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Selected Factors Influencing Academic Success of First-Year Students in Seventh-day Adventist Secondary Schools in Rwanda

Salomon Maniraguha

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Andrews University
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SELECTED FACTORS INFLUENCING ACADEMIC SUCCESS
OF FIRST-YEAR STUDENTS IN SEVENTH-DAY
ADVENTIST SECONDARY SCHOOLS
IN RWANDA

A Dissertation
Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Salomon Maniraguha
December 1997
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APPROVAL BY THE COMMITTEE:

Chair: Jimmy Kijai
Member: Elsie Jackson
Member: Lenore Brantley
Member:  Gerald Lall

Dean, School of Education
Karen R. Graham

Director, Graduate Programs
Jerome D. Thayer

Date approved
Dec 2, 1987
ABSTRACT

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Salomon Maniraguha

Chair: Jimmy Kijai
ABSTRACT OF GRADUATE STUDENT RESEARCH

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Name of researcher: Salomon Maniraguha

Name and degree of faculty chair: Jimmy Kijai, Ph.D.

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Problem

Seventh-day Adventist secondary schools recruit students through a severe entrance examination. However, after 9 months of schooling, more than 20% fail without possibility of repeating the grade or pursuing studies in less academically challenging schools. They are pushed out without means of coping with real life.

This situation has multiple negative impacts on families who sell all their belongings in order to send their children to school where they can be prepared for a
better life. It is for the interest of the Rwandese to learn which factors may contribute to maintaining these students in school.

Method

Data were gathered from 317 students enrolled in the first year of secondary school in three Seventh-day Adventist secondary schools during the 1992/1993 school year. These schools were Gitwe Adventist College, Rwankeri Adventist College, and Mugonero Nursing School. Students responded to a questionnaire. Additional data were collected from files at their respective schools and from the office of Education Director of Rwanda Union Mission. Analysis of data was performed using chi-square and t-test.

Results

1. Family-background factors considered were education of parents, father's occupation, and family size. None were found to be related to first-year secondary-school success.

2. School characteristics such as residence patterns, school size, class size, and field of study were not related to first-year success.
3. Among student characteristics, only student behavior and academic background factors such as elementary-school grades in math, French, religion, and environmental study, along with elementary-school graduating class grade point average, and entrance examination score, appeared to be related to first-year secondary-school success.

Conclusion

From this study, it was concluded that first-year secondary-school success apparently depends primarily on previous academic success.
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CHAPTER I

INTRODUCTION

Setting

Rwanda is an African independent state located in the midst of four countries: Tanzania to the east, Democratic Republic of Congo (former Zaire) to the west, Burundi to the south, and Uganda to the north (Nyrop et al. 1969). It is approximately 10,288 square miles in area. Before the recent war, its population was estimated to be 7.75 million (Collier's Encyclopedia, 1993). With an average population density of 750 per square mile, it is the most populated African country (Fegley, 1993).

Education has always been a national priority. It takes one third of the national budget. The literacy rate is about 49.4%. The rate is higher for males (62.2%) than females (37.2%) (Fegley, 1993).

Religious organizations play an important role in education in Rwanda. One such organization is the
Seventh-day Adventist Church. The Union of the Seventh-day Adventists in Rwanda is actually composed of five Associations: East Rwanda, West Rwanda, North Rwanda, South Rwanda and Central Rwanda. When I collected my data there were only three associations: East Rwanda Association, North Rwanda Association, and South Rwanda Association.

In 1997, there are 313,208 baptized Seventh-day Adventist church members in the whole Union (General Conference of Seventh-day Adventists, 1997). In order to respond to the educational needs of its members Rwanda Union operates 32 elementary schools and 3 secondary schools. A university for French-speaking countries of the Africa Indian Ocean Division is also located in Rwanda.

The contribution of various religious organizations helped this young republic in trying to reach its educational goals as developed by the Addis Ababa Conference.

The Addis Ababa Conference in 1961 developed a plan of short- and long-term goals for educating a large number of elementary graduates in Africa. The plan intended that: (1) primary education was to be provided freely to
all school age children, (2) secondary education should take 30% of the elementary school graduates, and (3) higher education was to be provided to 20% of secondary-school graduates (Ndengejeho, 1985).

When Rwanda became politically independent in 1962 (Erny, 1981) 56% of elementary-school students were accepted to first-year secondary school. However, 12 years later the rate of acceptance dropped dramatically to only 7% and rose only slightly to 9.5% in 1988 (Erny, 1981).

Clearly, the Addis Ababa Plan was not achieved in Rwanda. After the coup d'état on July 5, 1973, the authorities of the second republic tried to establish a few more schools in areas where almost no secondary schools existed due to neglect of the first republic. This increase in secondary schools did not bring noticeable results.

At the beginning of the 1981-1982 school year, the Rwandese government initiated a new school reform on the secondary-school level. One of the objectives of this reform was to admit to secondary school 10% of elementary-school graduates. However, only during the 1987-1988
school year did the enrollment in secondary schools reach 9.5% of elementary-school graduates. Despite the efforts of the second-republic authorities in this area, the infrastructure in place could not satisfy the demand.

At this point, it is important to point out that to be admitted to a Rwandese secondary school, elementary-school graduates generally have to take an entrance examination. For public relations purposes, 10% may be accepted without taking the entrance examination. This examination covers arithmetic, French, and environmental studies including the basic elements of biology, history, geography, and civics. A passing grade is not determined in advance. It is determined by the number of places available in the secondary school(s). For example, if all secondary schools have a total of 3,500 places, only the 3,500 elementary-school graduates with the highest scores on the entrance test can be admitted. There is no a priori cut-off score. Since the number of elementary-school graduates admitted to secondary schools represents less than 10% of the total number of graduates who take the examination, the selected candidates are the highest achieving students of all elementary schools. Thus, places in secondary schools are very competitive and, perhaps, elitist.
Statement of the Problem

All over the world, school success remains a matter of great concern for parents, teachers, and school administrators. This is true especially in the Rwandese school system where a large proportion of first-year secondary-school students fail. Although the percentage of those who fail is relatively small compared to those who pass, it is larger than the percentage of those who fail in other secondary grades. According to Hanf (cited in Erny, 1981), the failure rate for the four secondary grades during the 1970/71 school year was 13.2%. Most of the failures were among first-year secondary students.

In the Rwandese school system, first-year secondary-school students who do not pass may not repeat. All first-year places are reserved for the elementary-school graduates (Education pour tous: Rapport pour le Rwanda, 1989; Ndengejeho, 1985). Consequently, no places are reserved for first-year secondary-school students who fail.

Depending on availability of places, those who fail in other grades may repeat. Actually, the present facilities cannot accommodate all the elementary-school graduates. Only about 10% of all the elementary-school
graduates are admitted into secondary schools (Education pour tous: Rapport pour le Rwanda, 1989; Ndengejeho, 1985).

Despite this stringent selection criteria of the candidates, the failure rate of first-year secondary-school students remains high as compared with the failure rate in other secondary-school grades (Erny, 1981).

Seventh-day Adventist education in Rwanda faces the same situation. The three Adventist secondary schools recruit candidates from 33 elementary schools. Only about 10% of the elementary-school graduates are admitted through screening by the Union entrance examination. Only those who obtain highest grades can be admitted. Despite this selection criteria, a significant number of those accepted fail the first year of their secondary education. Students who fail are not allowed to repeat the grade. Why do these students fail?

Many studies related to student achievement done in Western countries show that family background, student characteristics, and school variables are the factors that most influence student achievement. However, few such studies have been conducted in developing countries. In Rwanda, almost nothing has been done in this area.
Purpose of the Study

As no formal investigation has been conducted in this area, the purpose of this study was to examine what selected factors may be related to the academic success of first-year students in Rwandese Seventh-day Adventist secondary schools. Specifically, this study investigated the following questions:

1. What selected factors determine the academic success or failure of accepted students to complete the first year of secondary education in Seventh-day Adventist secondary schools in Rwanda?

2. What relationship exists between selected home background, student, school variables, and the first-year secondary-school student’s academic success in Seventh-day Adventist schools in Rwanda?

Research Hypotheses

Hypothesis 1

Hypothesis 1: There is a significant relationship between home background and academic success.

This hypothesis has three sub-hypotheses:

Sub-hypothesis 1a: There is a significant relationship between parents' level of education and academic success of first-year secondary-school students.
Sub-hypothesis 1b: There is a significant relationship between father's occupation and academic success of first-year secondary-school students.

Sub-hypothesis 1c: There is a significant relationship between family size and academic success of first-year secondary-school students.

Hypothesis 2

Hypothesis 2: There is a significant relationship between student characteristics and academic success during the first year of secondary school.

This hypothesis has 10 different sub-hypotheses.

Sub-hypothesis 2a: There is a significant relationship between gender and academic success of first-year secondary-school students.

Sub-hypothesis 2b: There is a significant relationship between students' elementary-school academic performance and academic success during the first year of secondary school.

Sub-hypothesis 2c: There is a significant relationship between elementary-school grade repetition and academic success of first-year students.
Sub-hypothesis 2d: There is a significant relationship between entrance examination scores and academic success of first-year secondary-school students.

Sub-hypothesis 2e: There is a significant relationship between taking/not taking an entrance examination and academic success of first-year secondary-school students.

Sub-hypothesis 2f: There is a significant relationship between students' curricular choice and academic success.

Sub-hypothesis 2g: There is a significant relationship between behavioral grades and academic success of first-year secondary-school students.

Sub-hypothesis 2h: There is a significant relationship between attitude toward school and academic success of first-year secondary-school students.

Sub-hypothesis 2i: There is a significant relationship between attitude toward teachers and academic success of first-year secondary-school students.

Sub-hypothesis 2j: There is a significant relationship between amount of time devoted to study and academic success of first-year secondary-school students.
Hypothesis 3

Hypothesis 3: There is a significant relationship between school characteristics and academic success of first-year secondary-school students.

This hypothesis has four sub-hypotheses.

Sub-hypothesis 3a: Among first-year secondary-school students, there is a significant difference between the academic success of students who live in the dormitory and students who live off-campus.

Sub-hypothesis 3b: There is a significant relationship between school size and academic success of first-year secondary-school students.

Sub-hypothesis 3c: There is a significant relationship between class size and academic success of first-year secondary-school students.

Sub-hypothesis 3d: There is a significant relationship between field of study and academic success of first-year secondary-school students.

Significance of the Study

This study may help in rescuing some at-risk students. Admission to secondary school is an
accomplishment and a privilege. In Rwanda, it is an event celebrated like few other events of life. However, one cannot help but believe this event really comes too early for anyone to decide who is competent and who is not. First-year students in secondary school face a difficult situation which needs to be considered. These students are now dealing with new teachers, new classmates, and a new school environment. This complete change seldom allows students to get enough extra help either from teachers or other students. It may take a couple of months to get acquainted with the new school environment, and 9 months of schooling may not be enough to decide, irreversibly, someone's future. Students do not have enough time to develop their potential. Once a student fails the first quarter, it is almost impossible for him/her to upgrade his/her grades enough for the rest of the school year.

Making this early a judgment of academic ability of learners can lead one to underestimate potential. Delayed development of intellectual ability does not necessarily mean absence of ability. Albert Einstein did not start to speak until the age of 4, and Woodrow Wilson could not
read before he was 10 (Gorman & Johnson, 1991). All of the labels given to such individuals were unfair because time proved that these individuals were among the intellectually talented people of human history.

It appears necessary, then, for those who are in charge of selecting first-year secondary-school candidates and those who decide on their promotion or failure to take a closer look at many different factors that affect school performance.

Students who are pushed out of school due to academic failure pay a high price. Failure to graduate means a loss of economic, political, and social privileges not only for the individual but also for the family. As Erny (1981) succinctly stated:

When a child is admitted to a school in Rwanda, from the beginning of the first year of school, he/she knows that he/she is going to school not for instruction but to become someone. In the last year of elementary school, a student waits anxiously for the national official examination which will decide whether or not he/she will become rich. When the results of the entrance examination are known, those who pass are already classified among rich people, and those who do not pass come back to their families very disappointed. In school, students continue to experience the same illusion: good conditions in school, protection and care which he/she experiences give him/her the impression that he/she is already the most important person.
In Rwanda, when someone goes to school and performs successfully, he/she becomes a model in his/her clan. He/she is appreciated by his/her social group according to how useful he/she is for the community. (Erny, 1981, p. 358)

As the personal, economic, social, political, and educational consequences of student failure are incalculable, it is in the best interest of any country, and especially for a developing country such as Rwanda, to provide sufficient education for its youth. This study is important in that it examines an area where little or no research has been done. This study, then, may: (1) show what home background variables, other than financial obligations, may be related to academic success. Such knowledge may assist schools to provide a better school-parent-community partnership; (2) provide new insights into what student and school variables are related to academic success in Rwanda. These insights may help schools to develop and implement effective intervention strategies aimed at helping at-risk first-year secondary-school students, (3) provide basic data for use in upcoming school reform which the Rwandese government may consider in the near future; and (4) serve as a basis for further research on the Rwandese school system.

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Definition of Terms

The definition of certain terms used in this study should be considered by the reader.

**Association** is a unit of church organization formed by a group of districts.

**Board of Education** is the executive committee of all Rwanda Union schools. It includes three union officers (Union president, secretary, and treasurer), Rwanda Union education director, principals of Seventh-day Adventist secondary schools, and association education directors.

**College** is an educational institution of secondary education.

**Commune** is a subdivision of a prefecture.

**Deliberation Committee** is a committee in charge of taking actions regarding failure or success. It includes the secondary-school principal (chair of the committee), vice-principal in charge of studies, vice-principal in charge of discipline, and teachers of the class for which the decision is being made.

**Division** is an administrative unit of the Seventh-day Adventist church composed of several unions.

**Doubled** means repeated (Lumumba, n.d.). (see p. 27 below.)
Entrance Examination is the examination administered to elementary-school graduates. The examination covers arithmetic, French, religion, and environmental studies. It is prepared by individuals appointed by the board of education according to their areas of competence. It is administered by individuals selected by the same board, and graded by secondary-school teachers and principals under the supervision of the Union education director.

Environmental studies include the basic elements of biology, history, geography, and civics.

Official National Entrance Examination is an entrance examination given by the Ministry of Elementary and Secondary Education to all elementary-school graduates from public schools and private recognized schools.

Prefecture is an administrative subdivision of Rwandese territory. Rwanda is divided into 11 prefectures which in turn are divided into communes.

Union is an administrative unit of the Seventh-day Adventist church composed of several associations.

Delimitation of the Study

This study is limited to first-year secondary students of Seventh-day Adventist schools in Rwanda during
the 1992-93 school year. These students were attending Gitwe Adventist College, Rwankeri Adventist College, and Mugonero Nursing School. These schools share the following characteristics which cannot be found in other schools.

1. Since the establishment of these institutions, they recruit both boarding and day students. Because of high tuition, students who cannot afford dormitory expenses stay off campus and are allowed to take classes with boarding students. Because of this practice, a number of students pursue their studies while living either with their parents, relatives, or friends or by themselves. A few years ago, some other schools started admitting day students, but the proportion of day students is low.

2. Seventh-day Adventist schools recruit students of both sexes. Many other schools have hesitated to mix boys and girls in one school. All secondary schools were segregated schools. Very recently and on an experimental basis, some schools have started to recruit a few students of the opposite sex. The representation of both sexes is far from equal, and the climate is not similar for both
sexes as it is in Seventh-day Adventist schools where co-
education has been practiced since the beginning of the
schools.

3. The Seventh-day Adventist secondary schools
recruit students mainly from Adventist elementary schools.
The percentage of non-Adventists is very low.

4. The entrance examination is prepared by qualified
people appointed by the board of education of the Rwanda
Union Mission. It used to be approved officially by the
minister of elementary and secondary education.

Considering the particularities of these schools, no
attempts are made to generalize the results of this study
to other secondary schools or to other secondary grades in
these schools.

Organization of the Study

This study is divided into five chapters.

Chapter 1 is an introduction of the study, which
includes the statement of the problem, the purpose of the
study, the significance of the study, definition of terms,
the delimitation, and the organization of the study.
Chapter 2 focuses on the review of the literature. Works done in the area of academic performance in Western countries and in the Third World are cited.

Chapter 3 presents the methods by which data were collected and analyzed.

The findings and the interpretation of the results of this study are reconsidered in chapter 4.

Chapter 5 gives a summary, discussion, conclusion, and recommendations for practice and further research.
CHAPTER II

REVIEW OF THE LITERATURE

Studies that examine relationships between home variables, student variables, school variables, and academic performance are abundant in industrialized nations such as the United States and the majority of European countries. However, such studies are few in most developing countries and almost non-existent in African countries. Thus, this chapter reviews studies carried out primarily in Western industrialized nations.

Home Background

Socioeconomic Status

Socioeconomic status is one of the major factors found to be related to achievement. Bowker (1993) affirms that "socioeconomic status and educational level of parents are more influential than school factors in whether a student stays in school or drops out" (p. 143).
In fact, families can play an important role in the success of the children. They can secure a positive environment for learning by providing school materials, reviewing key subjects with children, helping children with homework, reinforcing school attendance, and rewarding children when they excel in their school work (Nzamutuma, 1992). The high rate of failure experienced by children from low income families may be due to the families' inability to provide an appropriate learning environment for their young people (Gama & De Jesus, 1991).

Phelps et al. (1990) note in their study that overwhelming evidence suggests that individuals from high socioeconomic backgrounds get higher scores on standardized achievement tests than do those from low socioeconomic backgrounds. In the same study, they found that children attending rural schools are at higher risk of failure than children attending more affluent urban or suburban schools. They explain that situation by noting that

the rise in child poverty has had a direct influence on schools in rural America. The cultural baggage which is produced as the result
of living in poverty conditions can be manifested in a number ways by rural youth. Larger percentages of rural children are considered by school officials to be substance abusers, to suffer from depression, to be sexually active, to be involved in crime, and to be victims of child abuse. (Phelps et al., 1990, p. 3)

Shaffer (1989), referring to earlier research studies, affirms that children from "intellectually stimulating home environments" probably receive more support from their parents. These parents are often warm, responsive, and eager to be involved in the school work of their children. As Shaffer (1989) indicates:

It is not at all surprising that children from these enriched home settings often have high IQs, after all, their parents are obviously concerned about their cognitive development and have to spend several years encouraging them to acquire new information and practice many of the cognitive skills that are measured on intelligent tests. (p. 372)

Children from higher income families have significant advantages over those from lower income families. Studies have shown that pupils of similar intellectual ability may perform differently because of family income background (Grissmer, 1994). Most of the time, parents of wealthier families who themselves are educated try to assist their children materially and intellectually by providing all
necessary material that their children may need and by helping them with their homework and/or by providing additional explanation for a subject not well understood during class presentation.

