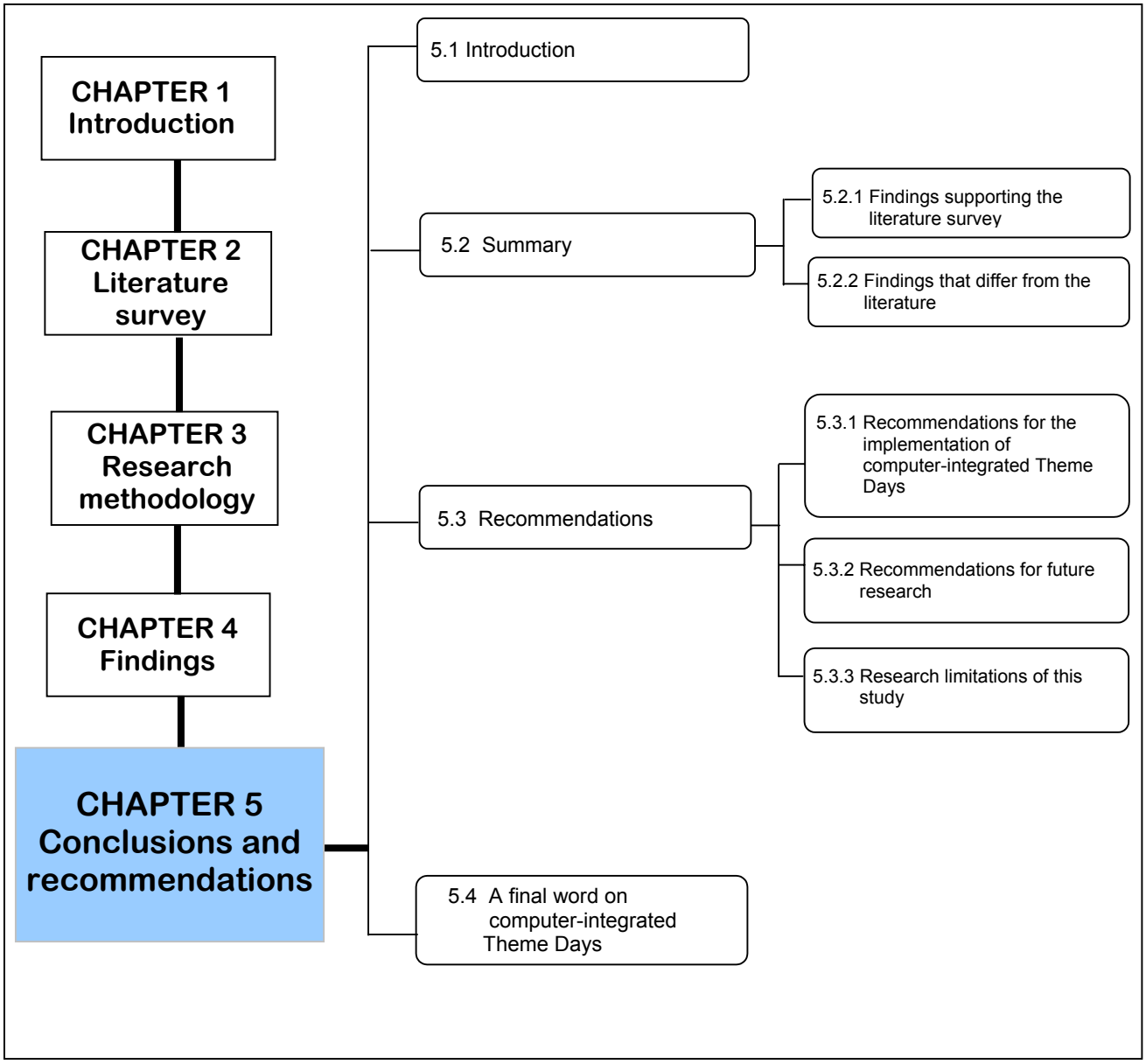
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CHAPTER 5
Conclusions and recommendations

5.1 INTRODUCTION

This is the concluding chapter of this dissertation. In this chapter a summary of the research findings, and an abridged discussion of the findings that differ from the literature and recommendations will be described. The research limitations of this study are briefly discussed. Recommendations for the implementation of computer-integrated Theme Days are made, as well as recommendations for future research. A summary of this study's research will be described in the following section.

