. This year is currently regarded as being the most important year for school learners because they earn their first qualification to compete in the labour market, and enrolment in tertiary training institutions depends on the results that they obtain in this year. As places in tertiary institutions such as technical colleges, technikons and universities are relatively scarce these days, the application process becomes extremely competitive. Only students who have obtained the best results at the end of grade 12 are even considered for many university courses. This increases the anxiety about marks that learners tend to experience during this year. Learners experience this final year as a very challenging and stressful end to their school careers.

Traditionally the result of the year, and therefore the Matriculation certificate, was based solely on the results of the final examination. In 2001 a new system was introduced: learners were required during the year to compile a CASS portfolio which would contribute 25% toward their final year-end results.

During 2001, 26 grade 12 learners and I embarked on a journey of learning in a computer centre. These learners had elected to do Computer Studies as one of their six subjects in the senior phase of high school. The subject Computer Studies entails learning expertly to use three programs: a word-processing program, a spreadsheet program, and a database program. The learners on the higher grade had also to learn to do programming by using the PASCAL authoring program. The last part of the syllabus for both the standard and the higher grade is theoretical. The topics covered are mainly

learning about computers, their components, software, operating systems, networks and the impact of computers on society. At the same time, these learners also followed the FutureKids curriculum. This case study considers *only* the practical part of the subject, in which learners demonstrate their expertise in using the three application programs and the FutureKids project, which shares a part of that objective but which is not limited only to the use of the three programs mentioned above.

3.2 Background

3.2.1 The school

Figure 3.1: The entrance to Merensky High School

Merensky High School is situated outside the town of Tzaneen in the Limpopo Province of South Africa. The school is situated on a farm. A variety of subjects, ranging from the usual academic subjects like Languages, Mathematics, Science, Biology and Computer Studies to technical and agricultural subjects are offered by the school.

Figure 3.2 Merensky High School Farm

The school also offers the FutureKids Curriculum. FutureKids is an independent international organisation that specialises in computer literacy training for children and adults. The FutureKids curriculum aims at making learners computer literate so that they can use technology to their advantage both in school and in the workplace. The curriculum covers the usage of the following programs: word processors, spreadsheet programs, database programs, desktop publishers, presentation packages and drawing programs. Programming, PC building, Repair and Upgrading, and Pastel are electives offered in the curriculum. Although learners may choose to do FutureKids in addition to the usual curriculum, learners doing Computer Studies mostly follow the FutureKids curriculum as well.

Figure 3.3: Learners in the FutureKids Classroom

The learners at the school come from diverse backgrounds and although classes are offered in Afrikaans and English, learners' home languages also include Northern Sotho, Tswana, and Venda. There are approximately 800 learners of both genders in the school.

3.2.2 The class

The grade 12 Computer Studies class for 2001 had 26 learners who were taking subjects at either the standard and higher grade level. All these learners also attended the FutureKids classes. There were Afrikaans and English speaking learners of both sexes in the class. All the learners were between 17 and 18 years of age. The demographic of the class is as follows:

Table 3.1: Demographic of grade 12 Computer Studies class of 2001

	Boys	**Girls**	**Higher grade**	**Standard grade**	**Total**
Afrikaans	5	11	1	15	16
English	4	6	3	7	10
Total	9	17	4	22	**26**
Standard Grade	6	16			22
Higher grade	3	1			4
Total	9	17			**26**

3.3 Projects

One of the ways in which the transition is made to the more learner-centred classroom is by introducing learning and assessment through he completion of projects instead of by means of more traditional instruction and tests.

3.3.1 Introduction

Up until 2001, the learners were only familiar with small projects that were completed mainly in the Computer Studies practical class time. The object of these projects was the practice of skills learned in the class. These kind of 2001 projects were very prescriptive in nature.

Learners were not therefore familiar with projects of larger scope in which the objective is the construction of knowledge. Nor were they familiar with the concept of CASS portfolios. The class was required to complete three types of projects throughout the year. These projects ran simultaneously because the learners were expected to complete the prescribed project in their own time: the FutureKids Project in the FutureKids periods and the class projects in the practical Computer Studies class time.

3.3.2 The prescribed CASS project

CASS projects are projects comprising learner portfolios that are for Continuous Assessment. A single project that required the learner to use the word processor, spreadsheet and database program in one large project was prescribed by the Department of Education. The information used in the project was largely gained from the Internet and was used for all parts of the project. This project's theme was **tourism**. The theme of the prescribed project was regarded as relevant and important because the Limpopo has increasingly become an important tourist destination .