Sometimes, some high-school students intellectually talented but from poor families leave school because of financial hardship, which prevents them paying class dues, buying a car, or buying tickets to a game.

Parents' Level of Education

There are numerous studies in Western countries, especially in the United States, related to this issue. Chen, Lee, and Stevenson (1996) found in their study that a father's and mother's education was statistically related to school achievement. This agrees with Hirtacsu (1994) who studied Turkish children and found parental educational level significantly related to students' grade point average.

Children from educated families have many advantages. Their parents may be more involved in the educational process of their children. This involvement includes helping children with their homework, supervision of their
study at home, contacts and visits with teachers and school administrators (Shumow, Vandell, & Kang, 1996). This kind of involvement is a key to a child's school success (Coulombe, 1995).

Albert and Runco (cited in Keasey & Little, 1990) have found in their study of talented individuals that "gifted men and women who achieved eminence often had parents who devoted an almost missionary zeal to their children's education" (p. 453).

Referring to James and Robinson, Keasey and Little (1990) reported that a "higher level of education, occupation, and income among parents predict intellectual achievement of children with amazing regularity" (p. 443). They continued to affirm vigorously the transmission of educational values by well-educated parents to their children.

In a longitudinal study of mentally talented students, Benbow and Arjmand (1990) concluded that paternal educational level was the most powerful predictor of high academic achievement in mathematics and science.

Lees (1994) indicated that educated parents play a great role in the educational success of their children. They can serve as models, they can influence educational
aspirations, and they can spend enough time with their children, thus increasing their academic skills.

Parental level of education has an immediate impact on adolescent high-school performance and on future expectation. Grant and Snyder, cited by Nielsen (1987), showed in one study that "53 percent of 1980 college freshmen had fathers with more than a high-school education, and only 17 percent had fathers without a high-school diploma" (p. 324). These data suggest that most adolescents whose parents have a lower level of education drop out of school. Those who were able to finish their high school did not plan on a college education.

Rockwell (1972) also found that the number of high school dropouts was proportional to the level of their parents' education. He affirms:

Those whose parents had some college did not drop out of school. Those whose parents had completed high school dropped out to the smallest extent; next ranked parents with one to three years of high school; parents with eight years of school, parents with one to four years of school, and parents with five or six years of school who presented the largest proportion of drop outs. (p. 14)

According to Deschamps (1992), the dropout rate is normally higher among the lower social class than in the higher social class. This indicates that children from
poor families are more likely to drop out from school than children from wealthier families (National Center for Education Statistics, 1995). This seems to be due to a lack of school fees, lack of encouragement from parents, and less help with academic difficulties from parents. Some poor families in developing countries encourage the children to leave school in order to contribute to the economy of the family. This contribution includes gardening, taking care of cattle, or baby-sitting younger brothers or sisters.

Manor (1987) reports that the father’s education is one of the three components of the socioeconomic status that are related to school achievement in Israel. Other components include the father’s country of origin and family size. In Scandinavia, however, the mother’s education has the highest power in determining the academic success of Scandinavian high-school students (Kyostio, 1973).

Gama and De Jesus (1991) report that in Brazil education of parents plays a great role in children’s academic achievement. Educated parents provide an adequate cultural and psychological environment that fosters the positive growth and learning for elementary-
school children. When this enriched environment is missing, elementary-school children may experience many school difficulties. According to Gama and De Jesus (1991), "every 100 children who started first grade in the decade of 1970, only about 33 finished 4th grade and only 14 finished eighth grade" (p. 2).

American high schools face almost the same problem. Students who tend to drop out of school have fathers who did not graduate from high school. The dropout rate is three times higher among students whose parents have not finished high school as compared with those whose fathers have a college education (Papalia, Olds, & Feldman, 1989).

Teachers also attribute a high failure rate to the socioeconomic status of parents and the parents' lack of interest in their children's education (Gama & De Jesus, 1991). The involvement of parents in their children's education by those of middle and high socioeconomic status helps to prevent an increase in the failure rate. These parents often reward their children's efforts. When grades are poor, the parents encourage the children to do better and help them with extra homework. Also, parents can limit or prevent them from doing some preferred
activities such as watching T.V., telephoning, playing
with other children or, in fact, by punishing.

Despite many studies affirming the role of the father
in influencing children's education, especially the
mastery of mathematics, Glewee and Jacoby (1993) think
that the education of the father has little impact on
children's academic achievement. For them, the education
of the mother is more closely related statistically to
children's school success or failure. This idea agrees
with Clignet and Foster, reported by Lumumba (n.d.), who
wrote:

The higher the level of education reached by
students' fathers, the higher were the rates
repetition of the students. For example, among
students whose fathers did have any formal
education, 32 percent had doubled a class at
least once, compared to 42 percent of students
whose fathers had more than a primary education
[sic]. (p. 24)

Recognizing the importance of the mother's education
on children's achievement, Grissmer et al. (1994) affirm
however that

the effect of father's education is somewhat
larger than that of mother's education, even after
controlling for mother's education. The relationship
shows that having father who is a college graduate
versus one who is high school graduate increases
scores by about .40 of a standard deviation for both
mathematics and verbal scores. (p. 59)
Cherian (1992a) found that parental education for the population of Xhosa (Transkei-South Africa) was related to the achievement of children of both sexes. Examining the effect of parental education on the achievement of children from broken homes, he found a positive relationship between parental education and academic success. A similar situation also was found (Cherian, 1992b) in both monogamous and polygamous families. Cherian (1992c) goes further, affirming that children from educated parents can perform better regardless of the life status of their parents. Educated parents not only can provide academic support, they can also even when deceased provide a strong motivation for academic perseverance.

Lumumba (n.d.) conducted his study in the Ivory Coast. He points out that in developing countries parents of all categories are eager for their children to attain a certain level of education. However, children from families with a high socioeconomic background can pursue their education despite their academic performance, whereas whether other children stay in school depends on their academic achievement. This means that education is one of the privileges of children from rich families.
In case of dismissal due to low performance or behavior problems, poor parents simply accept the verdict imposed on their children. University-educated parents "may either send those children to private schools or use means which may ignore the official criteria of selection and assignment to public school in order to provide these children chances to pursue their education" (Lumumba, n.d. p. 35).

Educated parents in developing countries use every possible means to find a way to provide a good education for their children. These include: (1) getting a place in case of failure of entrance examination, (2) finding a room in a dormitory when places are very limited, (3) paying high-school tuition in private schools, (4) finding admission in neighboring countries or abroad, and (5) finding a scholarship for a foreign university.

Fathers' Occupation

In developing countries, the best-paying jobs are filled by men. Women usually are housekeepers, child bearers, and caretakers. Since the family income usually is earned by men, this study focuses mainly on the father's occupation rather than the mother's.
Banks and Finlayson (n.d.) have observed that higher incomes are related to school success. As family income in developing countries is related to the father's occupation, one can conclude that in the Third World the father's occupation influences the children's achievement at school.

However, Lees (1994) seems to disagree. According to him, ability and motivation of the individual are the best indicators of school success. This may be true for some Western countries, but it may not be true for African countries. In Africa, students from poor families, regardless of their motivation and intellectual abilities, may experience school difficulties that can have serious consequences on school performance. For example, these students often have overwhelming financial problems. Frequently they are sent home to get funds for unpaid tuition, or they may not be able to replace a very old school uniform. Sometimes they do not live in a dormitory or even with parents or relatives, and they may not have basic school materials such as books, pens, or exercise books. Some simply may not be able to pay for transportation from home to school and vice versa. If
they are not boarders, they may not be able to pay for their lunch at school. All these concerns absolutely can conflict with a good learning climate.

In Greece, Polydorides (1984) found that a father's occupation was among the most powerful social background variables related to academic success. In their longitudinal study involving American, Chinese, and Japanese adolescents, Chen et al. (1996) found that paternal occupational status was one of the factors of school achievement.

Nzamutuma (1992) studied achievement in the elementary schools of Rwanda. He found that the occupation of the parents was more important than the education of parents when it came to influencing the achievement of the elementary-school children. One of the main reasons, he thinks, is that the occupation of the parents plays a major role in one's self-esteem which, in turn, contributes positively to school success.

Family Size

The size of a family negatively impacts the family income. As the number of children increases and the level
of income stays the same, it becomes difficult for the family to meet the basic needs of each family member. Sometimes, the family becomes incapable of providing a rich environment for learning and cognitive growth. Furthermore, when the family size enlarges, intervention and help from parents is less likely as it becomes more difficult if not impossible to interact positively with many children.

Hanushek (1992), analyzing the effect of family size on children's achievement by comparing an only child to children in a "two-child" family, found that "the children in a two-child family would each achieve about 3.5 percent less in reading scores by the end of the sixth grade. The drop with increased family size is even more severe in vocabulary scores" (p. 101).

According to his findings, Hanushek thinks that "achievement falls systematically with increased family size" (p. 112). One study conducted in South Africa with a sample from the Xhosa tribe revealed that children from small families scored higher when compared with those from large families. These findings suggest" a significant negative relationship between family size and academic achievement" (Cherian, 1990, p. 126).
Hogan (1990), who reviewed a study on family size and achievement done by Blake (1989), seems to agree with the negative effect of family size on achievement. According to him, the "family size is negatively related to the verbal ability component of IQ but has little effect on nonverbal ability, supporting the thesis that a large number of children dilutes parental resources" (p. 305). Therefore, families with many children may not have enough means to provide an environment that is at once stimulating and supportive for learning (Davis, 1990).

Family size becomes a determinant factor in some poor countries where education is very expensive (Bolarin, 1991). As indicated in one study conducted in Thailand by Knodel and Wongsith (1991), which involved a national sample, family size was a determining factor of education especially at upper secondary education where school expenses are beyond the reach of many families.

In industrially developed countries, studies seeking to learn how family size affects scholastic achievement revealed that children from large families are disadvantaged compared with those from small families (Powell & Steelman, 1993). However, the opposite point of
view has been found in some cultures. For example, in Israel, Shavit and Pierce (1991) found that the size of an Arab family has a positive effect on school achievement. In this cultural subgroup, relation among families have been portrayed thus:

The extended families, especially those that live in close proximity, provide a pool of adults who can supervise children, help them with schoolwork, provide psychological support and offer financial assistance when needed. Such a support network helps large families cope with the burden of raising many children and increases the resource-base from which children can benefit. Therefore additional children do not dilute the resource-base in the same linear fashion as in nuclear-family-based societies. (p. 329)

Student Characteristics

Sex

Several Western researchers have studied the domain of sex difference among students. Most have concluded that the areas in which sexes differ are most likely mathematics, sciences, and languages (DeBaz, 1994; Robinson, Abbott, Berninger, & Busse, 1996). According to Beattie (cited in Gray, 1985), these "differences between boys and girls in achievement were as great as or greater than the differences between young and older entrants" (p. 6).
Gray (1985) has noted that "five-year-old girls were superior in language and readiness prior to kindergarten" (p. 6). Lagerstrom, Bremme, Eneroth, and Magnusson, (1991) found that boys are successful in spatial ability whereas girls perform well in word fluency.

In their study involving young children advanced in mathematical reasoning, Robinson (1996) recently found that boys' scores on mathematical reasoning were significantly high compared to girls' scores.

Examining the results of the ACT Assessment Program (American College Testing Program, 1988), Colangelo and Kerr (1990) found that girls scored perfectly in English at more than 2:1 ratio compared with boys. Boys scored perfectly in Mathematics at more than 3:1 ratio compared with girls. Boys outperformed girls in social studies by more than 2:1. In Natural Sciences, boys attained perfect scores by more than a 5:1 ratio compared with girls. (p. 406)

Pearson and Ferguson (1989) who studied gender differences in patterns of spatial ability, environmental cognition, and math and English achievement in late adolescence wrote:

Reliable gender differences in MRT (Mental Rotation Test), DAT (Differential Aptitude Spatial Relations subtest) and Math and English
ACT achievement scores were found in sample of undergraduates, with men consistently outscoring women in ACT math and spatial abilities, and women consistently outscoring men in ACT English. (p. 428)

In a cross-cultural study involving Americans, Chinese, and Japanese, Lummis and Stevenson (1990) found that in these three different cultures, since the beginning of elementary school, boys were performing better than girls in solving problems requiring estimation of quantity and whereas girls were better in verbal and auditory memory.

However, Skaalvik (1990), in the study of sixth-grade Norwegian students, found that the girls' scores in Norwegian and English were significantly higher than boys' scores, but the difference in mathematics scores did not show a significant gender difference. Skaalvik and Rankin (1990) have not found significant differences between boys and girls related to general academic self-concept or to math achievement.

Works of some researchers have shown that sex differences increase as students advance in studies. "Even in the early years when girls outperform boys in areas dealing with general developmental tasks, there appear to be no difference in mathematical achievement
between the two" (Rudisill & Morrison, 1989, p. 571). The sex differences become apparent when they are in secondary school, and they become significant after college (Benbow & Arjmand, 1990).

According to Nielsen (1991), at a young age, females perform better than males in math computation. However, this ability disappears with the onset of adolescence. By the age of 14, boys start to show their superiority in solving mathematical problems. In the same context, Peltz (1990) found that by the age of 11 boys consider science as a masculine subject, whereas girls are still neutral. By the age of 14, girls accept that males are more competent than girls in science. Peltz goes further by affirming that adolescent girls are certainly able to become scientists, but they generally score lower than boys on science achievement tests. Most research attributes this unfortunate situation to "a fear of success that causes them to avoid situations in which they might become successful and to down play their intellectual talents" (Nielsen, 1991, p. 194).

Maccoby (cited in Nielsen, 1987) affirms, however, that boys and girls have the same mathematical ability. From the beginning of adolescence, boys begin to show
their mathematical competence whereas adolescent girls show their superiority in verbal abilities, which include "comprehending written passages, defining words, understanding logical relations, writing creatively, and verbal fluency" (p. 115).

The idea of gender differences at the age of adolescence was also reflected in the comparison of adolescents' scores on the Preliminary Scholastic Aptitude Tests (PSAT) from 1947 to 1980. The analysis of these scores revealed that girls score higher than boys on grammar, spelling, and perceptual speed; boys score higher in spatial visualization, high-school mathematics, and mechanical aptitude" (Nielsen, 1991, p. 191).

It seems that sex differences tend to disappear during higher education. One study recently conducted at the University of the North of South Africa involving first-year, bachelor's degree students with a mathematics major pointed out that no differences in performances were found among men and women (Cherian & Siweya, 1996). This finding seems to agree with Kianian (1996) who found no biological evidence of mathematical differences among men and women attending post-secondary education. According to him, the legendary mathematical differences may be due
to environmental conditions such as attitude of societies towards women's roles and lack of job opportunities for women in this area. Referring to Friedman (1989), Kianian (1996) thinks that "we may expect that as the social and economic roles of women change, levels of mathematics participation and performance of women change accordingly" (p. 590).

One study done in the Ivory Coast had the objective of finding students who had repeated a grade and those who were regularly promoted, indicates that the high failure rate of women may not be due to lack of intellectual ability. This study found that 44% of the female students from more advantaged families have repeated a grade compared to 34% of male students (Lumumba, n.d.). One possible reason may be that girls have family duties to perform after classes. This means that, in comparison with boys, girls may not have enough time to devote to school-related activities while they are at home. They may help their mothers with cooking or may care for younger brothers or sisters.

Prior Academic Performance

In order to do well in secondary school, students
must have a good elementary-school preparation. If there is a link between elementary- and secondary-school curricula, the mastery of elementary-school subjects should facilitate the mastery of secondary-school subjects. This idea agrees with Ausubel (cited by Cavallo & Schafer, 1994) who found that prior knowledge is very important for meaningful learning.

Daniels (1995) also found that even at kindergarten level, preschool experience was related to academic success. Children with preschool experience were socially and emotionally more mature than children who did not have preschool experience from either their families or daycare (Gray, 1985). These findings agree with Farrell et al. (1995) who investigated the effect of English language background and school achievement. In their study they reached the following conclusion:

Learning to read in kindergarten was not only related to higher reading skills, but it reduced the need for remediation at both the elementary and high school levels. Students receiving the kindergarten reading instruction fared better in all ways than those who did not receive the instruction. (p. 8)

In many high schools, reading problems have been reported as a cause for failure. As a matter of fact,
language plays a great role in the learning process. First, language is the only means through which instruction is transmitted. If the language is not mastered, it may be difficult if not impossible to understand what is going on during a class presentation. Second, language is directly associated with self-concept, which in turn is related to academic achievement (Duongsaa, 1986).

The mastery of the language of instruction seems to be a very serious problem in developing countries. In Ghana, for example, mastery of the English language is the factor most likely to allow elementary-school graduates to compete for admission in secondary school. As places available are very limited, only a few students are accepted in secondary school. In order to be selected, elementary-school graduates must successfully pass an entrance examination. Only those who master the English language have a chance of doing well in this examination (Shiman, 1970).

In French-speaking countries, elementary-school graduates face a similar problem. Since the French language is the means of instruction, students who do not
master French have less chance of getting into secondary school. Once accepted, it is very difficult to face academic challenges.

One must note here that in developing countries the language used in school is totally different from that used in the home. In most cases, family members interact in a vernacular language, whereas school children have to study in French, or in English. A few Westernized, middle-class families use a foreign language (English or French). All working-class families use a vernacular language. It is understandable that the children from these families experience a serious learning problem due to a language that is not mastered.

Students from middle-class families are privileged in many ways. When a subject matter is not well understood, parents may provide additional explanation. When middle-class parents use a second language in their homes, which is the language of instruction, students from such homes have an advantage over those whose parents do not use the language.

Besides the language of instruction, some subjects may have a more predictive power of school achievement than others. Campbell (1965), in his study of the
Louisiana freshman class for the academic year 1963/64, found that Louisiana high-school graduates who have taken four units of mathematics performed better than those who had taken the three units required for college admission. Those who had completed only three units had to take remedial mathematics in order to show progress and remain in school.

Armstrong (cited in Rudisill & Morrison, 1989) provides evidence that "mathematical ability and intelligence are strongly and positively related" (p. 572). In the same context, high-school science has also been found correlated with college achievement. High-school students who had taken three or more units showed a better performance during their college freshman year than those who had taken less than three high-school science courses (Campbell, 1965).