5.2 SUMMARY

In this section, findings to support the literature survey and the findings that differ from the literature will be discussed.

5.2.1 Findings supporting the literature survey

The learner characteristics of the St Alban's learners are similar to that of the characteristics of the learners belonging to the *net generation* and the *digital child*. The learners of St Alban's College have been exposed to educational and digital technology, and more specific computers for many years. They have access to computers at home, the well-equipped StaTech complex at school or at the hostel if they are residing in one of the College's boarding houses. Many learners have their own laptop computers, are computer literate and are well adapted to technology as it poses no threat to them.

The essential components of cooperative learning as described in the literature by Johnson & Johnson (1991:55-57) were visible during Theme Days. The St Alban's learners worked in groups during Theme Days. The groups had to complete

tasks before the conclusion of the Theme Day. The learners coordinated their efforts with those of their fellow group members. The group members pooled their skills and worked together on Theme Day tasks. Each group member knew what was expected of him, and participants accepted the responsibility to complete their share of the work. Theme Day participants displayed proper social skills and inter-group relationships, as they knew how to resolve conflict when it arose. Document analysis stressed the importance of cooperative work during Theme Days while learner observation showed that the learners worked cooperatively in groups. No deviate conduct was observed during any of the five Theme Days. Adendorff (2000:117) quotes Confucius (c. 450 BC). This quote summarises learning of learners participating in computer-integrated Theme Days at St Alban's College in short.

Confucius noted:

> *I hear and I forget,*
> *I see and I remember,*
> *I do and I understand.*

Document analysis reveals that St Alban's has been using the learner-centred model for many years where learners are motivated to construct knowledge and to apply lateral thinking skills during computer-integrated Theme Days. Learners who are members of the CLC form committee, are actively involved in the planning and management of Theme Day activities. While the learners as Theme Day participants construct meaning for themselves, they don't just sit in the class and absorb information, they participate and understand what they do.

Literature reveals that the new-generation learners require new-generation educators. The new-generation educators fulfil a new role. St Alban's educators are facilitators and they are no longer the 'sole providers of knowledge'. Educators coordinated the activities of the CLC form committees and assisted Theme Day participants where necessary.

Document analysis reveals that St Alban's learners were exposed to cross-curricular activities during Theme Days. The barriers between subjects were broken down as more than one subject were incorporated into Theme Day tasks. The *Earthly Aliens Theme Day* tasks, for instance, included language, art, history and natural sciences. Learners as members of the CLC form committee gained managerial and conflict resolutions skills. These learners managed Theme Days during the planning phase as well as on the actual Theme Day.

Literature refers to technological components such as the local area network, intranet, Internet and bandwidth. Document analysis reveals that St Alban's College has over ten years of experience of ICT in education, and the College views itself as a pacesetter in the utilisation of the latest information technology in education. The St Alban's learners have unlimited access to email and the Internet in the College's richly equipped StaTech complex, which houses 134 workstations. Boys who reside in a boarding house also have access to technology after hours.

5.2.2 Findings that differ from the literature and document analysis

Johnson, Johnson & Holubec (1994:24) are of the opinion that there is no ideal size for a cooperative learning group. The appropriate size depends on the individual lesson's outcomes, learners' ages, materials and/or equipment available and the time limits for the learning event. Although the literature states that the size of a cooperative learning group ranges between two and four learners per group, the average size of groups at the St Alban's Theme Day were ten learners per group. The size of the cooperative groups had no implications for the learners participating in computer-integrated Theme Days at St Alban's College.

Literature reveals that net generation learners living in a digital world where they spend many hours working on computers without a break, have the risk to display social and related problems. These social problems include children to be overweight, learners who experience reading and writing problems and learners who are less creative because they have access to software packages where they can just cut and paste images. Additional to the social problems are ergonomic risks

associated with computer labs and inappropriate furniture at schools. Observations the researcher revealed that the StaTech computer centre have appropriate furniture and posed no ergonomical risk to the participants. The Theme Day participants displayed good communication skills, they worked in harmony in their groups, discussed the Theme Day tasks and furthermore, they displayed no social problems.