Learners could – to a very large extent – choose the content of the project, and they were encouraged to include content that was relevant to themselves or that intrigued them. These projects were more time-intensive, and although the learners had the opportunity to work on them in class time, they were also expected to do work on these projects after school at home or in the computer centre at school. Although the spreadsheet and database components were individual projects, the learners had to compile a magazine that was a group project.

3.3.3 The class projects

The class projects were small, short and could be completed during a practical period. The practical periods lasted an hour. These projects were prescriptive. Although learners had to display their computer skills to do the project, no research skills were required. These projects gave them no opportunities to choose content, and they were completed in class with the assistance and under the supervision of a teacher. All these projects were completed individually.

3.3.4 The FutureKids Project

In order to complete this project, learners had to create an "electronic portfolio" using an HTML composer. The learners were also expected to include (link to) items made in the other applications used in this project. Learners had earlier completed the FutureKids module that dealt with Microsoft FrontPage. The portfolio included their biographical details,

examples of their work on the computer, pages about their friends and dreams for the future, as well as their interests and hobbies. Learners were encouraged to use the school's digital camera to add photographs for the project (also a new skill). The object of the project was to learn new skills while apply existing computer skills, and to reflect on the experience of their school career, especially the last year at school. They were also asked to give some consideration to their futures. Apart from these minimum requirements, the project was not prescriptive, and learners were expected to reflect their individual interests and insights in the project. Although the nature of the project required that each learner complete a project about himself or herself as the subject, learners were also encouraged to share their skills and ideas.

3.4 Assessment

3.4.1 Introduction

Even though the Outcomes Based Education system had not yet been implemented in the year 2001, certain changes in assessment based on the principles underlying Outcomes Based Education were instituted in 2001. Learners were required to hand in a Continuous Assessment Portfolio for each subject that would make up 25% of the final mark while the examination at the end of the year would still count for the remaining 75% of the final mark

The projects required for the Continuous Assessment Portfolio are based on more learner-centred principles. As these learners had not been educated in an Outcomes Based Education system of education, their experience of education until that point had been based on the instructivist model.

3.4.2 Assessing the projects under consideration

The requirements for the subject Computer Studies demanded that the Continuous Assessment Portfolio contain various class projects and class tests, under the heading of *informal assessment*, a prescribed project, and the results of examinations, under the heading *formal assessment* (Northern Province Department of Education, 2001).

The prescribed project and the shorter class projects were assessed according to the various skills that had to be displayed in the projects. Assessment sheets were compiled in which learners were allocated marks according to an assessment matrix. All the assessment for the CASS Portfolios was summative assessment.

Although the FutureKids curriculum includes the writing of examinations set by the company, the examinations do not extend to the project in grade 12. The learners were assessed on a more informal basis throughout the project: the educator commented on content and the skills that were displayed, and entered into frequent discussions with the learners about various possibilities inherent in the project and the use of the skills. The FutureKids project in grade 12 is given as part of the learning process and the assessment of the project is mainly formative. For the purposes of this study, however, the project was also assessed along the same lines as the project for the formal subjects at the end of the project. The learners were not shown this assessment.

3.4.3 Conclusion

The change in assessment was important to the learners because it impacted on their end-of-year results. As has already been noted, they regarded those results as being all-important because they determined their possible enrolment at a university or possible employment in a job market where supply far exceeded (and still exceeds) demand.

The learning experience was marked by various factors that were new to the learners in this class and that had been implemented for the first time in the learning environment. These factors were:

- a more learner-centred learning environment
- changes in assessment methods and the introduction of portfolio assessment
- project-based learning

3.5 The story unfolds

3.5.1 Introduction

The learning for the 26 learners and for myself during 2001 was contained in three different types of projects that we did simultaneously. Because I had been newly appointed to Merensky High School, many new experiences awaited both me and the learners. Although this story is told chronologically, it is related separately for each type of project.

The learners were confronted with some changes in the learning environment. Not only were they confronted with a different way of learning (i.e. by means of projects), they were also exposed to the new role of the teacher in the learning environment.

3.5.2 Initial reactions

A variety of reactions to the different types of projects was noted from the outset. Other initial reactions also include the way in which many of the learners initially reacted to the teacher.