Graduating Class GPA

According to Campbell (1965), a high-school grade point average is positively correlated to a college grade point average. In his study of the 1963-64 freshman class of Louisiana State University, he found that of 598
freshman who had a "C" high-school average, 161 (27%) successfully completed the freshman year, and 107 (18%) were authorized to take classes on a probational basis. However, only 4.6% of the students who had a "B" or better average in high school were unable to succeed during their college freshman year. Beaty's recent study (1994) suggested the same conclusion.

Astin, Korn, and Green (1987) found that the average grade and the admission test score on SATs or ACTs are the strongest freshman predictors of success or retention. Their study showed that a high-school student who has a grade point average of A or A- "is seven times more likely to complete a bachelor's degree in four years than a student whose grades were C+" (p. 39). The same authors concluded that "students with the highest test scores and grade point averages, for example, are 15 times more likely to get a bachelor's degree in four years than students with the lowest test scores and grades from high school" (p. 40).

Another recent study intended to assess the variables predicting academic performance of Black freshmen showed that the scores on "SAT-Math or SAT-Verbal" do not
contribute to achievement of Black freshmen. The variables reported by Black students as related to college grade point average were "support from friends and relatives, pride in accomplishment, not getting easily discouraged, and having commitment to help others" (Rogers, 1984, p. 6). But, high-school grade point average was above all the best predictor of college success for both male and female Black freshmen (Van de Water & Augenblick, 1987).

Graduating Class Rank

Johnson (1993), who studied the factors of school success of African American college males affirms that the high-school class rank is the best predictor of school achievement for all subjects involved in his study.

Thornell and Jones (1986) examined the high-school rank and ACT as predictors of grade point average of the first quarter of the freshman year and found that the high-school rank had a greater predictive power than ACT scores. According to Trusheim (cited in Thornell and Jones, 1986), "high school rank is the best single predictor of college freshman grades" (p. 8).
Referring to Trusheim's conclusions, Thornell and Jones (1986) wrote:

High school rank is a better predictor for grades and completion of a college degree, and that the test score SAT adds "virtually no additional information that would help the typical college to maximize the percentage of correct admissions decisions". (p. 8)

As for Wilczenski and Gillespie (1992), high-school rank is the best predictor of "the first-year college grade point average for students with and without learning disabilities" (p. 20). Their study revealed that "approximately two thirds of high and low academically achieving students in both groups were correctly classified by high-school academic performance" (p. 202). This agrees with House (1994), who believes that the high-school percentile rank and ACT composite scores are consistently correlated with college cumulative GPA.

Keeley et al. (1994), in their study of the relationship between high-school academic background, admission test scores, and college mathematics achievement, found the high-school class rank has a predictive power of college mathematics achievement.
Grade Retention

Lenarduzzi and Mclaughlin (1992) examined the long-term effectiveness of grade retention and promotion of high-school students and found no significant difference between the promoted and nonpromoted students. After 4 years, during which this research was taking place, the researchers found:

The average grade-point average decreased over the duration of the research (1.229 after one year to just .661 by the end of the four years). Unfortunately, the mean number of days absent by the group also increased from an average of 15.714 after year one to 104.74 by the end of year four. The number of students who dropped out across groups was very high (36% for the promoted group to 42% for the nonpromoted group). (p. 113)

From the data above, it is clear that grade retention does not improve academic achievement. Nason (1991) agrees with this point of view. His findings revealed that promoted students were able to make "academic gains" of 8 to 12 months whereas retained students made only about 6 months' progress.

Rose, Medway, Cantrell, and Marus (1983) studied the "retention controversy" and concluded that children who repeat a grade may perform less than students who passed. In their study, they found that only 20% to 35% of
retained students acquire new content knowledge during their second year, whereas 40% of retained students actually learn less than at-risk students promoted to first grade.

Those who support grade repetition, like Pierson and Connell (1992), think that repeating a grade may be beneficial for academic achievement only for early elementary grades. These opponents think that, at this level, retention does not harm self-concept so much that it has an impact on academic achievement. On the contrary, retention may be a component of an effective intervention for children with academic difficulties in contrast to no intervention. This assumption opposes Nason's (1991) findings, which claim that "retention in kindergarten or first grade does not produce long-lasting academic gains, but rather increases the likelihood that the student will become a high school dropout" (p. 302).

Besides this negative side of grade repetition, its effect on a child's self-concept needs to be taken into account. Very often, retained students show a low self-esteem (Setencich, 1994), experience rejection by classmates, and seem to have more difficulty in social
adjustment than students who were permitted to progress to the next grade (Shepard & Smith, 1989).

Shepard and Smith (1990) believe that grade retention does not help children to catch up. They found that "retained children may appear to do better in the short term, but they are at much greater risk for future failure than their equally achieving, non-retained peers" (p. 84). When retained children go on to the next grades, they perform more poorly on average "than if they had gone without repeating" (Shepard & Smith, 1990, p. 84).

The Association of California Urban School District reported by Shepard and Smith (1990) affirms that researchers of the dropout phenomenon have consistently found a significant relationship between grade retention and drop out. . . . Dropouts are five times more likely to have repeated a grade than are high school graduates. Students who repeat two grades have a probability of dropping out of nearly 100 percent. (p. 85)

Referring to their study done in 1989 involving 20,000 to 80,000 students, Shepard and Smith (1990) found that retained students increased the possibility of dropping out of school by 20 to 30%. As Shepard and Smith (1990) wrote:
In Austin, Texas, African-American males with below average achievement have 45 percent chance of dropping out of school, but African-American males with identical achievement scores who have repeated a year of school have 75 percent chance of leaving school before graduation. (p. 85)

Neill and Medina (1989) also found that the possibility of dropping out of school for a student who repeats a grade increased by 20 to 40%. This means that "students who are not promoted because they have failed to reach arbitrary cutoff scores on often unreliable, invalid, and biased standardized tests are more likely to drop out of high school" (p. 693).

Shepard and Smith (1989), who reviewed the research done on school retention from 1984 to 1988, revealed:

1. Kindergarten retention does nothing to boost subsequent academic achievement;
2. Regardless of what the extra year may be called, there is a social stigma for children who attend one extra year;
3. Retention actually fosters inappropriate academic demands in first grade. (p. 2)

Grade repeaters do not benefit from an extra year spent in a transition room. As Shepard and Smith (1989) affirm, there were two groups of children from kindergarten, one composed of retained children, another of promoted children. At the end of first grade, these
children of both groups were performing equally on "standardized math scores, or teacher ratings of reading and math achievement, learner self-concept, social maturity, and attention span" (Shepard & Smith, 1989, p. 2).

Studies that favor grade retention suggest also that children who are retained may perform well during the first year. The readiness gains may not persist during the second year (Shepard & Smith, 1989).

Even though the retained children maintain their academic improvement during the second year, there will be no difference between retained and promoted students after the third year (Walters & Borgers, 1995).

**Entrance Examination Score**

An entrance examination taken in Rwanda is similar to the USA entrance and placement tests such as the School and College Placement Test widely used in the United States. The entrance examination used in Rwanda is administered to elementary-school graduates. The purpose of this test is (1) to find the area of study that can best fit the capability and the desire of the examinee and
(2) to determine those who are eligible for secondary-school studies.

In Ghana, the test scores of a similar examination are used for three purposes: (1) to determine if the candidate can be admitted to secondary school, (2) to select the type of school, and (3) to anticipate one's chance of entering university after the completion of secondary school. In Ghana, "the common entrance examination seems to be, without doubt, the most important examination that the student ever takes" (Shiman, 1970, p. 203).

In both countries, the main objective of the entrance examination is to try to maximize the possibility of success of the students who are admitted to secondary school.

The U.S. school system has different entrance tests comparable to those mentioned above, but they fulfill basically the same objective: They are used to assess the potential success of the candidates.

Smith (1993) studied the relationship between High-School Placement Test Scores, American College Test Scores and the final high-school grade point average for all Central Catholic high-school students of Toledo (Ohio)
and found that both the High School Placement Test and the American College Test were good predictors of final high-school grade point average.

Hamdi, Abdulrazzak, and Nada (1992) conducted a study with the intention of finding the best predictor of academic achievement of undergraduate students in Beirut University. Their findings revealed that the entrance examination was among the variables found related to academic success. Other variables were the type of certificate the students hold, the students' desire, sex of applicant, and high-school grades.

Despite a tremendous debate about the effectiveness of the Scholastic Aptitude Test (SAT) in predicting academic success of college students, Jenkins (1992) suggests, however, that it "can be used as supplement to high school grade point average, and should only be used cautiously in predicting academic success" (p. 8).

Even if some people still question the prediction of these tests, it has been observed that in school systems where these entrance examinations are used, students have a much better chance of getting into the field of study that is more or less affordable academically. Those who
fail or drop out are among those who obtain low test scores on entrance examinations (Rock, Ekstrom, Goertz, & Pollack, 1985).

School Choice

As in other countries, in Rwanda the secondary-school system is at once diversified and professionalized. The majority of secondary schools have more than one section. These schools are called Groupes Scolaires. Every section has its own curriculum emphasizing one field of study. For instance, the curriculum for math-physics, without neglecting general and other science courses, puts much emphasis on mathematics and physics, whereas the modern language curriculum emphasizes languages. For example, the modern language curriculum has about 3.34 weekly class periods of mathematics and physics, the math-physics curriculum has about 10.4. However, the language curriculum has 23 weekly class periods of languages, whereas the math-physics curriculum has only 10 weekly class periods of languages.

Students enrolled in the same program are required without exception to take the same load and the same
curriculum. Because of this, students generally are allowed to choose the curriculum that seems to fit their intellectual ability and professional goals. However, sometimes it becomes difficult for the orientation team to satisfy the choices of all applicants. It is assumed that some students who are obliged to take a curriculum that they have not chosen may experience school difficulties and may drop out or be excluded.

Individual choice may play a great role in the school performance of secondary-school students in Rwanda. In the United States, as reported by Nathan (1987), providing choices in schools has facilitated to

1. reduce dropouts,
2. increase student achievement and appreciation of learning,
3. improve parental involvement and satisfaction,
4. provide extra challenge for students dissatisfied with the convention program,
5. raise the morale of educators who were allowed to create distinctive programs from which families can choose. (p. 747)

Raywid (1987), notes that school choice not only allows schools to "deal better with human diversity, it also enables them to motivate students more effectively" (p. 767). Raywid also reaffirms that school choice "enhances the efficacy of teachers, the accomplishments of
learners, the satisfaction of parents, and the confidence of the public in its schools" (p. 769).

In the Rwandese school system, the choice of the first-year secondary-school curriculum is very crucial. It determines almost irreversibly the academic and professional goals of the student. When students are admitted into a field of study that they have never thought of, it may be less interesting to keep up with it as it does not reflect their academic competence, academic and professional goals, and interests.

Student Satisfaction

One study aimed at analyzing the difference in college-student satisfaction was done by Starr, Betz, and Menne (1972). A sample of 1,968 students from Iowa State University participated in this study. A measure of a college student was used as an instrument to investigate student satisfaction in the following areas: compensation, social life, working conditions, recognition, and quality of education. The dropouts identified at the end of the academic year were classified into two categories: students with passing grades and students with failing grades. The analysis of the
findings revealed that the non-dropouts had the highest satisfaction scores, the dropouts with passing grades ranked next, and, finally, the dropouts with bad grades ranked lowest.

These findings confirm the hypothesis that "students who remain in college will be more satisfied than students who drop out; further, those who leave for nonacademic reasons will be more satisfied than academic dropouts" (p. 319).

Beelick (1973) studied the sources and effects of student satisfaction and dissatisfaction using 217 subjects randomly selected from 2,200 students from grades 10 to 12 of a midwestern high school. His research revealed a positive relationship between student satisfaction and academic performance. The percentages of student responses categorized as sources of satisfaction were identified as: (1) school policy and administration, 6%; (2) interpersonal relations, 10%; (3) teachers' behavior, 11%; (4) school activities and schoolwork, 25%; (5) recognition or lack of recognition, 46%; and (6) achievement or lack of achievement, 40%.

Another study done by Unger (1972) involved 86 students enrolled in Grade 9 social studies in Union High
School (1970/71). The objective was to examine the relationship between student satisfaction with school and academic achievement. The data analysis revealed a positive relationship between attitude score and the grade point average for 14-year-olds of both sexes. The correlation for 15-year-olds was low, and the correlation for girls was higher than that for boys. This discrepancy between boys and girls is probably due to the fact that girls tend to be "intropunitive" and boys "extrapunitive." This means that girls think that the source of their dissatisfaction is within themselves, whereas boys believe that the source of their dissatisfaction is due to external factors such as adults and their immediate surroundings.

The results of a study done on students in Oregon State University (Martinson, 1974) intended to find the relationship of college satisfaction and academic success failed to establish that relationship. Students involved in that study were divided into three categories of academic achievement: highly satisfactory, satisfactory, and unsatisfactory. Despite all expectations, no difference was noted in the level of student satisfaction.
All three groups expressed a dissatisfaction of some kind. Even students who were academically successful were dissatisfied at the end of one month, or at the end of one year. The conclusion of the study suggests no relationship between student grade point average and the feeling of satisfaction.

Furthermore, the same study showed a low positive correlation for the high-ability students and the low negative correlations for the low-ability students. This again reaffirms that no relationship exists between student performance and attitude toward school (Martinson, 1974). These findings agree with Wince (1995) who found a weak relationship between a student's satisfaction and academic success.

**School Characteristics**

The main school characteristics found in literature to be related to academic performance are (1) residence patterns, (2) school size, (3) class size, (4) class attendance, (5) homework, (6) school climate, (7) teacher quality, and (8) school effectiveness.

**Residence Patterns**

Shiman (1970) thinks that boarding schools may have a positive influence on achievement by reducing negative
influences of socioeconomic status. When comparing students from different socioeconomic backgrounds in Ghana, he found that "among both the day students and boarders, the high-SES status children perform slightly above below average, while the sons of farmers perform slightly above" (p. 188). As an explanation, these students have been carefully selected through entrance examination and the chances are very low for the acceptance of those with average and low ability.

Considering boarders and non-boarders, he observed, however, that boarding students performed better than non-boarding students. Those who have been in the school's compound during the 5-year secondary-school course had a much better chance of passing all five subjects, including English.

Students who live in the dorm are more privileged than those who live in the community. They have electricity at night, they can use efficiently the school library, they can easily get help from their classmates, and they study under the supervision of school authorities during night hours.

Alexander and Simmons (1975) reviewed the literature on educational-production functions for developing countries and also came to the conclusion that "boarding
may have an important influence on achievement independent of home background. It results in equal exposure to a learning environment for all students, and this may modify the influence of individual differences in home background" (p. 16).

For Kowalewski, Holstein, and Schneider (1989), dormitory and apartment life may not enhance achievement. This may be true in some schools where negative social influence on slow learners is strong and supervision seems absent. In this case, adolescents may spend most of their time in non-school-related activities like dating, going out, unplanned games, and using drugs.

In developing countries, students who stay in school dormitories are closely supervised by deans and assistant deans. Their evening study and other after-class activities are supervised either by teachers or by deans. They cannot leave the school campus without a written authorization from the dean or from the principal indicating the reason for leaving the campus, the date and time of departure, and the date and time of return. One generally acceptable reason is if a student needs medical attention that requires the intervention of a medical
doctor, and is highly recommended by the medical assistant or the nurse. When the student returns to school he/she will have to report to the dean, showing all medical documentation from the doctor. Otherwise, any leave of the school campus may result in suspension or exclusion.

School Size

The issue of school size has retained attention of researchers who are interested in school-related topics especially in Western countries. Not all research done on school size is in agreement on the impact of school size on academic achievement. Some believe that students attending a large school can perform better than those enrolled in small schools. They believe that large schools have a strong program, have good facilities, and have experienced teachers who are better paid than those in small schools (Coleman, Hoffer, & Kilgore, 1982).

Kearney (1994) thinks that small schools are more effective than large schools. In his research he found that small schools have the following advantages:

Small schools allow greater student participation in extracurricular activities. Interaction and cooperation among students, teachers, administrators, parents and
communities are stronger in small schools. Students in small schools (all other things being equal) typically achieve at higher levels than their counterparts in large schools. Small schools significantly boast educational achievement of at-risk students. (p. 6)

Howley (1994) also believes that the high student participation in school activities observed in small schools has a positive effect on achievement. According to him, it lowers the drop-out rate in small high schools.

Franklin and Crone (1992), studying the impact of school size on achievement in Louisiana schools, found that besides the high socioeconomic status schools, other schools having the same socioeconomic status, small schools performed better than large schools. This means that there was no difference in achievement in large and small schools of high socioeconomic status. However, those in "medium-high socioeconomic status levels, small schools outperformed the large schools. For the medium-low and low socioeconomic status grouped schools the small schools performed significantly higher than all other groups" (p. 15).

Herbert and Herbert (1994) found that small schools are more effective on elementary and high-school levels. The impact of a small elementary school on achievement is
always positive. On high-school level, "small schools promote student satisfaction, sense of belonging, participation in school activities, attendance and retention, and avoidance of cigarettes, smokeless tobacco, and marijuana" (p. 21).

Lee and Smith (1995) also found that small secondary schools may have direct or indirect positive effects on achievement. According to them, small schools are easy to finance, to organize to maintain social relationship, and to implement the differentiation of the curriculum. These variables may directly or indirectly affect students' development.

Class Size

Comparing the achievement of students in large and small schools, Hou (1994) noticed that students in small classes were performing better than students in large classes on standardized quizzes and exams. Only 10% of these differences were related to "other observable heterogeneity between the students of the two classes, leaving 90% of the differences as due to class size" (p. 19).
Gilman, Swan, and Store (cited in Harder, 1990) think that small class size will enable teachers to provide enough care and attention to each student. Classroom management will be easy as a teacher interacts with each single individual. Finally, the teacher will have the opportunity to exploit different teaching methods and techniques (Pate-Bain, Achilles, Boyd-Zaharias, & McKenna, 1992).

Nye et al. (cited in Hiestand, 1994) found in their multiyear studies in Tennessee that students who were in small classes performed better in reading and mathematics than those who were in large classes. This agrees with Nye, Boyd-Zaharias, Fulton, and Wallenhorst (1992). In their work they reported a 4-year study involving 6,000 students, which sought to determine the effect of small classes on student achievement. According to their findings, the small classes outperformed large classes. Dharmadasa (1995) reached the same conclusion.