Observations of Theme Day participants revealed that the aforementioned social problems are not applicable to the learners at St Alban's. Document analysis reveals furthermore that the College is committed to quality service and encouraging personal responsibility in the interest of the all-round development of the College learner as an individual participating in cultural, musical and sports activities. Theme Day tasks allow St Alban's learners to be creative. The *Earthly Aliens and Insects Theme Days* tasks included art activities. The learners had to create an insect with the art items provided to them. Ergonomic risks posed no threat to the St Alban's learners, as the furniture in the StaTech complex is suitable for computer usage. The learners did not spend hours at their workstations without a break. The learners had a tea break during the morning and during this break, all participants left the StaTech to have fresh air, tea and sandwiches next to the StaTech entrance.

According to the literature survey, computers do not necessarily have a positive impact on learners growing up in a digital environment. According to Vail (2001) learners prefer to use e-mail to communicate with their fellow classmates. This resulted in poor communication skills. Furthermore, learners experiencing computer anxiety have a fear of being embarrassed in front of other learners in the classroom. Research by means of participatory observations and interviews at St Alban's College during Theme Days have shown that this is not the case with the St Alban's learners. The learners did not display poor communication skills or indicated that they mainly preferred to communicate with peers via e-mail. The learners at St Alban's College are used to working with digital equipment, notebook computers at home and at the College and did not display computer anxiety. As part of the Theme Day tasks, at the end of each Theme Day, the groups presented their PowerPoint slide shows. The learners had no fear of being embarrassed when presenting their slide shows to the all the Theme Day participants in StaTech 1 when it was time for the final assessment.

Although the digital divide is a global phenomenon as indicated in the literature, the learners of St Alban's have access to a technology-intensive computer centre and cannot be categorised as the 'have-nots' but rather the 'haves'. Document analysis reveals that the College has even implemented measures to bridge this gap or divide by means of various outreach projects. The College made its facilities available to train educators from previously disadvantaged schools in the Pretoria surroundings.

Recommendations will be discussed in the following section.

5.3 RECOMMENDATIONS

Recommendations for the implementation of computer-integrated Theme Days, future research and the limitations of this study will be described in this section.

5.3.1 Recommendations for the implementation of computer-integrated Theme Days

Recommendations from the results and conclusions drawn from this investigation serve as guidelines for schools investigating the possible implementation of computer-integrated Theme Days. The main recommendations are the learning community, pedagogy and technology. The learning community refers to the school, the learners and the educators and is only applicable to the recommendations of this section. Hence, Table 5.1 presented over two pages, provides a summary of specific recommendations on the aspects that resulted from this case study on the implications of computer-integrated Theme Days for learners at St Alban's College.

Moreover, these recommendations derived from the present study, only involved computer-integrated Theme Days among a relatively small number of learners. The field is wide open for further research into the implications of computer-integrated Theme Days. Recommendations for the successful implementation of computer-integrated Theme Days are presented in Table 5.1.

Table 5.1 Recommendations for the successful implementation of a computer-integrated Theme Day

Aspect		Recommendations
Learning community	**School**	▪ A *school* board should conduct a feasibility study before computer-integrated Theme Days can be implemented. ▪ Draft and design an educational technology policy for the school. ▪ Schools can adjust the St Alban's Theme Day concept to suit their specific needs. ▪ A school should determine what the aim of a computer-integrated Theme Day at their school would be.
	Educators	▪ *Educators* should not be the 'sole providers of knowledge'. ▪ The role of the educator is mainly that of a facilitator during computer-integrated Theme Days.
Learning community	**Learners**	▪ The number of *learners* per grade can influence the successful implementation of computer-integrated Theme Days. This aspect should be considered in the planning of Theme Day activities. ▪ Learners should be exposed to cooperative learning and the concept of a computer-integrated Theme Day. Run a trial at the school to determine the impact of a computer-integrated Theme Day. ▪ Set up a small committee of learners who can assist educators in the planning and execution of Theme Days, as the workload would be too much for a single educator to manage and coordinate. ▪ Learners need to be assisted in the development and management of a Theme Day. ▪ Provide learners with the opportunity to give their inputs.
Pedagogy		▪ The curriculum of a school should be redesigned to break down the barriers between subjects to accommodate the cross-curricular activities during a computer-integrated Theme Day. ▪ Learning should be learner-centred and not educator-centred. ▪ The school's timetable should be redesigned to accommodate at least two Theme Days per grade group annually. ▪ Learners should be exposed to the concept of cooperative learning in a computer-integrated environment. ▪ Theme Day learning activities should be fun but the educators should not neglect the educational components.