3.5.3 Initial reactions to the teacher

As the content of the curriculum was no longer offered in an instructivist manner, the role of the teacher also differed from what the learners had come to expect. The learners were given the project and were expected to participate in a discussion to make sure that they were certain about what was expected of them. Initially the learners did not participate in this type of discussion, but the many questions that they asked took the place of this discussion as the work progressed. The teacher of this class helped learners individually whenever they asked for assistance or to clear up certain issues. She also initiated discussions with learners to stimulate them to reflect on the learning processes in which they were participating. The teacher facilitated the learning processes of the learners when requested to do so, and whenever she observed that learners were not progressing satisfactorily with the assignments and needed more guidance.

Learners did comment on their unease with the new role of the teacher by commenting on the way “things used to be”. It was observed that many learners were unsure of themselves and wanted the “old ways” back because they felt that they used to know what to expect at all times and thus felt more secure. The learners described “the way things used to be” as an instructivist environment in which learners were given templates and were shown how to change the templates (they learned the computer skills they required to make the changes as they progressed). The learners were obviously comfortable with this arrangement and many of them expressed a dislike of having to find a solution to a problem or to learn a new skill by using any other method.

3.5.4 Initial reaction to the projects

Reactions to the different projects did not vary very much. Prior to 2001, the learners had never done a project of such large scope or with so much choice in content and presentation as in the FutureKids Project. A project of this type was an entirely new experience for the learners. One might therefore have expected that the reactions to this project would have differed significantly.

In the FutureKids Project, the learners were expected to create an electronic Curriculum Vitae containing the details of the learner, and his or her experience of the final year at school. The learners had to include a page with their personal details, a page about their interests, a page on which they reflected on their friendships and a page that described their dreams for the future. Learners were encouraged to include evidence of their computer skills as well as other skills by including examples of work done in other classes and subjects. Learners were expected to use as many different programs as possible and to incorporate the whole in a website that would be burned onto a CD Rom. The learners would then be able to keep the CD as evidence of their competence and as a record of their final year at school. A scanner and digital camera were placed at the learners’ disposal.

The learners were given a choice as to exactly what material they wanted to include in their project. Although there were minimum set requirements,

learners were encouraged to do much more. Learners were expected to make the project relevant to themselves by their choice of content.

The project was initially greeted with mainly positive attitudes. While most learners were eager to keep a record of the year, there were some negative comments from the beginning, comments that indicated that some thought that it was a waste of time while others indicated that they were not interested in doing the project. Many learners did not relate their feelings or views about the project, but merely started to work on it. Some learners very soon indicated that they did not know where to start. Others were concerned because they were not sure that they were doing it correctly. It soon became clear that some learners did not know how to plan the project or where to start. While some learners asked for assistance with the skills that were required, many learners' questions were not of a technical nature: it appeared that they were rather seeking assurance that they were doing the right thing. Some learners started off very slowly by orienting themselves in relation to the program. But generally they spent little time choosing content or trying to use any other than the most basic skills. It was observed that some learners even experienced difficulty in retrieving saved files. Few learners exhibited the skills they needed to search for their work on the network, and some did not want to try to look for lost files without the teacher's assistance.

The projects referred to as the CASS projects in this study are the projects prescribed specifically for the continuous assessment portfolios. The CASS project consisted of three parts, all on the same theme, and a research project. Learners were expected to use Excel and Access to create a database and spreadsheet that contained the details of the many guesthouses, hotels and other tourist amenities and attractions in the Letaba area, or if they chose to do so, in the country as a whole.

The compilation of a computer magazine was given as a group project. Learners had to gather whatever information was needed to build the database from newspapers or the Internet. Learners also had to compile a research project on a topic chosen from suggestions made by the teacher. The research project was an individual project. At the same time, learners

were given the different components and explanations of what was expected from them. As the same topic was used for all the CASS projects, the information gathered was relevant to all parts of the project.

The CASS project was greeted with more of a mixed reaction than the FutureKids project. Many learners felt right away that they were not interested in tourism. Many learners expressed the view that they did not know where to start. Some learners said that they were not interested in doing the project. Some learners said that they wanted a template that they could adapt along with step-by-step guidance on the project. After discussing the advantages of their own selection of content and skills, some learners maintained that it was too difficult and time-consuming. Some learners said that they did not want a choice in the matter of content inclusion: they wanted to be told *exactly* what to include. As with the FutureKids projects, it became clear that some learners were very doubtful about where and how to start the project or how to plan the content of the project ahead of time.