In his research involving rural schools in Idaho, Kearney (1994) concluded that small classes in small schools can booster achievement of disadvantaged children from minority families. In these classes, teachers will
have time to help each individual according to his/her ability to understand the material presented. In a large class, however, teachers feel stressed, and unable to explore effectively all possible alternatives for a better understanding of their students. Only an excellent teacher will be able to compensate for the negative effects of a large class (Scheck, Kinicki, & Webster, 1994).

Schiefelbein and Simmons (1981) reviewed 14 studies relating to the effects of class size to student's achievement and concluded that larger class size did not correlate with higher performance. It is necessary to mention here that some countries involved in this study had an average class size ranging from 20 to 50 individuals. In some developing countries where the demand for education is extremely high, class size can sometimes reach 60 or more students.

Lumumba (n.d.) believes, however, that the average class size of 43 to 45 students in secondary school constitutes large classes. According to him, such large classes have a negative effect on a student's achievement. They are sometimes the cause for the dismissal of many students.
Class Attendance

In his study of students attending a Department of Youth Services School (DYS), which is a correctional institution, Fahsholtz (1993) found that "mandatory attendance in a correctional institution resulted in students achieving academically at a higher rate than when they were compelled, but not forced to attend public schools" (p. 102).

Among the 273 students involved in this study, 220 got a significant grade increase: "57 showed an increase of one letter grade; 72 showed an increase of two letter grades; 75 showed an increase of three letter grades; and 16 showed an increase of four letter grades" (p. 101).

One study conducted in Louisiana schools also revealed that class attendance was directly related to school achievement. It was the second only after socioeconomic status (Franklin & Crone, 1992).

Lloyd (1991), referring to poor attendance at urban schools, notes that "students in these schools possess the academic ability to achieve educational success but do not attend school regularly enough to be assessed properly" (p. 111). He suggests that the only way to improve school
achievement in these schools is to encourage these students to attend school regularly by rewards and prizes.

The findings of one study (Kowalewski et al., 1989) revealed that unexcused class absences in college were found to correlate with academic achievement. Its conclusion is summarized as follows:

Class cutting was correlated with GPA and was found to be related negatively and significantly. Students did indeed hurt themselves, at least according to this measure of success, by cutting class. Regression analysis showed that an increase in absences by 10% resulted in a 0.2 drop in grade points.

(p. 991)

Homework

Homework has interested researchers in the field of education. McAdams (1994) found that students who reach a high level of achievement are those who attend schools that assign regularly a significant amount of homework.

Palardy (1995) thinks that homework can play a great role in the learning process. According to him, homework has four benefits: (1) it can promote initiative and create a sense of responsibility, (2) it allows learners to integrate the new knowledge, (3) it prepare students for the subject of the following class, and (4) can create a sense of independent study.
Coleman, Hoffer and Kilgore (1981), comparing achievement of students attending private and public schools, found that students attending private schools, where the level of homework was high, showed a small but consistent difference in achievement.

The effect of homework seems to be more apparent on the high-school level. Doyle and Barber (1990), referring to a study done by Rutter, reported that "secondary schools that assigned homework frequently demonstrated higher student achievement that did comparable schools that reported infrequent assignment of homework" (p. 15).

Reporting Keith's work, Doyle and Barber (1990) affirm that time spent on homework has been found to be positively related to academic achievement (Douglas & Sulock, 1995). Senior students who spent a lot of time on homework got good grades regardless of their ability levels. Even low-ability students who use enough study time on school material sometimes obtain good grades because of extra time devoted on school work (Doyle & Barber, 1990).

School Climate

As Rock et al. (1985) reported, most students drop out of school because of such behavioral problems as (1)
neglecting homework, (2) absence of control over their lives, (3) using school time in driving, and (4) disciplinary problems in school.

The effect of student behavior in high school seems to be most apparent in the sophomore year. In this year, some students who are not interested in school. As they behave poorly, their behavior may correspond to their academic work, which also may be poor. After the sophomore year, many low achievers drop out. Those who stay may show behavioral problems but they are not necessarily related to school performance (Coleman et al., 1982). This suggests that a junior student may behave in a nonacceptable way but still maintain an acceptable academic performance.

It is important to mention here, however, that the school climate may also have a considerable impact on academic work. As Coleman et al. (1982) think, "the behavior of all students in the school may have some effect on what individual students learn, even controlling on the student's own behavior" (p. 246). This may happen in several ways. Many times teachers lose much time disciplining students rather than teaching. Furthermore,
"distractions that disorder in the school imposes on the 
student may all have an effect" (Coleman et al., 1981, p. 
253). The same authors also found that 

school policies, such as level of homework, 
curriculum, and disciplinary practices, 
indirectly affect a student's achievement by 
influencing that student's behavior. . . . Those 
policies directly affect student achievement and 
include such factors as teachers' skill or 
commitment. School policies can also affect a 
given student's achievement through their impact 
on the other students' behavior. That is, the 
same policies that increase one student's 
homework or decrease that student's absence or 
 disorderly behavior can be identified through 
the medium of other students' behavior. (p. 269) 

Further, Coleman et al. (1981) continue by stating 

that 

other students' behavior can affect a given 
student's achievement in either of two ways: 
through their direct effect on that student's 
behavior (for example, a hard-working and 
committed student body will ordinarily generate 
commitment among its incoming members); or 
through school policies. A disobedient or 
truant student population can impede academic 
and disciplinary policies to the point that the 
demands are relaxed and the policies 
accommodated to students' behavior. (pp. 270, 
271) 

In developing countries, classroom management is 
considered as one of the most important factors that can 
enhance the student's intellectual development. For these
countries, order, attention, and discipline are required not only in classrooms but also on the school campus. For instance, when the school bell rings, students enter their classrooms. It may be the beginning of the school day or at the end of a 10-minute break. Each student rejoins his class line and enters silently in his respective classroom. Each quarter, every student occupies an assigned place. Silence is required even when the teacher is not in class. This agrees with Persaud (cited in Moos, 1979) that "many teachers in developing societies believe that strongly controlled and disciplined classes are needed to ensure students' social and academic development" (p. 216).

As research in school discipline reveals, however, a severe discipline does not necessarily contribute to the learner's achievement. A study conducted in Indonesia (Moos, 1979) showed that higher order and organization do not influence achievement. Moreover, the same study revealed that too much emphasis on discipline is not favorable to a learning climate. Many severe disciplinarian actions such as suspensions and exclusions have been found to be associated with lower test scores (Franklin & Crone, 1992).
The New Jersey Education Association's study of urban-school environment done in 1987 came to a similar conclusion. According to this work, school discipline can prevent students from learning. Severe discipline or a discipline of laissez faire can have a negative effect on the learning process. In many cases, students drop out because of intolerant discipline, others fail because of inappropriate school climate, both of which result from a lack of adequate and warm discipline.

Teacher Quality

Teacher quality has an impact on students' achievement. The students' acquisition depends greatly upon teacher guidance and instruction. When a teacher is qualified, experienced, interested, competent, and skillful, he/she may be able to instill even the most abstract knowledge.

In order to meet the academic needs of the students and the parents' expectations, an effective teacher continually must demonstrate that he/she is competent, well prepared, and in charge. As a constant learner, the teacher will encourage students to climb higher and still...
higher (White, 1943). By creating a stimulating learning environment in the classroom, teachers can facilitate the learning process of their students.

A survey of the New Jersey Education Association conducted in 1987 showed that the dedication and quality of teachers are the major factors that influence learning. As the results revealed, "more than 6 out of every 10 urban respondents (62%) and 7 out of every 10 nonurban respondents (72%) indicated that it is the dedication and the quality of the staff that make their school district a good place to learn" (p. 16).

Teachers can influence classroom learning in many ways including "task presentation, performance rates, the pace of instruction, and the motivational system employed" (Smith, Neisworth, & Green, 1978, p. 116).

Furthermore, the personality of the teacher, the interaction with the students, and the kind of discipline all have a certain role to play in the success or failure of the students. Christensen (cited in Short, 1968) indicated that "teacher permissiveness was unrelated to pupil achievement, but that teacher warmth was significantly related to pupil growth in vocabulary and arithmetic" (p. 37).
The quality of the teacher can affect how students perform. The presence of a high number of certified teachers increased the level of students' performance in Louisiana schools (Franklin & Crone, 1992).

Research conducted in developing countries where most children are from low income families revealed that "the predominant influence on student learning is the quality of the school and teachers to which children are exposed" (Heyneman & Loxley, 1983, p. 1162).

In these countries where the majority of students are from poor families, some schools do not have adequate equipment. The efficacy of these schools depends mostly on qualified, motivated, and dedicated teachers.

School Effectiveness

Effective educational institutions can have a certain effect on achievement. In his study aimed at learning how to improve college achievement, Baird (1992) suggests that in order to enhance academic achievement, colleges need to

(1) increase the frequency and the depth of student-faculty intervention, (2) provide a more integrated, mind-opening general education care, (3) promote more active participation in
extracurricular activities and closer interchange with other students, (4) encourage students to live on campus, especially in living-learning housing, and (5) permit individualized course instruction wherever appropriate. (p. 10)

School effectiveness also includes "tutorial programs, work-study programs . . . , team teaching, computer-assisted instruction," (Baird, 1992, p. 7) student placement, and hiring certified teachers who are well trained and able to use different methods and teaching techniques (Uishi, 1993).

As McGaw et al. (1993) suggest, an effective school should focus on "learning and a conductive school climate, a concern for the learning and welfare of all its students, a committed and professional staff, a curricula that is relevant, coherent and inclusive . . . and parent involvement" (abstract).

Some research reveals that a school principal who pays special attention to the efficacy of the school curriculum may have a positive effect on the academic achievement in the school (Heck & Maroulides, 1993). The quality of the school has a profound impact on students' achievement (Ho Sui-Chu & Willms, 1996). When students
realize that they have an excellent curriculum, they may become interested and motivated to learn. The "perceptions of the usefulness of the curriculum strongly affect their attitudes to learning" (Hill, 1993, p. 18).

The quality of school management plays a great role in influencing the school achievement of students. Heck and Marcoulides (1993) state:

The manner in which elementary and high school principals govern the school, build strong school climate, and organize and monitor the school's instructional programs are important predictors of academic achievement. (p. 25)

Again, the way the school principal and teachers "organize and coordinate the work life of the school shapes not only the learning experiences and achievement of students, but also the environment in which this work is carried out" (Heck & Marcoulides, 1993, p. 28).

Summary of Literature Review

Clearly, many factors impact the outcome of the teaching and learning process. Students bring with them into the school system numerous variables (home and student variables). The school has many variables such as climate that affect student learning. The classroom has
many more variables that influence the degree to which students learn. Variables such as student-teacher interaction, classroom management, teacher quality, and interaction with other students all impinge upon how receptive and quickly students learn. This study intends to examine the nature of the relationship of some of these variables with the academic performance of first-year Rwandese students in Seventh-day Adventist secondary schools.

The literature review focused briefly on different variables that can have an impact on school achievement, and can be summarized as follows:

1. Variables related to home background such as socioeconomic status, level of education, and occupation of parents were found positively related to school achievement. However, family size was found to be negatively related to academic performance.

2. As related to student characteristics, prior achievement has a high correlation with future performance. Better performance in mathematics, sciences, languages, better grade point average, and class rank have a predictive power of future performance. Entrance
examinations are a good indication of school success. Students with high scores in entrance examinations tend to perform better in their studies. Girls with high grade point averages perform better in languages, whereas boys perform better in mathematics and sciences. Grade repetition does not predict future performance. A student's satisfaction or dissatisfaction are not necessarily related to academic achievement.

Few studies have been done in the area of school choice, but there is a general belief that students perform better when they are taking a curriculum of their own choice.

3. School characteristics such as school size, class size, and residence patterns have a certain effect on achievement.
CHAPTER III

RESEARCH METHODOLOGY

Introduction

The purpose of this study was to examine the nature of the relationship between selected home background, student and school variables, and student academic achievement of first-year students in Rwandese Seventh-day Adventist secondary schools. It was also the intent of this study to determine which of these selected factors may determine why students succeed or fail academically during their first year of secondary-school education.

Research Design

The survey research method was the primary mode of data collection for this study. Information was gathered by student survey for such variables as family background, residence pattern, study habits, and attitudes towards school and teachers. Student records were reviewed for demographic and academic variables such as prefecture and
association of origin, elementary school attended, religious affiliation, type of residence, elementary-school grades, grade repetition, and entrance-examination score. These records were obtained from available archival data from each of the three Seventh-day Adventist secondary schools and from the office of elementary-school principals, directors of education in associations, and from the Rwanda Union education director. Additional data such as decision for success or failure were sent by the respective secondary-school principals after the end of the school year.

Population

This study was limited to 374 first-year students of Seventh-day Adventist secondary schools in Rwanda during the 1992/1993 school year. These students began the first year of secondary school in September 1992. The intent of the study was to involve all first-year students in this study. However, the questionnaire was administered to 338 students: 166 from Gitwe Adventist College, 111 from Rwankeri Adventist College, and 61 from Mugonero Nursing School. Thirty-six students (12 from Rwankeri, 4 from Gitwe, and 20 from Mugonero) were not able to participate
in this study. Those from Gitwe and Rwankeri were absent the day the questionnaire was administered, and attendance at Rwankeri was irregular because of the sociopolitical climate in the northern part of Rwanda. The number of students at Mugonero Nursing School was underestimated, so there were not enough copies of the survey for all students who were present. At Mugonero Nursing School, the copies of the questionnaire were distributed until the last copy was given.

During data screening, all students who shared the same identification number were eliminated. Thus, 10 students from Gitwe College were dropped from the sample. Another 11 students (5 from Gitwe College, 5 from Rwankeri College, and 1 from Mugonero Nursing school) dropped out before the end of the school year. This final sample contained 317 students (151 from Gitwe, 106 from Rwankeri, and 60 from Mugonero) from a total of 374, representing 86.8% of the whole population.

Description of the Schools

Rwanda Union Mission has three secondary schools: Gitwe Adventist College, Rwankeri Adventist College, and Mugonero Nursing School.
Gitwe Adventist College

Gitwe Adventist College is the oldest Adventist school in Rwanda. It was established in 1931 in the prefecture of Gitarama, which is almost in the center of Rwanda. Most of the Seventh-day Adventist workers who are actually serving the church in different capacities in Burundi, Rwanda, and former Zaïre were trained in this school.

Gitwe Adventist College was initially called Gitwe Adventist Seminary. Its mission was to train individuals to be elementary-school teachers and gospel evangelists. Later, the school board decided to open a new field of study dedicated to training pastors. After few years this new filed was unfortunately abandoned.

In 1969, Gitwe Seminary changed its name to Gitwe Adventist College (Collège Adventiste de Gitwe) with an emphasis on general science education (humanités générales). Later, a 2-year teacher-training program was opened for individuals with 3 years of secondary school. Because of national school reform in 1981, Gitwe Adventist College changed its curriculum: general science-education orientation became math-physics, and the inferior teacher-training program (D5) became the elementary teacher-
training program (D6). After 6 years of schooling, students who graduate from math-physics are accepted by Universities in science areas such as mathematics, physics, medicine, engineering, and the like. Those who graduate from the teacher-training program are employed as elementary-school teachers or can enroll in the more advanced fields of education.

Gitwe Adventist College is the largest Adventist secondary school in Rwanda. Table 1 shows the enrollment for the 1992/1993 school year.

As Table 1 shows, at the beginning of the 1992/1993 school year, Gitwe College enrolled 649 students, 373 boys and 276 girls. Two quarters later, student enrollment was 629. For various reasons, 20 students (7 males and 17 females) had already dropped out. During the third quarter, five more students (3 males and 2 females) dropped out.

Rwankeri Adventist College

Rwankeri Adventist College is located in the prefecture of Ruhengeri, the northern part of Rwanda. It was established in the early 1950s and was operated by the North Rwanda Field. Due to a lack of qualified teachers
TABLE 1

ENROLLMENT FOR 1992/1993 SCHOOL YEAR AT
GITWE ADVENTIST COLLEGE

<table>
<thead>
<tr>
<th>Area of Study</th>
<th>Math-Physics</th>
<th>Teacher Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>1st</td>
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<td>2nd</td>
<td>45</td>
<td>13</td>
</tr>
<tr>
<td>3rd</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>4th</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>5th</td>
<td>30</td>
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<tr>
<td>Total</td>
<td>188</td>
<td>76</td>
</tr>
</tbody>
</table>

the school closed in 1965. However, it reopened in 1975 as one of the Central African Union's secondary schools. Rwankeri was a junior high school that offered general education for 3 years. After that, Rwankeri students could go to Gitwe College to complete high-school education.
Because of the 1981 school system reform, Rwankeri Secondary School changed its curriculum from general education to economic science leading to a high-school diploma after 6 years of schooling. Recently, the school board decided to open another field of study that will offer a high-school diploma in secretarial science. According to the Rwankeri College master plan, a technological field will be opened in the very near future. After that happens the projected enrollment will increase to approximately 800 students.

According to Table 2, Rwankeri College with only one field of study has 426 students, 266 boys and 160 girls. If the school maintains the same rhythm of enrollment and the recently opened field of study is successful, the enrollment may double in the near future.

Mugonero Nursing School

Mugonero Nursing School is situated in the prefecture of Kibuye, the western part of Rwanda. This school first started in the early 1940s. A few years later, it closed. It was reopened in 1968 to train medical assistants. That curriculum was abandoned in 1973 and the focus was changed
TABLE 2
ENROLLMENT FOR 1992/1993 SCHOOL YEAR AT RWANKERI ADVENTIST COLLEGE

<table>
<thead>
<tr>
<th>Class</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
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<td>52</td>
<td>130</td>
</tr>
<tr>
<td>2nd</td>
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<td>15</td>
<td>45</td>
</tr>
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<td>5th</td>
<td>28</td>
<td>16</td>
<td>44</td>
</tr>
<tr>
<td>6th</td>
<td>28</td>
<td>14</td>
<td>42</td>
</tr>
<tr>
<td>Total</td>
<td>266</td>
<td>160</td>
<td>426</td>
</tr>
</tbody>
</table>

to training nurse assistants. This training was a 2-year program after 3 years of general secondary-school education. Originally, the graduates from this program obtained a secondary-school diploma D5 or A3.