Table 5.1 (continued)

Technology	▪ A feasibility study should be conducted to determine whether the school's computer facilities would be able to accommodate and implement a computer-integrated Theme Day. ▪ An impact study should be done to determine if a school's computer centre will be able to accommodate a learner population consisting of an entire grade group. ▪ The school should budget for the maintenance of a computer centre, appointment of additional staff members specialising in the field of information technology, the upgrading and maintenance of existing equipment.

Recommendations for future research will be discussed in the following section.

5.3.2 Recommendations for future research

Computer-integrated Theme Days have been implemented with success at St Alban's College, and the implications thereof have been positive for the learners. It is therefore recommended that future research should be done into the implications of computer-integrated Theme Days in South African public and private schools. The following questions offer possible focus areas to pursue the findings from this study in future:

- To what extent is it viable to implement Theme Days in South African schools?
- To what extent are the appropriate technological resources available at public schools to influence the outcome(s) of computer-integrated Theme Days?
- To what extent will the learners cooperate during computer-integrated Theme Days?
- To what extent are educators willing to participate in the concept of computer-integrated Theme Days?

Future research should initially be restricted to a number of schools in a predefined area. For instance, research can be done at selected schools in the greater Pretoria area. If research is viable, it can be extended to a more broadly defined area, which could include a larger number of schools such as schools in the Gauteng province.

Research limitations of this study will be discussed in the following section.

5.3.3 Research limitations of this study

The researcher experienced numerous limitations during the research for this dissertation. The implications of a computer-integrated Theme Day for learners at St Alban's College as a case study cannot be compared with Theme Days at other South African schools, whether they are public or private schools. Obvious reasons contributed to the limitations. Time constrains and limited resources such as the availability of the necessary funds and absence of co-researchers, who require payment for their effort, made it impossible to conduct a nation wide research on the implications of computer-integrated Theme Days at South African schools. No statistic data and sampling were included in this dissertation. The target population utilised for this study was too small to include extensive statistical analysis.

A limitation in the available printed and electronic literature related to computer-integrated education, more in specific computer-integrated Theme Days, is that the literature and related research reflected in the literature focus mainly on events and schools in the United States of America. Previous research in South Africa that related to this topic is limited to the research conducted by the Director of Technology at St Alban's College and Lippert (1993). Furthermore, dissertations and theses in the field of computer-assisted education focus mainly on the use of computer-assisted education at tertiary institutions and not in South African secondary schools. The reason therefore might be that students who enrol for the Master’s degree in Computer-Assisted Education are mainly from tertiary or training institutions and the business sector.

The methods of collecting data for this dissertation had a number of limitations. Observations of and interviews with key role players during the five Theme Days at St Alban's College were the main data collection instruments to answer and analyse the research questions for this study. The methods of data collected during that period had limitations, as some of the research questions could not be answered due

to a lack of appropriate information. E-mail correspondence with the Director of Technology at St Alban's College was utilised as an additional data collection instrument during the writing of this dissertation. These e-mails were sent to obtain supplementary information, as the data collected during the five Theme Days were insufficient to answer some of the sub research questions.

A final word on computer-integrated Theme Days will be discussed in the following section.

5.4 A FINAL WORD ON COMPUTER-INTEGRATED THEME DAYS

St Alban's College successfully managed to implement computer-integrated Theme Days. The implications of computer-integrated Theme Days were that the College managed to break down the barriers between subjects, as Theme Days provide the St Alban's learners the opportunity of an exciting and unforgettable learning experience that is closer to reality than just another 'typical' educational experience during an normal day at school. Furthermore, the learners as Theme Day participants are introduced to the concept of group work, and they are allowed to be creative, lateral thinkers and problem solvers.

A small committee of learners managed to acquire managerial skills while the College graduates who are entering the job market are equipped with the necessary cross-curricular life skills to cope in today's technologically advanced world.

Future research will determine the possibility whether research on the implications of computer-integrated Theme Days for learners in South African public and private schools is viable and whether a need therefore exists or not. These are all factors that need to be taken into consideration when assessing the implications of computer-integrated Theme Days for a school, the educators and its learners.