The observed behaviour of the learners also showed some diversity.

Some learners buckled down and started the project immediately. While most learners asked for assistance at the beginning of the project, observation of their subsequent behaviour made it clear that some of them were asking for reassurance rather than for assistance with specific tasks.

Some learners started on the project and then complained most vociferously. They also appeared to be unsure of themselves.

Some learners experienced difficulty with the saving and recalling of their files on the network, even though all the learners had saved and retrieved files through the network during the previous year.

Some learners were very negative about starting the project. They played around and had to be frequently reminded about the project. Most of these learners made very negative remarks about the project.

Learners did not start work on the group project until it was almost time to hand it in.

While the class projects were initially done with another teacher, I assessed these projects and prepared the final CASS files that were included in these projects. While initial reactions to these projects were not observed personally by the researcher, the reactions of the learners to these projects were discussed with and described by the teacher. The learners were expected to complete these projects in class. Most learners knuckled down and started on these straight away, but other learners reacted negatively. Some of these projects were left incomplete and some were not completed within the time frame set for it.

The formal class projects were similar to the class exercises that learners were used to. Most of these projects had to be executed exactly as given: there was no choice with regard to content or the skills that had to be used to execute them. These projects did not take very long to do and required less thinking and exploring work on the part of the learner. No research was required to do these projects and the end results were mainly identical. Most learners could complete the projects easily in the class time given. Some learners did not finish all these projects because they were not interested and wasted time by doing various other things and not spending their time on the projects. Some learners did not seem to think that these projects were important and thought that they would not earn marks. However, by far the largest part of the class completed the projects with little or no comment.

Some learners commented on the theme of some of these projects. Some described them as “boring”. But, on the whole, they were executed without comment.

3.5.5 Reactions to the teacher over time

The reactions to the teacher seemed to intensify as time passed. The learners who were fairly positive towards the changes in the learning environment seemed comfortable in discussing their learning experiences and difficulties with the teacher. At the same time learners who started off very negatively towards the projects remained very negative and were very difficult to draw into discussions about the projects or their own learning experiences. These learners also frequently made the comment that they did

not see the sense in doing projects and wanted to be told exactly what (they did not want any choices). Their reaction to the facilitation of the teacher was also negative. Discussions were entered into only at the insistence of the teacher – and then only grudgingly. These learners said that they resented the new way of doing things and were not ready to cooperate. When they asked for assistance, learners were guided to revise the strategies that they were using in order to find solutions to the problem they were experiencing. It was common for the learner to react in an irritated fashion when only *pointers* to the solution were given rather than the solution itself.

3.5.6 Reactions to the projects as time passed

The trends that appeared at the beginning of the projects continued. Although progress in the CASS project and the FutureKids project was largely the same, learners seemed to comment more on the CASS project than on the FutureKids project. The learners' reactions toward the CASS projects and the FutureKids projects were almost the same, except that the learners commented that the FutureKids project was "too much work" if they were not going to earn marks for it.

A variety of different reactions continued to be noted.

The behaviour of some learners continued to be positive. These learners made steady progress and even though they commented on the relevance of the topic, they said that they disliked the process of making the project and would rather be given a test. Some learners commented that although they would prefer to work from a template, they were learning a lot.

Some learners were more vociferous at this stage. These learners were making some progress, but tended to spend less time on the content of the projects than on the formatting of the work. These learners also expressed anxiety about their ability to do the project. Some made remarks like "I don't know if the work is correct" – even on pages where the open-ended nature of the question or the task meant that there was no "right" or "wrong" answer. Many of these learners also said that the project was frustrating because they were unsure about the content (they had to choose part of the content

themselves). Many of the learners complained that they did not have enough time to complete the projects.

Other remarks included:

“I don’t like doing these projects, but I know I’m learning a lot.”

“ I struggle to master the skills, but once I have done them like this I can really use the skills.”

“ I like doing this type of project – I like finding things out for myself.”

For some learners, progress was markedly slower than for others. These learners were very negative towards the projects: they said that they were not interested in the topic, that the project was a waste of time. It was noticed that many of *these* learners had problems in executing tasks and that they lacked the needed skills. The teacher did intervene when this was noticed to help the learners master their needed skills. However it quite frequently happened that learners needed help with the same skills more than once. It was noted that some learners were reluctant to make the projects their own: they did not seem to take responsibility for the projects.