As in other schools, the national school reform obliged Mugonero to abandon the 5-year program (D5) and to start the nursing program leading to a high-school diploma (D6). Since the creation of the nursing program, Mugonero has provided nurses for Mugonero Hospital, situated on the same campus, for other private and public hospitals around
the country, and for Adventist health institutions, especially in the neighboring French-speaking countries of Burundi and Zaire. See Table 3.

TABLE 3

ENROLLMENT FOR 1992/1993 SCHOOL YEAR AT MUGONERO NURSING SCHOOL

<table>
<thead>
<tr>
<th>Class</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>28</td>
<td>56</td>
<td>84</td>
</tr>
<tr>
<td>2nd</td>
<td>26</td>
<td>49</td>
<td>75</td>
</tr>
<tr>
<td>3rd</td>
<td>9</td>
<td>22</td>
<td>31</td>
</tr>
<tr>
<td>4th</td>
<td>11</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>5th</td>
<td>13</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>6th</td>
<td>7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>163</td>
<td>257</td>
</tr>
</tbody>
</table>

Because of the lack of infrastructure for such a professional school, enrollment at Mugonero is still low compared with the two other schools. As Table 3 indicates, only 257 students (94 boys and 163 girls) were enrolled for the 1992/1993 school year.
Instrumentation

Two data-collection instruments were developed for this study (see Appendices B and C). A student survey composed of three different parts was developed. Part 1 of this instrument contained 33 questions. This part played a double role: (1) Its main purpose was to collect demographic information such as sex, residence, occupation of parents, parents' level of education, and size of the family; and (2) it collected such information as work load, study habits, and financial status.

Part 2 of this survey was a Semantic Differential-Type composed of nine pairs of opposite adjectives. Students were asked to indicate their opinion of their school by marking a point within the continuum.

Part 3 was a Likert scale with five response choices used to measure the students' attitudes toward their teachers. In this part of the questionnaire, students were to describe their feelings about their teachers by rating them on 12 different statements. For each statement, they had to choose one of the following five possible stances: strongly agree, agree, uncertain, disagree, and strongly disagree.
The second instrument was developed as an archival data-collection instrument. This instrument was used to collect student demographic and academic information from the registrar's office of the respective schools.

Parts 2 and 3 of this survey were developed as part of the requirements for the scale development course. The content validity was established through the literature review. The item total correlations for the semantic differential used to measure student attitude toward school range from 0.3 to 0.6. Its reliability estimate is 0.83.

The Likert scale used to measure student attitude toward teachers has item total correlations ranging from 0.2 to 0.7. Its reliability estimate is 0.81.

These data instruments were presented to two Rwandese students (one is in seminary, another in school of education) in order to see if they were reasonable measures for the targeted population. Before they were printed in their final form they were finally revised by Dr. Kijai, and approved by my dissertation committee members.
Procedure

In order to collect data, I traveled to Rwanda on February 3, 1993. Before traveling to Rwanda, I received permission and endorsement from the Rwanda Union of the Seventh-day Adventist Department of Education. A letter authorizing me to conduct my research in these three schools was given me on February 4, by the Union Education Director at Grégoire Kayibanda International Airport. Also, I sought permission and assistance to conduct this study from the authorities of the three Adventist secondary schools. The time and place to administer the student questionnaire were agreed upon between myself and the various school administrators.

Visits to these schools were as follows: Rwankeri Adventist College on February 8, Gitwe Adventist College on February 10, and Mugonero Nursing School on February 15. Before the administration of the questionnaire, identification numbers were assigned to each student. The same number was written on the students' questionnaire. Before the administration of the survey, students were asked to authorize me to get additional demographic and academic data from their files.
A space was provided on the consent form for a yes or no answer for the students to grant permission. All students voluntarily participated in this study. The role of school administration was limited to assembling the students and introducing the researcher. I administered the questionnaire myself.

At Rwankeri, only 111 students answered the questionnaire. Another 12 students were not present, probably due to fear of the fighting zone only 20 km away. Regular class sessions were not taking place in this school. In Gitarama, in the center of Rwanda, the situation was quite different. All schools were functioning regularly. Thus, 166 out of 170 students participated in this study.

At Mugonero Nursing School, the number of first-year students outnumbered the copies of the questionnaire. In the past, this school had recruited only 35 students every 2 years. In the 1992/1993 school year, 2 first-year classes were in attendance, with a total of 84 students. Due to the shortage of questionnaire copies, the 61 available copies were randomly assigned to 61 students.

After the questionnaires at each school had been administered, I collected other pertinent data such as student academic records, demographic information, courses
taken, and GPA for the first quarter from the files of students who granted permission.

Some files did not contain the pertinent demographic data and elementary-school academic background. In such cases I was obliged to get the files from the Education Directors in the Associations. In a few cases, I had to search for the needed information in the elementary schools where the students had attended. I went to Rwankeri Elementary School, Gitwe Elementary School, Ngoma Elementary School, and Kabusunzu Elementary School. Other information such as the student choice and entrance-examination scores was obtained from the office of the Union Education Director.

After the close of the school year, the administration of each secondary school sent me a copy of the closing report. This report indicates the decision made by the deliberation committee for each student. It shows all grades for each student, and which students passed and which failed. A separate report of absences and tardinesses also was sent by each school. The report from Gitwe College is more comprehensive than those from other schools. The report from Mugonero Nursing School
and Rwankeri College show only the absences and tardinesses not excused by the school administration.

**Statement of Hypotheses**

In order to facilitate the analysis of the data the hypotheses are presented in null form.

**Hypothesis 1**: There is no relationship between home background and academic success of first-year secondary-school students.

This hypothesis has three sub-hypotheses.

**Sub-hypothesis 1a**: There is no relationship between parents' level of education and academic success of first-year secondary-school students.

**Sub-hypothesis 1b**: There is no relationship between father's occupation and academic success of first-year secondary-school students.

**Sub-hypothesis 1c**: There is no relationship between family size and academic success of first-year secondary-school students.

**Hypothesis 2**: There is no relationship between student characteristics and academic success of first-year secondary-school students.
Under this hypothesis the following 10 sub-hypotheses were considered.

**Sub-hypothesis 2a:** There is no relationship between gender and academic success of first-year secondary-school students.

**Sub-hypothesis 2b:** There is no relationship between elementary-school academic performance and academic success during the first year of secondary school.

**Sub-hypothesis 2c:** There is no relationship between elementary-school grades repetition and academic success of first-year secondary-school students.

**Sub-hypothesis 2d:** There is no relationship between entrance examination score and academic success of first-year secondary-school students.

**Sub-hypothesis 2e:** There is no relationship between taking/not taking entrance examination and academic success of first-year secondary-school students.

**Sub-hypothesis 2f:** There is no relationship between student's curricular choice and first-year secondary-school academic success.

**Sub-hypothesis 2g:** There is no relationship between behavioral grades and academic success of first-year secondary-school students.
Sub-hypothesis 2h: There is no relationship between attitudes toward teachers and academic success of first-year secondary-school students.

Sub-hypothesis 2i: There is no relationship between attitudes toward school and academic success of first-year secondary-school students.

Sub-hypothesis 2j: There is no relationship between time devoted to study and academic success of first-year secondary-school students.

Hypothesis 3: There is no relationship between school characteristics and academic success of first-year secondary-school students.

This hypothesis has four sub-hypotheses.

Sub-hypothesis 3a: Among first-year secondary-school students, there is no difference between the success of students who live in the dormitory and students who live off-campus.

Sub-hypothesis 3b: There is no relationship between school size and academic success of first-year secondary-school students.

Sub-hypothesis 3c: There is no relationship between class size and academic success of first-year secondary-school students.
**Sub-hypothesis 3d**: There is no relationship between field of study and academic success of first-year secondary-school students.

**Data Analysis**

Descriptive statistics were used to analyze the data collected in this study. One statistical measure used in this study is chi-square. This measure is commonly used to test "whether the two independent samples have significantly different distributions across the two categories" (Tuckman, 1988, p. 289) of a contingency table.

In this study, the chi-square was used to test hypotheses 1a, 1b, 1c; 2a, 2c, 2e, 2f, 2j; 3a, 3b, 3c and 3d. The second statistical measure used was a t-test. This measure helps to establish the significance of the difference between two means. In this study, it was used to determine the significance between two means of two independent samples (Ferguson & Takane, 1989). It was used mainly to test hypotheses 2d, 2g, 2h, and 2i.

**Summary**

This study proposed to examine the relationship between selected home, student and school variables and student academic success of first-year students at
Seventh-day Adventist secondary schools in Rwanda. This study employed a survey research method approach in which a survey instrument was administered to nearly all first-year secondary-school students in three Rwandese Seventh-day Adventist schools. Student academic information also was collected and was matched with survey responses. The data were analyzed using descriptive statistics, chi-square, and t-test.
CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Description of the Sample

The sample used in this study was composed of first-year secondary-school students who were attending Gitwe College, Rwankeri College, and Mugonero Nursing School during the 1992/1993 school year.

In the beginning of the school year, these schools enrolled 393 first-year students (191 males and 202 females). By the time data collection took place, 19 (10 boys and 9 girls) students already had dropped out. All of the remaining population of 374 students (181 boys and 193 girls) was expected to participate in this study. Due to the sociopolitical situation in Rwanda, classes were not meeting regularly. This was especially true of day students. Hence, only 338 students were able to participate initially in this study. During data compilation, it was discovered that identification numbers were identical for two different individuals. One was
eliminated. Consequently, 10 students were eliminated from the sample.

Before the end of the school year, 11 more students dropped out, leaving a total sample number of 317 individuals (161 boys and 156 girls), or 84.76% of the total population.

Table 4 shows that Gitwe College with three first-year classes has 47% of the total sample. Rwankeri College, with two large classes, has 34%, and Mugonero Nursing School claims 19% of the total sample.

<table>
<thead>
<tr>
<th>School</th>
<th>Boys</th>
<th>%</th>
<th>Girls</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gitwe</td>
<td>72</td>
<td>23</td>
<td>79</td>
<td>25</td>
<td>151</td>
<td>47.63</td>
</tr>
<tr>
<td>Mugonero</td>
<td>23</td>
<td>7</td>
<td>37</td>
<td>12</td>
<td>60</td>
<td>18.93</td>
</tr>
<tr>
<td>Rwankeri</td>
<td>66</td>
<td>21</td>
<td>40</td>
<td>12</td>
<td>106</td>
<td>34.44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>161</td>
<td>51</td>
<td>156</td>
<td>49</td>
<td>317</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Although 191 boys and 202 girls represented 49% and 51%, respectively, of the total students attending the first year of secondary school, in this sample, girls who
actually participated in this study were 49%, compared to 51% of boys.

Elementary School Attended

Seventh-day Adventist secondary schools recruit students from Seventh-day Adventist elementary schools. The whole country has 32 complete Seventh-day Adventist elementary schools operated by the Rwanda Union Mission through three associations (East Rwanda Association, North Rwanda Association, and South Rwanda Association), and one elementary school operated by the Adventist University of Central Africa (AUCA), also situated in Rwanda.

All elementary-school graduates take an entrance examination. Only those with the highest scores are selected for the few available places in these secondary schools. The number of students selected from each elementary school to attend first-year secondary school is shown in Table 5.

As shown in Table 5, 208 first-year secondary-school students were recruited from 31 Seventh-day Adventist elementary schools. Only 2 elementary schools were not represented. Three possible reasons these schools were not represented may be (1) they may not have had any elementary-school graduates who passed the entrance
TABLE 5
NUMBER OF FIRST-YEAR SECONDARY-SCHOOL STUDENTS REPRESENTING THE ELEMENTARY SCHOOLS IN RWANDA

<table>
<thead>
<tr>
<th>Elementary School Attended</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buhoro</td>
<td>5</td>
</tr>
<tr>
<td>Butare</td>
<td>5</td>
</tr>
<tr>
<td>Gakenke</td>
<td>12</td>
</tr>
<tr>
<td>Gasave</td>
<td>4</td>
</tr>
<tr>
<td>Gitisi</td>
<td>6</td>
</tr>
<tr>
<td>Gitwe</td>
<td>19</td>
</tr>
<tr>
<td>Joma</td>
<td>3</td>
</tr>
<tr>
<td>Kabusunzu</td>
<td>17</td>
</tr>
<tr>
<td>Kamembe</td>
<td>3</td>
</tr>
<tr>
<td>Kanama</td>
<td>3</td>
</tr>
<tr>
<td>Kanyinya</td>
<td>9</td>
</tr>
<tr>
<td>Karama</td>
<td>2</td>
</tr>
<tr>
<td>Karinzi</td>
<td>7</td>
</tr>
<tr>
<td>Kavumu</td>
<td>5</td>
</tr>
<tr>
<td>Kirwa</td>
<td>1</td>
</tr>
<tr>
<td>Kora</td>
<td>5</td>
</tr>
<tr>
<td>Mbandari</td>
<td>5</td>
</tr>
<tr>
<td>Mubuga</td>
<td>3</td>
</tr>
<tr>
<td>Mudende</td>
<td>4</td>
</tr>
<tr>
<td>Mukingo</td>
<td>1</td>
</tr>
<tr>
<td>Mwanabiri</td>
<td>3</td>
</tr>
<tr>
<td>Ngoma</td>
<td>10</td>
</tr>
<tr>
<td>Nyacyina</td>
<td>5</td>
</tr>
<tr>
<td>Nyakanyinya</td>
<td>5</td>
</tr>
<tr>
<td>Nyarubuye</td>
<td>3</td>
</tr>
<tr>
<td>Nyarurama</td>
<td>1</td>
</tr>
<tr>
<td>Rubengera</td>
<td>4</td>
</tr>
<tr>
<td>Rusororo (ERA)</td>
<td>15</td>
</tr>
<tr>
<td>Rusororo (SRA)</td>
<td>8</td>
</tr>
<tr>
<td>Rwamwata</td>
<td>3</td>
</tr>
<tr>
<td>Rwankeri</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>208</strong></td>
</tr>
</tbody>
</table>

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examination, (2) students who passed could not enroll because of financial problems, and/or (3) their representatives probably were absent when these schools were visited. The other 109 candidates came from 78 public schools. Only 45 of the 109 wrote the entrance examination.

Some of the 64 candidates admitted without taking an entrance examination were admitted on the basis of public relations and others took places of candidates who passed the entrance examination but were not able financially to enroll. Each year, a number of students who get good scores in the entrance examination cannot register for secondary education because of financial difficulties.

Students by Association

Table 6 indicates the number of accepted students in these associations. The number of students per association depends on four factors: (1) the total number of students in the elementary graduating class, (2) their scores on the entrance examination, (3) the parents' financial ability to afford the tuition in Seventh-day Adventist secondary schools, and (4) the presence of a secondary school in the association.
An association with wealthier people, many elementary schools, and many students in the graduating class, has a greater chance of having more graduates who pass the entrance examination and are able to enroll in the first year of secondary school. A secondary school located in the association enables more poor students to enroll as day students.

**TABLE 6**

**ORIGIN OF FIRST-YEAR SECONDARY-SCHOOL STUDENTS BY ASSOCIATION**

<table>
<thead>
<tr>
<th>Association</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Rwanda Association</td>
<td>26</td>
</tr>
<tr>
<td>North Rwanda Association</td>
<td>169</td>
</tr>
<tr>
<td>South Rwanda Association</td>
<td>122</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317</strong></td>
</tr>
</tbody>
</table>

Students by Prefecture

Rwanda is divided into areas known as prefectures. Some prefectures have more students than others. Such prefectures as Gitarama, Kibuye, and Ruhengeri are those where the Seventh-day Adventist message started in the early 1930s. Many old and strong elementary schools are
located in these prefectures. In addition, all three secondary schools also are situated in these prefectures: Gitwe College in Gitarama, Rwankeri College in Ruhengeri, and Mgonero Nursing School in Kibuye. Table 7 shows the number of students accepted from each prefecture.

Age of Subjects

The sample used in this study was composed of students ages 11 to 21. The majority of students were 11- to 17-year-olds. Only 13 of 317 students were between 18 and 21 years old. Table 8 shows the ages of those who participated in the study.

Educational Background of Parents

It is important to mention here that in Rwanda people with a secondary-school education are among those considered as educated. As Table 9 indicates, only 26.4% of the participants have educated fathers. For a further breakdown, the fathers of 18.6% of these students have completed secondary school but did not go to college; 3.1% of the students have fathers who started college but dropped out before completion; and 4.7% of the students have fathers who hold college degrees.
<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butare</td>
<td>15</td>
</tr>
<tr>
<td>Byumba</td>
<td>2</td>
</tr>
<tr>
<td>Cyangugu</td>
<td>13</td>
</tr>
<tr>
<td>Gikongoro</td>
<td>10</td>
</tr>
<tr>
<td>Gisenyi</td>
<td>25</td>
</tr>
<tr>
<td>Gitarama</td>
<td>85</td>
</tr>
<tr>
<td>Kibungo</td>
<td>3</td>
</tr>
<tr>
<td>Kibuye</td>
<td>41</td>
</tr>
<tr>
<td>Kigali</td>
<td>21</td>
</tr>
<tr>
<td>Ruhengeri</td>
<td>102</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317</strong></td>
</tr>
</tbody>
</table>
### Table 8

**Age of Participants Used in the Sample**

<table>
<thead>
<tr>
<th>Age</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td>29</td>
<td>49</td>
</tr>
<tr>
<td>14</td>
<td>47</td>
<td>43</td>
<td>90</td>
</tr>
<tr>
<td>15</td>
<td>31</td>
<td>35</td>
<td>66</td>
</tr>
<tr>
<td>16</td>
<td>38</td>
<td>23</td>
<td>61</td>
</tr>
<tr>
<td>17</td>
<td>11</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>19</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** | 161 | 156 | 317
<table>
<thead>
<tr>
<th>Level of Education</th>
<th>No. of Students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didn't go to school</td>
<td>27</td>
<td>8.5</td>
</tr>
<tr>
<td>Attended but not completed elementary school</td>
<td>50</td>
<td>15.8</td>
</tr>
<tr>
<td>Completed elementary school</td>
<td>102</td>
<td>32.2</td>
</tr>
<tr>
<td>Attended but not completed secondary school</td>
<td>44</td>
<td>13.9</td>
</tr>
<tr>
<td>Completed secondary school but didn't go to college</td>
<td>59</td>
<td>18.6</td>
</tr>
<tr>
<td>Attended but not completed college</td>
<td>10</td>
<td>3.1</td>
</tr>
<tr>
<td>Obtained college degree</td>
<td>15</td>
<td>4.7</td>
</tr>
<tr>
<td>No response</td>
<td>10</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
The majority of students (32%) come from families whose fathers have completed only elementary school. Students of elementary-school dropouts and illiterate fathers represented 15.8% and 8.5%, respectively, of the whole sample. Table 9 indicates the educational level of the fathers of the students in the sample. The educational level of the students' mothers is shown in Table 10.

As compared to fathers, mothers are less educated. Only 10.4% of students have mothers with a secondary education or higher. Students from elementary-school dropout mothers represent 29.7% of the sample, and 16.4% of students admitted to secondary education have illiterate mothers. The number of students whose mothers have completed elementary education is equal to that of the fathers (32.2%). Elementary-school graduates have little chance of being accepted into secondary school. In addition, traditional cultural barriers deter women from attending secondary education.
<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didn't go to school</td>
<td>52</td>
<td>16.4</td>
</tr>
<tr>
<td>Attended but not completed elementary school</td>
<td>94</td>
<td>29.7</td>
</tr>
<tr>
<td>Completed elementary school</td>
<td>102</td>
<td>32.2</td>
</tr>
<tr>
<td>Attended but not completed secondary school</td>
<td>22</td>
<td>6.9</td>
</tr>
<tr>
<td>Completed secondary school but didn't go to college</td>
<td>27</td>
<td>8.5</td>
</tr>
<tr>
<td>Attended but not completed college</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Obtained college degree</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>No response</td>
<td>14</td>
<td>4.4</td>
</tr>
<tr>
<td>Total</td>
<td>317</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Professions of Fathers

The largest percentage of students have fathers who are engaged in agriculture/ranching (46.7%). This is followed by students whose fathers are in business (24%). Next are students with fathers in the teaching profession (11.3%), in medical areas (3.2%), and jobs for skilled workers (2.9%). All others represent 9.7%. See Table 11.

This sample seems to be typical. In Rwanda, the majority of the population (90%) practice agriculture. In this sample, only 47.7% of the whole sample have fathers who are farmers. The other fathers are involved in more profitable professions.

Family Size

Table 12 shows that the majority of this sample come from large families. Students who come from families with 5 to 12 children represent 71.8%. Only 26.9% come from families with 4 children or less. In that respect, this sample represents the traditional Rwandese family where children are considered as blessings from God; therefore, the fortunate have as many children as possible.
TABLE 11

FATHERS' PROFESSION

<table>
<thead>
<tr>
<th>Profession</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture/ranching</td>
<td>148</td>
<td>46.70</td>
</tr>
<tr>
<td>Business</td>
<td>76</td>
<td>24.00</td>
</tr>
<tr>
<td>Teaching profession</td>
<td>36</td>
<td>11.30</td>
</tr>
<tr>
<td>Medical profession</td>
<td>10</td>
<td>3.20</td>
</tr>
<tr>
<td>Job for skilled workers</td>
<td>9</td>
<td>2.90</td>
</tr>
<tr>
<td>Other (non-specified)</td>
<td>31</td>
<td>9.70</td>
</tr>
<tr>
<td>No response</td>
<td>7</td>
<td>2.20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Religious Affiliation

Three-fourths (76%) of the students in this sample belong to the Seventh-day Adventist religion. As missing data represent only 0.7%, the remaining 24.3% represents the three other religious groups: Roman Catholics (20.5%), Protestants, (2.5%), and Muslims (0.3%). The number of students from Seventh-day Adventist families is very high compared to the number of students from other congregations. These schools were built originally for Seventh-day Adventist students. Students from other denominations have the possibility of being admitted to
<table>
<thead>
<tr>
<th>Siblings</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>3.5</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>9.2</td>
</tr>
<tr>
<td>4</td>
<td>39</td>
<td>12.3</td>
</tr>
<tr>
<td>5</td>
<td>44</td>
<td>13.9</td>
</tr>
<tr>
<td>6</td>
<td>58</td>
<td>18.3</td>
</tr>
<tr>
<td>7</td>
<td>43</td>
<td>13.6</td>
</tr>
<tr>
<td>8</td>
<td>27</td>
<td>8.5</td>
</tr>
<tr>
<td>9</td>
<td>30</td>
<td>9.4</td>
</tr>
<tr>
<td>10</td>
<td>17</td>
<td>5.3</td>
</tr>
<tr>
<td>11</td>
<td>7</td>
<td>2.2</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
public schools or other private schools where classes are held on the Sabbath. Therefore, the number of non-Adventists accepted is kept low during each enrollment. See Table 13.

### TABLE 13

#### RELIGION OF THE STUDENTS

<table>
<thead>
<tr>
<th>Type of Religion</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seventh-day Adventist</td>
<td>241</td>
<td>76.0</td>
</tr>
<tr>
<td>Roman Catholic</td>
<td>65</td>
<td>20.5</td>
</tr>
<tr>
<td>Protestant</td>
<td>8</td>
<td>2.5</td>
</tr>
<tr>
<td>Muslim</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>315</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**Living Patterns**

Seventh-day Adventist secondary schools recruit students from all 33 elementary schools of Rwanda Union territory. Many students have to attend a school far from home. Students are advised to stay in the dormitories whenever possible because conditions for studying are more conducive. Thus, the percentage of boarding students is higher (59.6%) than all other categories. See Table 14.
TABLE 14

STUDENTS' RESIDENCE

<table>
<thead>
<tr>
<th>Type of Residence</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dormitory</td>
<td>189</td>
<td>59.6</td>
</tr>
<tr>
<td>Parent's home</td>
<td>84</td>
<td>26.5</td>
</tr>
<tr>
<td>Family members' home</td>
<td>25</td>
<td>7.9</td>
</tr>
<tr>
<td>Other people's home</td>
<td>19</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Some students whose parents or relatives live near the school can attend school while staying with parents or relatives. Students belonging to these two categories represent 26.5% and 7.9%, respectively. The last 6% represents the category of students from remote areas who cannot afford the dormitory expense.

In order to remain in school, they prefer to rent houses around the school. Some find shelter with other families living near the school.

Number of Courses Failed

In the first year of secondary school, 13 different general courses are required: religion, mathematics,
French, Kinyarwanda, history, geography, civics, physical education, art, science, health, music, and agriculture. Of the sample used in this study, 117 of 317 first-year secondary-school students were able to pass all these courses. This is only 37% of the whole sample. The remainder of the group failed from 1 to 10 courses.

One must note here that in this sample, students who failed three or fewer courses were promoted with the exception of one girl who failed because of her GPA, which was less than 50%. However, 13 of 20 students who failed four courses, 5 of 14 who failed five courses, and 3 of 20 who failed six courses were also promoted because their GPA was high enough to compensate for low grades obtained in failed courses. Others who fell into these categories failed because they had very low GPAs and lower grades in the courses failed. Students who failed seven or more courses were not promoted. Briefly, 240 students were promoted and 77 students were failed. See Table 15.

Failures by Subjects

Table 16 shows that students of both sexes performed well in two courses: agriculture and physical education,
<table>
<thead>
<tr>
<th>Number of Courses</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>69</td>
<td>43.0</td>
<td>30.7</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>15.5</td>
<td>18.0</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>6.0</td>
<td>18.0</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>3.0</td>
<td>11.0</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>6.0</td>
<td>10.0</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>4.4</td>
<td>7.5</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>7.5</td>
<td>4.0</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>3.8</td>
<td>4.0</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>5.6</td>
<td>4.5</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
<td>100.0</td>
<td>156</td>
</tr>
</tbody>
</table>
### TABLE 16

FAILURES BY SUBJECT

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Boys</th>
<th>%</th>
<th>Girls</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>61</td>
<td>38</td>
<td>63</td>
<td>40</td>
<td>124</td>
<td>39</td>
</tr>
<tr>
<td>Sciences</td>
<td>59</td>
<td>33</td>
<td>70</td>
<td>45</td>
<td>123</td>
<td>38</td>
</tr>
<tr>
<td>French</td>
<td>47</td>
<td>29</td>
<td>60</td>
<td>38</td>
<td>107</td>
<td>34</td>
</tr>
<tr>
<td>Geography</td>
<td>45</td>
<td>28</td>
<td>44</td>
<td>28</td>
<td>99</td>
<td>31</td>
</tr>
<tr>
<td>Religion</td>
<td>48</td>
<td>30</td>
<td>43</td>
<td>27</td>
<td>91</td>
<td>29</td>
</tr>
<tr>
<td>Kinyarwanda</td>
<td>29</td>
<td>18</td>
<td>20</td>
<td>13</td>
<td>49</td>
<td>15</td>
</tr>
<tr>
<td>History</td>
<td>25</td>
<td>15</td>
<td>23</td>
<td>15</td>
<td>48</td>
<td>15</td>
</tr>
<tr>
<td>Hygiene</td>
<td>29</td>
<td>18</td>
<td>17</td>
<td>11</td>
<td>46</td>
<td>15</td>
</tr>
<tr>
<td>Civics</td>
<td>23</td>
<td>14</td>
<td>22</td>
<td>14</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Music</td>
<td>14</td>
<td>9</td>
<td>12</td>
<td>7</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Art</td>
<td>5</td>
<td>3</td>
<td>14</td>
<td>9</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Physical Education</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
courses with less emphasis on academic matters. More than one third of the whole sample failed in such important courses as mathematics (39%), sciences (38%), and French (34%). Almost one third also failed in geography (31%) and in religion (29%).

Failures by Gender

Table 17 indicates that this sample is composed of 317 students: 161 males and 156 females. Only 77 of 317 (24.30%) of the whole sample failed. Boys who failed numbered 40 (24.84%); girls were 37 (23.72%).

Failures by Program of Study and Gender

Table 18 shows that, in this sample, of 106 students (66 boys and 40 girls) enrolled in the economics program, 18 (11 boys and 7 girls) were not promoted. This number represents 16.98% of the economics program.

In math-physics, 46 students were enrolled (25 boys and 21 girls). Eleven (23.91%) failed in this field of study-36% of boys, but only 9.95% of girls.

The teacher training program enrolled 105 students (47 boys and 58 girls). Of these 34 failed (16 boys and 18 girls), or 32.38% of this sample from teacher training
<table>
<thead>
<tr>
<th>Gender</th>
<th>Number of Students</th>
<th>Number of Failures</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>161</td>
<td>40</td>
<td>51.95</td>
</tr>
<tr>
<td>Girls</td>
<td>156</td>
<td>37</td>
<td>48.05</td>
</tr>
<tr>
<td>Total</td>
<td>317</td>
<td>77</td>
<td>100.00</td>
</tr>
</tbody>
</table>
TABLE 18
FAILURES BY PROGRAM OF STUDY AND GENDER

<table>
<thead>
<tr>
<th>Type of program</th>
<th>Boys</th>
<th>%</th>
<th>Girls</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics</td>
<td>11 (66)</td>
<td>16.66</td>
<td>7 (40)</td>
<td>17.50</td>
<td>18</td>
<td>16.98</td>
</tr>
<tr>
<td>Math-Physics</td>
<td>9 (25)</td>
<td>36.00</td>
<td>2 (21)</td>
<td>9.95</td>
<td>11</td>
<td>23.91</td>
</tr>
<tr>
<td>Teacher Training Program</td>
<td>16 (47)</td>
<td>34.04</td>
<td>18 (58)</td>
<td>31.03</td>
<td>34</td>
<td>32.38</td>
</tr>
<tr>
<td>Nursing Program</td>
<td>4 (23)</td>
<td>17.40</td>
<td>10 (37)</td>
<td>27.00</td>
<td>14</td>
<td>23.33</td>
</tr>
</tbody>
</table>

Note. Numbers in parentheses are numbers of students who were in the subject Area.
program. The percentage of boys who failed was 34.04%, and of girls was 31.03%.

Sixty students made up the nursing program with 23 boys and 37 girls. Four boys (17.40%) failed; of the 37 girls, 10 (27%) failed.

Distribution of Grade Point Average by Gender
In Rwanda, the grade point averages are based on a 100-point system. The passing grade is 50%; 70% is considered distinction. As shown in Table 19, 77.7% of boys obtained a grade point average equal to or greater than 50%; 22.3% performed below the 50% level. Among girls, 75.6% had an average equal to or greater than 50%; 24.4 performed below the 50% level. Also, 20.50% of boys scored superior compared to 17.9% of girls. The majority of girls performed on the average level. Of the girls, 41.7% obtained a grade equal to or greater than 50% but less than 60%; this is compared to 28.6% of the boys.

Analysis of Data
The purpose of this study was to examine the relationship between selected home background, student and school factors, and academic success of first-year students in Rwandese Seventh-day Adventist secondary schools. This study sought to determine whether such selected factors are related to academic success of
<table>
<thead>
<tr>
<th>GPA</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 99</td>
<td>1</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>80 - 89</td>
<td>5</td>
<td>3.1</td>
<td>8.1</td>
</tr>
<tr>
<td>70 - 79</td>
<td>27</td>
<td>16.8</td>
<td>44.8</td>
</tr>
<tr>
<td>60 - 69</td>
<td>46</td>
<td>28.6</td>
<td>75.2</td>
</tr>
<tr>
<td>50 - 59</td>
<td>46</td>
<td>28.6</td>
<td>75.2</td>
</tr>
<tr>
<td>40 - 49</td>
<td>46</td>
<td>28.6</td>
<td>75.2</td>
</tr>
<tr>
<td>30 - 39</td>
<td>8</td>
<td>5.0</td>
<td>13.0</td>
</tr>
<tr>
<td>20 - 29</td>
<td>1</td>
<td>0.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
<td>100.0</td>
<td>311.0</td>
</tr>
</tbody>
</table>
first-year secondary-school students in the Seventh-day Adventist educational system in Rwanda.

Test of Hypotheses

In order to facilitate the analysis of the significance, the hypotheses are presented in null form. Each hypothesis is tested at the 0.05 level of significance.

Hypothesis 1

Hypothesis 1 states: There is no relationship between home background and academic success of first-year secondary-school students. This hypothesis has three sub-hypotheses.

Sub-hypothesis 1a

Sub-hypothesis 1a states: There is no relationship between parents' level of education and first-year secondary-school success.

Tables 20 and 21 show the parents' level of education of students who passed or failed the first year of secondary education. The chi-square analysis indicates that there is no statistically significant relationship between parents' level of education and first-year secondary-school success ($\chi^2 = 5.385$, $df = 5$, Prob = 0.371 & $\chi^2 = 4.036$, $df = 5$, Prob = 0.544).
TABLE 20

CHI-SQUARE ANALYSIS OF RELATIONSHIP BETWEEN FATHER'S LEVEL OF EDUCATION AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Committee's Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
</tr>
<tr>
<td>Didn't go to school</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>(59.26)</td>
</tr>
<tr>
<td>Not completed elementary school</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>(80.00)</td>
</tr>
<tr>
<td>Completed elementary school</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>(74.51)</td>
</tr>
<tr>
<td>Not completed secondary school</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>(77.27)</td>
</tr>
<tr>
<td>Completed secondary school</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>(79.66)</td>
</tr>
<tr>
<td>Attended college</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>(80.00)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 5.385, \quad df = 5, \quad \text{Prob} = 0.371 \]

**Note.** Figures in parentheses are percentages.
<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Committee's Decision</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
<td>Failed</td>
<td></td>
</tr>
<tr>
<td>Didn't go to school</td>
<td>41</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(78.85)</td>
<td>(21.15)</td>
<td></td>
</tr>
<tr>
<td>Not completed elementary school</td>
<td>66</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(70.21)</td>
<td>(29.79)</td>
<td></td>
</tr>
<tr>
<td>Completed elementary school</td>
<td>75</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(73.53)</td>
<td>(26.47)</td>
<td></td>
</tr>
<tr>
<td>Not completed secondary school</td>
<td>19</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(86.36)</td>
<td>(13.64)</td>
<td></td>
</tr>
<tr>
<td>Completed secondary school</td>
<td>22</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(81.48)</td>
<td>(18.52)</td>
<td></td>
</tr>
<tr>
<td>Attended college</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(83.33)</td>
<td>(16.67)</td>
<td></td>
</tr>
</tbody>
</table>

\( \chi^2 = 4.036, \quad df = 5, \quad Prob = 0.544 \)

**Note.** Figures in parentheses are percentages.
Sub-hypothesis 1b

Sub-hypothesis 1b states: There is no relationship between father's occupation and first-year secondary-school success.

Table 22 shows the father's occupation of students who passed or failed their first year of secondary school.

The chi-square analysis suggests that there is no statistically significant relationship between father's occupation and first-year secondary-school success ($\chi^2 = 4.037, \ df = 5, \ Prob = 0.544$).

Sub-hypothesis 1c

Sub-hypothesis 1c states: There is no relationship between family size and first year of secondary-school success.

The average family size of those who passed their first-year secondary school was 5.98 ($N = 237, \ SD = 2.37$) compared to 6.29 for the failures ($N = 76, \ SD = 2.31$). This difference was not statistically significant ($t = 0.98, \ df = 311, \ Prob = 0.325$).
<table>
<thead>
<tr>
<th>Father's Occupation</th>
<th>Committee's Decision</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
<td>Failed</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>111</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(75.00)</td>
<td>(25.00)</td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>58</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(76.32)</td>
<td>(23.68)</td>
<td></td>
</tr>
<tr>
<td>Teaching profession</td>
<td>24</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(66.67)</td>
<td>(33.33)</td>
<td></td>
</tr>
<tr>
<td>Medical career</td>
<td>9</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(90)</td>
<td>(10.00)</td>
<td></td>
</tr>
<tr>
<td>Jobs for skilled workers</td>
<td>8</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(88.89)</td>
<td>(11.11)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>25</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(80.65)</td>
<td>(19.35)</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 4.037 \quad df = 5, \quad Prob = 0.544 \]

**Note.** Figures in parentheses are percentages.
Hypothesis 2

Hypothesis 2 states: There is no relationship between student characteristics and academic success of first-year secondary-school students. Under this hypothesis 10 sub-hypotheses will be considered.

Sub-hypothesis 2a

Sub-hypothesis states: There is no relationship between gender and academic success of first-year secondary-school students.

Table 23 gives the percentages by gender of first-year secondary-school students who passed or failed. The percentage of students who passed and the percentage of students who failed were almost equal for both sexes. Chi-square analysis shows that there is no relationship between gender and first-year secondary-school success ($\chi^2 = 0.055$, df = 1, Prob = 0.815).