One learner stated that the CASS project was too much work for the proportion of marks that it contributed towards the final mark. Some learners also had problems in planning the projects. They tended to regard these projects as a waste of time and stated that they did not learn much by doing them. Some the learners tended to spend a disproportionate amount of time on searching for information on the Internet and on repeatedly changing the format of the FutureKids project without actually making substantial progress. Some learners also complained quite often that they needed more time to complete the project.

It was noted that some of the learners cut classes. Some learners used the time they gained by doing this to do homework for other classes or to play games – until they were reprimanded. There was a distinct differences among learners’ attitudes towards the work. Some would buckle down and work immediately; others needed encouragement from the teacher before they started to put effort in to the project; others tried to get away with doing

nothing or doing work for other subjects until reprimanded (thereby displaying very low levels of motivation to get the tasks done).

Learners generally left group work project fairly late. Some groups worked very well together and arranged times in which they worked on the project. Some learners complained that the group was not working and elected to do most of the work of the group. Some learners were very negative and left the task, making half-hearted attempts to start on the project when they were forcibly reminded of the due date for the project. There were numerous complaints that the groups were not working well together. Many learners expressed the idea that it was grossly unfair that the whole group got the same marks for the project because not all members worked equally hard on it.

3.5.7 Learner reactions towards the end of the project

The tendencies observed during the work on the project seemed to intensify toward the end of the academic year. It was noted that the class on the whole became more negative towards the work as the pressure towards the end of the year increased.

The final marks for the CASS project had to be submitted to the Department of Education at the beginning of September. This effectively ended any opportunity to work on the CASS and class projects. The pace of work for all the learners picked up in all their subjects, and the learners were then engaged in the last lap toward the important examination that started during October.

Some learners seemed to be able to work at their own pace. These learners did not express feelings of anxiety. They were not always positive about the projects but got on with it nevertheless. Some learners complained about the time needed to complete the projects. The learners who were able to work at their own pace made good progress with the work.

Some learners were also more vociferous towards the end of the project. They still commented on the same issues as before, but now time became a larger factor and the learners seemed anxious about not being able to do the

work well enough in the time left. While these learners did make progress, they were less able to work at their own pace and needed more reassurance from the teacher.

Some learners did not make good progress. The comments made by the learners became markedly more negative as time passed. Some learners frequently expressed anxiety. While some learners had difficulty in doing the project (usually because of a lack of skills), they apparently did not feel that it was worthwhile to make an effort to learn new skills. These learners more or less gave up. Some others also made no progress. They made no effort to complete the tasks or learn the skills that they lacked, commenting that they felt that the projects were not worth the effort. They said that it was not worth putting all that energy into a CASS project that counted 10% of the 25% of the final mark, or to do the FutureKids project for no marks at all. Some learners said that they were tired and wanted to play games instead of working as they had been working hard at all their subjects. The general feeling expressed amongst these learners was not anxiety about their abilities but rather an “I can do this but can’t be bothered” kind of attitude.

The group project that was ignored by too many learners for too long became due by the end of the time left to spend in the classroom. Some groups went all out and arranged work-at-home sessions and produced well-thought-out magazines. Some others followed the instructions to the letter and produced passable results. But others merely decided that it was a waste of time and that they were not going to work on the group project at all. The remaining members of these groups then completed the entire magazine. Except for the most successful groups, learners complained about the project. It was observed that the members of a group where the general atmosphere was negative tended also tended to become negative. It was also observed that in such groups the learners had trouble in planning the project. It also seemed that the learners could not get those members who were “cruising” to participate fully in the project

3.6 Summary

This chapter describes the classroom events and the assessment of the projects. The description of the classroom events is divided into three parts:

- the initial reaction of the learners
- the reactions of the learners as the year progressed
- the reactions of the learners towards the end of the projects

The learners' observed reactions to the change to a more learner-centred learning environment covered a wide range of behaviours. Learners were encouraged to express their feelings about the classroom events and the way in which they were learning. These reactions, both positive and negative, seemed to intensify as the year progressed.

Chapter 4 discusses the learners' reactions to the constituent components of learner-centred learning as described by the APA (Lambert & McCombs, 1998):

- cognitive and meta-cognitive factors
- affective and motivational factors
- developmental and social factors
- individual factors