Sub-hypothesis 2b

Sub-hypothesis 2b states: There is no relationship between elementary-school academic performance and first-year secondary-school success.
TABLE 23
CHI-SQUARE SHOWING THE RELATIONSHIP BETWEEN GENDER AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Committee's Decision</th>
<th>Passed N=240</th>
<th>Failed N=77</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>121</td>
<td>40</td>
</tr>
<tr>
<td>(75.16)</td>
<td>(24.84)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>119</td>
<td>37</td>
</tr>
<tr>
<td>(76.28)</td>
<td>(23.72)</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 0.055 \quad df = 1, \quad Prob = 0.815$

Note. Figures in parentheses are percentages

Table 24 shows the mean score and GPA obtained in four important elementary-school courses: French, math, religion, and environmental studies.

The mean elementary-school GPA for students who passed was 68.42% with a standard deviation of 10.63. The mean for those who failed was 57.27% with standard deviation of 10.50. The mean difference between passes and failures was about 10 points. The t-test shows that this difference is statistically significant at the 0.05 level ($t = 6.33, df = 184, p < 0.0001$).
<table>
<thead>
<tr>
<th>Subject</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>df</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td>127</td>
<td>61.92</td>
<td>15.10</td>
<td>45</td>
<td>43.40</td>
<td>14.55</td>
<td>170</td>
<td>7.14**</td>
</tr>
<tr>
<td>Math</td>
<td>127</td>
<td>61.26</td>
<td>16.28</td>
<td>45</td>
<td>47.73</td>
<td>13.65</td>
<td>170</td>
<td>4.98**</td>
</tr>
<tr>
<td>Religion</td>
<td>127</td>
<td>68.83</td>
<td>15.38</td>
<td>45</td>
<td>61.86</td>
<td>17.31</td>
<td>170</td>
<td>2.50*</td>
</tr>
<tr>
<td>Environmental Studies</td>
<td>127</td>
<td>69.48</td>
<td>13.12</td>
<td>45</td>
<td>59.44</td>
<td>13.78</td>
<td>170</td>
<td>4.35**</td>
</tr>
<tr>
<td>GPA</td>
<td>137</td>
<td>68.42</td>
<td>10.63</td>
<td>49</td>
<td>57.27</td>
<td>10.50</td>
<td>184</td>
<td>6.33**</td>
</tr>
</tbody>
</table>

* $p < 0.05$.
** $p < 0.0001$. 
Table 24 also shows that there are statistically significant differences between the elementary-school academic performance of students who passed and those who failed on four subjects (French, math, religion, and environmental studies).

**Sub-hypothesis 2c**

Sub-hypothesis 2c states: *There is no relationship between elementary-school grade repetition and academic success of first-year secondary-school students.*

Table 25 indicates that 63% (155 out of 246) of the students had repeated one or more elementary-school grades. It also shows that compared to passes a slightly larger proportion of those who failed had repeated one or more elementary-school grades. However, the chi-square analysis indicates that this difference was not statistically significant. Thus, no significant relationship between repeating grades in elementary school and success in first-year secondary-school is indicated ($\chi^2 = 2.52, \ df = 1, \ Prob = 0.112$).

**Sub-hypothesis 2d**

Sub-hypothesis states: *There is no relationship between entrance examination score and first-year secondary-school success.*
TABLE 25

CHI-SQUARE SHOWING THE RELATIONSHIP BETWEEN ELEMENTARY-GRADE REPETITION AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Grades Repetition</th>
<th>Committee's Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
</tr>
<tr>
<td>Repeated some grades</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>(60.4)</td>
</tr>
<tr>
<td>Did not repeat</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>(39.6)</td>
</tr>
</tbody>
</table>

χ² = 2.52, DF = 1, Prob = 0.112

Note. Figures in parentheses are percentages.

Table 26 shows that the mean entrance examination score for students who passed and those who failed the first year of secondary school was 22.43 and 19.07, respectively. The standard deviations were 7.73 and 6.07. Entrance examination scores of students who successfully passed their first year of secondary school were significantly higher than the scores of those who failed (t = 2.45, df = 164, Prob = 0.015). Thus, there is a relationship between an entrance examination score and success in the first year of secondary school.
TABLE 26

**T-TEST OF THE RELATIONSHIP BETWEEN ENTRANCE EXAMINATION SCORE AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS**

<table>
<thead>
<tr>
<th>Decision</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed</td>
<td>128</td>
<td>22.43</td>
<td>7.74</td>
</tr>
<tr>
<td>Failed</td>
<td>38</td>
<td>19.07</td>
<td>6.07</td>
</tr>
</tbody>
</table>

$t$-Test  \( t = 2.45, \) \( df = 164, \) \( Prob = 0.015 \)

**Note.** Means are percentages.

**Sub-hypothesis 2e**

Sub-hypothesis 2e states: There is no relationship between taking/not taking the entrance examination and first-year secondary-school success.

Table 27 shows that 76.33% of those who have taken the entrance examination passed their first year compared to 71.87% of those who have not taken it. About 24% of those who have taken the entrance examination failed compared to 28% of those who did not sit for the entrance examination. However, the chi-square analysis revealed that there is no relationship between having taken or not taken the entrance examination and first-year secondary-school success \( (\chi^2 = 0.542, \ df = 1, \ Prob = 0.462) \).
TABLE 27

CHI-SQUARE OF THE RELATIONSHIP BETWEEN TAKING/NOT TAKING ENTRANCE EXAMINATION AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Taken Entrance Exam</th>
<th>Committee's Decision</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
<td>Failed</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>187</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(76.33)</td>
<td>(23.67)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>46</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(71.87)</td>
<td>(28.13)</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 0.542, \text{ df } = 1, \text{ Prob } = 0.462 \]

Note. Figures in parentheses are percentages.

Sub-hypothesis 2f

Sub-hypothesis 2f states: There is no relationship between student's curricular choice and academic success.

As shown in Table 28, the proportion of students who chose their curriculum (rather than assigned) appears to be similar for both passes and failures. The chi-square analysis resulted in no relationship between student choice of program and first-year secondary-school success \( (\chi^2 = 0.084, \text{ df } = 1, \text{ Prob } = 0.772) \).

Sub-hypothesis 2g

Sub-hypothesis 2g states: There is no relationship between behavioral grades and academic success of first-year secondary-school students.
TABLE 28

CHI-SQUARE OF THE RELATIONSHIP BETWEEN STUDENT'S CURRICULAR CHOICE AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Student's Choice</th>
<th>Committee's Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
</tr>
<tr>
<td>I chose my curriculum</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>(76.40)</td>
</tr>
<tr>
<td>I didn't choose my curriculum</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>(75.00)</td>
</tr>
</tbody>
</table>

$\chi^2 = 0.084, \ df = 1, \ Prob = 0.772$

Note. Figures in parentheses are percentages.

The results of the t-test of the mean difference are presented in Table 29. Students who passed the first year of secondary school had a mean score of 79.83% for behavior. Those who failed had a mean score of 76.89%. This slight difference was statistically significant at the 0.05 level ($t = 2.45, \ df = 255, \ Prob = 0.008$). One can conclude that there is some relationship between behavioral grades and first-year secondary-school success.

Various kinds of misbehavior are recorded in the registrar's office. At the end of each quarter, a student who was well behaved will get 90% in behavior.
A student who misbehaved will lose grades proportionally to the number and the seriousness of the incidents recorded under his/her name.

Furthermore, a student who misbehaves frequently not only can lose grades in behavior, he/she can also miss classes, quizzes, and examinations. For instance, when a student consistently shows bad behavior, he/she can be sent home for a short time. In this case, he/she may get zero grades for all homework, quizzes, and tests given during his/her absences. This can have disastrous consequences for a student's future academic success.

**TABLE 29**

<table>
<thead>
<tr>
<th>Committee's Decision</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed</td>
<td>194</td>
<td>79.83</td>
<td>7.40</td>
</tr>
<tr>
<td>Failed</td>
<td>63</td>
<td>76.89</td>
<td>8.24</td>
</tr>
</tbody>
</table>

$t$-Test = 2.45, $df = 255$, Prob = 0.0081

**Note.** Means are percentages.
Sub-hypothesis 2h

Sub-hypothesis 2h states: There is no relationship between first-year secondary-school student attitude toward teachers and first-year secondary-school success.

Table 30 shows the means of student attitude toward teachers. The t-test was used to test whether there are differences in attitude toward teachers between passes and failures. Overall, both groups of students appear to have positive attitudes toward their teachers. For example, both groups felt that their teachers knew their subject matter and were fair toward their students. This apparent agreement resulted in no statistically significant difference in attitude between those who passed and those who failed.

Thus, no significant relationship between student attitude toward teachers and first-year secondary-school success was indicated.

Sub-hypothesis 2i

Sub-hypothesis 2i states: There is no relationship between student attitude toward school and first-year secondary-school success.
TABLE 30

$t$-TEST OF THE RELATIONSHIP BETWEEN FIRST-YEAR STUDENT ATTITUDE TOWARD TEACHERS AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Statement</th>
<th>Decision</th>
<th>N</th>
<th>Mean*</th>
<th>Std Dev.</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know their subject matter</td>
<td>Pass</td>
<td>235</td>
<td>4.45</td>
<td>0.79</td>
<td>-0.997</td>
<td>308</td>
<td>0.319</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>75</td>
<td>4.56</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explain the lesson clearly</td>
<td>Pass</td>
<td>238</td>
<td>4.01</td>
<td>0.87</td>
<td>0.742</td>
<td>311</td>
<td>0.458</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>75</td>
<td>3.92</td>
<td>0.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explain how to evaluate</td>
<td>Pass</td>
<td>237</td>
<td>3.15</td>
<td>1.36</td>
<td>1.408</td>
<td>310</td>
<td>0.159</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>75</td>
<td>2.89</td>
<td>1.53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignments feedback</td>
<td>Pass</td>
<td>235</td>
<td>4.10</td>
<td>1.15</td>
<td>0.594</td>
<td>310</td>
<td>0.553</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>4.01</td>
<td>1.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of class period</td>
<td>Pass</td>
<td>235</td>
<td>4.12</td>
<td>1.10</td>
<td>0.274</td>
<td>310</td>
<td>0.784</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>4.07</td>
<td>1.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Give too much homework</td>
<td>Pass</td>
<td>237</td>
<td>3.66</td>
<td>1.22</td>
<td>-0.964</td>
<td>312</td>
<td>0.336</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>3.82</td>
<td>1.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Decision</td>
<td>N</td>
<td>Mean</td>
<td>Std Dev</td>
<td>t</td>
<td>df</td>
<td>p</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------</td>
<td>-----</td>
<td>------</td>
<td>---------</td>
<td>-------</td>
<td>-----</td>
<td>-------</td>
</tr>
<tr>
<td>Use of teaching techniques</td>
<td>Pass</td>
<td>236</td>
<td>4.08</td>
<td>1.170</td>
<td>-0.714</td>
<td>310</td>
<td>0.476</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>76</td>
<td>3.97</td>
<td>1.380</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standards for class works</td>
<td>Pass</td>
<td>236</td>
<td>4.10</td>
<td>1.040</td>
<td>0.372</td>
<td>309</td>
<td>0.710</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>76</td>
<td>4.05</td>
<td>1.120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote mutual respect</td>
<td>Pass</td>
<td>237</td>
<td>4.28</td>
<td>0.950</td>
<td>-0.124</td>
<td>311</td>
<td>0.901</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>4.20</td>
<td>0.980</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmosphere for learning</td>
<td>Pass</td>
<td>236</td>
<td>4.26</td>
<td>1.030</td>
<td>0.146</td>
<td>311</td>
<td>0.883</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>4.24</td>
<td>1.100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairness toward students</td>
<td>Pass</td>
<td>237</td>
<td>4.50</td>
<td>0.800</td>
<td>0.761</td>
<td>312</td>
<td>0.447</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>4.41</td>
<td>0.893</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation to work</td>
<td>Pass</td>
<td>232</td>
<td>4.45</td>
<td>0.804</td>
<td>1.506</td>
<td>307</td>
<td>0.133</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>4.28</td>
<td>1.020</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Based on a 5-point Likert scale where: 1 = strongly disagree, 2 = somewhat disagree, 3 = uncertain, 4 = agree, 5 = strongly agree.
Table 31 shows the means and standard deviations for each semantic differential scale. In general, the students had somewhat positive attitudes toward school. The $t$-test analysis indicates no significant difference between the groups (passes and failures). Consequently, there is no relationship between student attitude toward school and first-year secondary-school success.

**Sub-hypothesis 2**

Sub-hypothesis states: There is no relationship between the amount of time devoted to study and academic success of first-year secondary-school students.

Table 32 shows that the percentages of success and failure for each of the four groups. The sample was divided into four groups according to the time spent daily: 1, 2, 3, 4 or more hours on school work. Most students seem to spend daily 2 to 3 hours doing school work. No significant relationship between time spent on school work after class periods and first-year secondary-school success was found ($\chi^2 = 2.445$, $df = 3$, Prob = 0.485).
### TABLE 31

**t-TEST OF THE RELATIONSHIP BETWEEN FIRST-YEAR STUDENT ATTITUDE TOWARD SCHOOL AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Decision</th>
<th>N</th>
<th>Mean*</th>
<th>Std Dev</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean ------------ Dirty</td>
<td>Pass</td>
<td>237</td>
<td>5.63</td>
<td>1.58</td>
<td>1.11</td>
<td>311</td>
<td>0.268</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>76</td>
<td>5.39</td>
<td>1.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fair ------------ Unfair</td>
<td>Pass</td>
<td>238</td>
<td>5.91</td>
<td>1.50</td>
<td>0.544</td>
<td>313</td>
<td>0.586</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>77</td>
<td>5.80</td>
<td>1.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pleasant --- Unpleasant</td>
<td>Pass</td>
<td>228</td>
<td>5.95</td>
<td>1.41</td>
<td>1.274</td>
<td>300</td>
<td>0.203</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>74</td>
<td>5.54</td>
<td>1.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interesting ---- Boring</td>
<td>Pass</td>
<td>221</td>
<td>5.69</td>
<td>1.73</td>
<td>0.636</td>
<td>293</td>
<td>0.524</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>74</td>
<td>5.54</td>
<td>1.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good ------------ Bad</td>
<td>Pass</td>
<td>238</td>
<td>5.92</td>
<td>1.48</td>
<td>0.357</td>
<td>310</td>
<td>0.721</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>74</td>
<td>5.85</td>
<td>1.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Decision</td>
<td>N</td>
<td>Means</td>
<td>Std Dev</td>
<td>t</td>
<td>df</td>
<td>p</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------</td>
<td>----</td>
<td>-------</td>
<td>---------</td>
<td>--------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Strict------ Lenient</td>
<td>Pass</td>
<td>232</td>
<td>6.32</td>
<td>1.18</td>
<td>0.484</td>
<td>303</td>
<td>0.628</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>73</td>
<td>6.24</td>
<td>1.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active------ Passive</td>
<td>Pass</td>
<td>232</td>
<td>6.21</td>
<td>1.27</td>
<td>0.708</td>
<td>306</td>
<td>0.479</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>76</td>
<td>6.09</td>
<td>1.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult---- Easy</td>
<td>Pass</td>
<td>238</td>
<td>4.80</td>
<td>2.10</td>
<td>0.077</td>
<td>309</td>
<td>0.938</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>73</td>
<td>4.48</td>
<td>2.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valuable----- Worthless</td>
<td>Pass</td>
<td>237</td>
<td>6.49</td>
<td>1.12</td>
<td>0.473</td>
<td>311</td>
<td>0.636</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>76</td>
<td>6.42</td>
<td>1.30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Based on a 7-point semantic differential scale where: 1 = negative (e.g., dirty), 7 = positive (e.g., clean).
TABLE 32
CHI-SQUARE OF THE RELATIONSHIP BETWEEN TIME SPENT ON SCHOOL WORK AFTER CLASS PERIODS AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Time Spent Daily on School Work</th>
<th>Passed</th>
<th>Failed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 hour</td>
<td>32</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>(82.05)</td>
<td>(19.95)</td>
</tr>
<tr>
<td>2 hours</td>
<td>78</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>(71.56)</td>
<td>(28.44)</td>
</tr>
<tr>
<td>3 hours</td>
<td>97</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>(78.23)</td>
<td>(21.77)</td>
</tr>
<tr>
<td>4 hours or more</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>(73.17)</td>
<td>(26.83)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 2.445, \text{ df } = 3, \text{ Prob } = 0.485 \]

Note. Figures in parentheses are percentages.

Hypothesis 3

Hypothesis 3 states: There is no relationship between school characteristics and academic success of first-year secondary-school students. This hypothesis has four sub-hypotheses.

Sub-hypothesis 3a

Sub-hypothesis 3a states: Among first-year secondary-school students, there is no difference between academic
success of students who live in the dormitory and students who live off-campus.

Table 33 shows the proportion of students who live in dormitories and those who live in the community. Proportionally, more students who passed live in dormitories. However, this difference was not statistically significant at the 0.05 level ($\chi^2 = 1.72$, $df = 1$, $p = 0.190$).

<table>
<thead>
<tr>
<th>Type of Residence</th>
<th>Committee's Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
</tr>
<tr>
<td>Dormitory</td>
<td>148</td>
</tr>
<tr>
<td></td>
<td>(78.31)</td>
</tr>
<tr>
<td>Community</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>(71.87)</td>
</tr>
</tbody>
</table>

$\chi^2 = 1.72$, $df = 1$, $Prob = 0.190$

Note. Figures in parentheses are percentages.
Sub-hypothesis 3b

Sub-hypothesis 3b states: There is no relationship between school size and academic success of first-year secondary-school students.

Table 34 shows the percentages of students who passed and those who failed from three sizes of secondary schools. The medium school size has a high percentage of success (83.03%) followed by the small school size (76.67%). The large school size comes last with 71.87% of school success. However, the chi-square analysis revealed that there is no relationship between school size and first-year secondary-school success ($\chi^2 = 5.603, \text{ df} = 2, \text{ Prob} = 0.061$).

Sub-hypothesis 3c

Sub-hypothesis 3c states: There is no relationship between class size and academic success of first-year secondary-school students.

The class sizes for all three schools are large. The number of students per class ranged from 40 to 65 students. Therefore this hypothesis could not be tested because there was only one class size.
TABLE 34

CHI-SQUARE OF RELATIONSHIP BETWEEN SCHOOL SIZE
AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>School Size</th>
<th>Committee's Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
</tr>
<tr>
<td>Small Size</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>(76.67)</td>
</tr>
<tr>
<td>Medium Size</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>(83.02)</td>
</tr>
<tr>
<td>Large Size</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>(70.20)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 5.603, \quad df = 2, \quad Prob = 0.061 \]

**Note.** Figures in parentheses are percentages.
Total number of students for each school involved in this study: Mugonero Nursing 257 (small); Rwankeri College 426 (medium); Gitwe College 649 (large).

**Sub-hypothesis 3d**

Sub-hypothesis 3d states: There is no relationship between field of study and academic success of first-year secondary-school students.

Table 35 reveals the percentages of student success and failure per field of study. Economics has the highest percentage of success with 83.02% (88 out of 106), followed by the nursing program with 76.67% (46 out of
60). Third was math-physics with 76.09% (35 out of 46), followed by the teacher-training program with 67.62% (71 out of 105). Despite that difference in success between these four areas of study, the test of hypothesis revealed no relationship between field of study and first-year secondary-school success was indicated ($\chi^2 = 6.850, \text{df} = 3, \text{Prob} = 0.077$).

**TABLE 35**

CHI-SQUARE SHOWING THE RELATIONSHIP BETWEEN THE FIELD OF STUDY AND FIRST-YEAR SECONDARY-SCHOOL SUCCESS

<table>
<thead>
<tr>
<th>Field of Study</th>
<th>Decision</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passed</td>
<td>Failed</td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td>88</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(83.02)</td>
<td>(16.98)</td>
<td></td>
</tr>
<tr>
<td>Math-Physics</td>
<td>35</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(76.09)</td>
<td>(23.91)</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>46</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(76.67)</td>
<td>(23.33)</td>
<td></td>
</tr>
<tr>
<td>Teacher Training Program</td>
<td>71</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(67.62)</td>
<td>(32.38)</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 6.850, \text{df} = 3, \text{Prob} = 0.077$

Note. Figures in parentheses are percentages.
Summary

This chapter provides an analysis of data collected from first-year secondary-school students attending three Seventh-day Adventist secondary schools: Gitwe College, Rwankeri College, and Mugonero Nursing School. The objective was to determine factors related to first-year secondary-school success.

Two statistical measures were used in this analysis to test the hypotheses. The t-test was used to establish the significance of the difference between means, and the chi-square was used to determine the relationship between first-year secondary-school success and selected student, school, and family variables.

The test of hypotheses revealed the following:

1. There is no relationship between family background and first-year secondary-school success.

2. There is no relationship between school factors and first-year secondary-school success.

3. There is no relationship between student attitude and first-year secondary-school success.

4. There is a positive relationship between elementary-school grade point average and first-year
secondary-school success. Students who passed had a mean elementary-school grade point average of 68.42% compared to 57.27% of those who failed.

5. There is a positive relationship between elementary-school grades in mathematics, French, religion, and environmental studies and secondary-school success. Students who passed first year had higher grades in important courses taught in elementary school.

6. There is a positive relationship between entrance examination score and first-year secondary-school success. Entrance examination scores of students who passed their first year were higher than the scores of those who failed.

7. There is a positive relationship between first-year secondary-school behavioral grades and first-year secondary-school success. Behavioral grades of students who passed were significantly higher than the grades of those who failed.
CHAPTER V

SUMMARY, DISCUSSION, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

This chapter is divided into three sections: (1) a brief description of the purpose of this study, the methodology used, and the major findings, (2) a discussion of the findings, and (3) the implications and recommendations for practice and further research.

Statement of the Problem

More than 20% of first-year secondary-school students who fail are not allowed to repeat the same grade. The school system does not provide another kind of school where they can go to. They are sent home without enough tools that will allow them to be productive.

Furthermore, this failure puts parents in a very difficult situation. In general, to afford school expenses even for one year most parents have to sell
almost everything they have such as land, cows, and goats. Leaving school before graduation has a negative social and economic impact on families.

Purpose of the Present Study

This study was designed to determine the factors that contribute to the academic success of first-year students in Seventh-day Adventist secondary schools in Rwanda. Its intent was to provide information that could help parents, teachers, school administrators, and students to improve school achievement in Rwanda where first-year secondary-school dropouts have no future in regular academic pursuits.

Sample

The sample was composed of 317 first-year secondary-school students (161 boys and 156 girls) who were attending Gitwe Adventist College, Rwankeri College, and Mugonero Nursing School. These students started their secondary education in September 1992.

Procedures

In order to gather information for this study, two data-collection instruments were developed. One was a

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questionnaire used to collect some demographic data such as sex, type of residence, parents' level of education, occupation of the father, and family size. The same instrument was also used to collect such information as study habits, student opinion about his/her school, and attitude toward teachers. Another instrument used was an archival data-collection instrument. This focused on demographic and academic information that could be found in the students' files in the registrar's office of the respective schools. I completed the data collection during February and March 1993. Additional data were sent by principals of respective schools after the end of the school year in July and August 1993.

Data were analyzed using two statistical measures: chi-square and t-test. Chi-square helped to analyze the relationship between selected variables and the criteria of success as determined by the decision for promotion or failure by the deliberation committee at the end of the school year. The t-test was used to determine the significance of the difference between means.

The relationship was established between first-year secondary-school success and selected variables such as parents' level of education, father's occupation, family
size, gender, elementary-school academic background (elementary-school grades in math, French, religion, environmental study, and elementary-school GPA), grade repetition, entrance-examination score, curriculum choice, first-year secondary-school behavioral grades, residence during school year, student attitude, school size, class size, time devoted to school work after class hours, and field of study.

Summary of the Findings

The test of the hypotheses revealed the following:

1. Family background factors such as education of parents, father’s occupation, and family size are not related to first-year secondary-school success.

2. School characteristics including school size, class size, school curriculum, and student’s residence during the school year are unrelated to first-year secondary-school success.

3. Elementary-school graduating class grade point average, grades in mathematics, French, Religion, and environmental studies are significantly related to first-year secondary-school success.
4. First-year student behavioral grades are significantly related to school success.

5. Entrance examination scores are also related to school success.

6. Other student variables such as gender, repeating elementary-school grades, student curriculural choice, residence patterns during school year, amount of time spent on school work after school hours, and student attitude are not related to school success.

Discussion

This section discusses the major findings and illustrates some conclusions drawn from the findings of this study.

As mentioned above, the intent of this study was to find those variables that could contribute to first-year secondary-school success in Seventh-day Adventist secondary schools in Rwanda. The variables selected were from three categories: family background factors, student characteristics, and school characteristics.

No statistically significant relationship between family background variables and first-year secondary-school success was found.
This finding seems to disagree with previous research. Most studies done in this area tend to relate family variables to children's school achievement (Bowker, 1993; Grissmer et al., 1994; Phelps et al., 1990).

As shown in Tables 10 and 11, the majority of the students in this sample have parents who are not educated. Only 15 students have fathers who hold college degrees, and 5 students have mothers who have a college education. Even those who are educated may not exert their direct influence on academic success of their children. All three schools are in remote rural areas, and generally most educated people stay in cities where they can get jobs. Furthermore, most middle-class parents who live near a school campus prefer to keep their children in school dormitories where personal evening study is supervised by school authorities. However, most poor students stay with their parents.

Parents who live far from the school arrange for their children to stay with friends, family members, or with other students from poor families. In most cases, day students who have no friends or relatives near the campus live by themselves. Thus, whether parents are
educated or not, their direct academic intervention, if any, is very limited. Parents who could possibly help their children academically live far from them, and those who live with their children are academically not able to help them with their school work.

As parents' education, father's occupation also was unrelated to school success. Again, the majority of the subjects in this sample have fathers whose professions belong economically to the same low-income category. As shown in Table 11, 148 students have fathers who practice traditional agriculture, and 76 have fathers who are businessmen. Agriculture in Rwanda is not really a profession. Most of those who practice it have a small piece of land that cannot produce even enough food for their daily living.

There are not enough details about the kind of business these parents are running. However, Rwanda does not have many people who own large businesses. In general, agriculture, business, and jobs for skilled workers belong economically to the same low-income level, which means that most of the students in this sample are from the same socioeconomic strata. As Sukhendra (1967)
affirms, there is no "difference in achievement of the children from minor business and sales workers, skilled workers, agriculturists and unskilled workers" (p. 361).

As Table 12 indicates, 84.23% (267 out of 317) are from large families with four or more children. According to Teachman (1996), on the high-school level, family variables have a little effect on school achievement. Marjoribanks (1990) found no relationship between sibling variable and student academic achievement. It seems that what counts more here is the intellectual ability of the student rather than the conditions in his/her family. High-school students, especially in developing countries, have to pass through a severe screening process. Only the best ones are retained. As Heyneman and Loxley (1983) said, these high-school students who are tightly selected through an entrance examination tend to compete successfully with their peers from high upper class. This also agrees with Shiman (1970), who found that in developing countries the socioeconomic status, which includes education of parents, parents' occupation, and the size of the family, "appears to be of a little importance for achievement among students who have been carefully selected for advanced courses" (p. 187).
It is important to mention here that in poor countries like Rwanda where education is the only way to a better life, parents from all family backgrounds encourage their children to do well in school so that after their studies they can get jobs and be able to support themselves and their families. The motivation for a better life may then be the determining factor. Students whose parents are educated are motivated to maintain their family standards, and tend to follow a parent’s educational example. Those from illiterate families are encouraged to study hard so that they can get jobs and be able to financially help their families.

Student characteristics that were studied in this study are gender differences, previous academic background, student attitude, student behavior, and time spent after school hours on school work.

The analysis revealed that of the sample in this study, 76.28% (119 out of 156) of the girls and 75.16% (121 out of 161) of the boys passed their first year of secondary school. According to the results of the test of the hypothesis 2a (shown in Table 23), there was no relationship between gender and first-year secondary-
school success. This result does not agree with previous research.

Much of the research already done in this area has primarily examined gender differences in mathematics/sciences and language success. Most of these studies showed that boys perform better than girls in math and sciences, and girls outperform boys in languages (Benbow & Arjmand, 1990; Colangelo & Kerr, 1990; Kianian, 1996; Peltz, 1990). The present study was interested in the general academic success in all courses taught in the first year of secondary school. According to the curriculum (prescribed by the Ministère de l'Enseignement Primaire et Secondaire, 1983), the first-year secondary-school math/physics and teacher training programs have 12 different courses; the economics and nursing programs have 11 and 10 courses, respectively. Two-thirds of these courses represent general courses; math/science and language each represents one third of the whole curriculum. School success, then, depends on how many courses a given student passes or fails. Generally speaking, first-year boys and girls showed the same general academic success.
I do not find it surprising that the boys and girls in this sample performed equally. First of all, these two groups were just starting secondary-school education; their general academic success in elementary school was almost identical; and the beginning of secondary school was not too much of a change in this situation. Also both groups, male and female, were selected according to their entrance examination scores. It was an assumption that students who have the same score on the entrance examination could perform in the same way while in the secondary school.

The students' academic background determined by elementary-school graduating-class grades earned in math, French, religion, and environmental studies and elementary-school graduating-class GPA were all significantly related to success in the first year of secondary school.

In fact, mathematics, French, religion, and environmental studies are important academic courses taught in elementary school. The Rwandese elementary-school program focuses on the academic preparation of the students for secondary-school education. Elementary-

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school students who have good grades in these courses will also have good GPAs. As elementary-school grades and GPA are an indication of what kind of academic preparation a candidate has for further studies, elementary-school graduates who have a high GPA, and high grades in Math, French, religion, and environmental studies will have a better chance of performing well in high school. This also agrees with previous research. It has been found that college-freshman achievement can be predicted by high science scores and high GPA (Astin et al., 1987; Van de Water & Augenblick, 1987).

Repeating elementary-school grades does not affect first-year secondary-school success. This study examined 155 students who had repeated at least one elementary-school grade and 91 who did not repeat. The number of non-repeaters who failed was 15 whereas that of repeaters was 39--16.48% and 25.16% respectively of their groups who failed. The chi-square analysis showed that the difference was not statistically significant.

In general, students who had repeated some elementary-school grades, especially the last grade of elementary-school may have a better chance of getting
admitted to secondary-school. One plausible reason is that they may know by heart the course content taught in the last elementary-school grade and are more familiar with the test material than other candidates. However, when these students get into secondary school they have to face new school material which may require more competence than pure memorization.

In any case, it is interesting that in this study repeaters performed as well as non-repeaters. Shepard and Smith (1989) also admit that retained students may perform well during the first year. The readiness may not persist during the second year. As it is still the beginning of a new level, it is impossible at the present time to speculate on the impact of grade repetition on these students. Another study needs to be undertaken to learn whether repeaters will perform as well as non-repeaters throughout the whole secondary-school program. At the end of high school one may be able to conclude what the true effect of repeating elementary-school grades has on future academic success.

One factor, the entrance examination, was related to first-year secondary-school success. In fact, most
entrance examinations are very hard, though they do vary from year to year depending on the people who prepare them. For example, the 1992 test was very difficult. Grades on the test were between 59% and 7%. Only two candidates received more than 40% (59% & 43%). Those who earned relatively high grades in this examination might have a strong academic foundation for secondary-school education.

It is because of its predictive power that school systems all over the world use entrance examination to assess the potential success of the candidates. In Ghana, the common entrance examination is used to maximize the possibility of success of secondary-school students (Shiman, 1970). Here in the United States, similar examinations are also used to test the ability of the applicants. Smith (1993) recently found that the High School Placement Test and the American College Test were good predictors of high-school grade point average.

Another variable tested in this study was the amount of time students spent on school work after school hours. As Table 32 shows, 12.46% (39) spent 1 hour, 34.82% (109) spent 2 hours, 39.62% (124) spent 3 hours, and 13.10% (41)
used 4 hours. The groups who spent 1 and 3 hours had a high percentage of success.

The test of hypothesis indicated that there is no relationship between student success and the time spent on school work. Again this finding does not agree with previous research. It has been found that students who spend a lot of time on school work may get good grades regardless of their ability level (Doyle & Barber, 1990). According to this study, it seems that the amount of time a student spends on a given course depends mostly on how well he/she masters the subject. Students who feel comfortable with a subject may use less time, whereas those with difficulties may spend more time (3 to 4 hours). Success, therefore, does not depend on the amount of time used in studying but on how well the individual masters his/her school material regardless of the amount of time spent.

Student behavior does affect the grades in Seventh-day Adventist secondary schools. Successful students had significantly higher behavioral grades than failures.

Usually, students with good behavioral grades are those who attend classes regularly, who do their homework
on time, and who pay attention during class presentation. Those with poor grades often miss classes, quizzes, and examinations. Sometimes they are absent, come late, or do not pay attention to what is going on in class. Thus, students who receive good grades for behavior often do better academically than students who misbehave (Deschamps, 1992; Truesdell & Abramson, 1992).

As Kawakami et al. (1995) found, in most cases, students who misbehave are most likely at risk of failure. This finding agrees with Rumberger (1993) who found that behavior has a significant influence on academic achievement.

Residence patterns, school size, class size, and type of curriculum were school characteristics examined in this study. All were found to be unrelated to first-year secondary-school success.

It was thought that in developing countries a place where a student stays may play a significant role in achievement. In these countries many high-school students live in dorms where living conditions are much better than anywhere else. The findings of this study show that 78.31% (148 out of 189) of boarding students were promoted
compared to 71.87% (92 out of 128) of non-boarding
students. Although the percentage of boarders promoted
was a bit higher than that of non-boarders, this
percentage was not high enough for a statistical
significance (see Table 33). This means that the living
arrangements of the first-year students did not influence
their academic success. This agrees with Psacharopolos
and Soumelis (reported in Katsillis & Rubinson, 1990) who
do not believe in the effect of students' residence on
academic success. However, boarders are somewhat more
privileged than non-boarders: they enjoy three meals a
day, they have a nice place to sleep, they use a study
hall for personal evening study, they have easy access to
the school library, they are supervised during their
evening study by the dean and assistant deans, and they
may get help from their roommates if necessary.

It seems that non-boarders also have some advantages
that boarders do not have. In dormitories, the study time
is very limited. In most cases, students stop studying at
9:30 p.m. and go to sleep. Non-boarders may continue
studying until they cover what they need to study or are
tired. Furthermore, boundaries between the school and the
community are not rigid. Contact between the two categories of students is frequent. Some non-boarders stay on the school campus and interact with boarders on a continuing basis. This frequent interaction can have a very positive impact on the achievement of some students (Shiman, 1970).

School size has not affected the school success of the first year of secondary school. This study involved three schools: Gitwe College, Rwankeri College, and Mugonero Nursing School. The total population for each school was 649, 426, and 257, respectively. The success was 83.02% (88 out of 106) for the medium school size; 76.67% for small school size, and 70.20% for the large school size. The test of hypothesis did not reveal any significant relationship between school size and first-year secondary-school success.

Obviously, these schools are not large. Although Gitwe College is considered in this study as a large school, it is a medium-size school on the national level. In Rwanda, a large secondary school sometimes enrolls more than 1,000 students. Enrollment at Gitwe is far below this figure. If the size of the school could make a
difference, it is not possible to draw any conclusion
given the fact that the present enrollment qualifies these
schools as medium- and small-size schools.

Furthermore, these schools are governed by the same
board, which recruits the same students, hires the
personnel of almost the same qualifications for all these
three schools, and strives to provide adequate conditions
for academic work for students as well as for teachers.

Seven classes participated in this study: economics A
and B, math-physics, teacher-training programs A and B,
and nursing programs A and B. The percentage of success
per class was as follows: economics A, 83.67%, economics
B, 82.46%; math-physics, 76.09%; teacher-training program
A, 70.37%; teacher-training program B, 64.71%; nursing
program A, 70%; and nursing program B, 83%.

Economics classes and nursing class B have a higher
percentage of students who were promoted, followed by
math-physics, teacher-training program A, nursing program
A, and finally, teacher-training program B. There is no
conclusion to draw from these data. The hypothesis was
not tested given the fact that all three schools have
almost identical class size. In fact, these class samples
were drawn from large classes, composed of 40 to 65 students. Class size usually related to academic achievement is a class size of about 15 students. The class sizes of this sample are far beyond the class size thought to promote school achievement.

Table 35, which considers the program of study, shows that 83.02% of the students from the economics program, 76.67% from the nursing program, 76.09% from math-physics, and 67.62% from teacher-training program were promoted. The economics program has the highest percentage of success followed by nursing and math-physics. The data analysis indicates that the school curriculum did not affect student success.

The secondary school in Rwanda is both diversified and professionalized. On the secondary-school level, several fields of study are available, and each field, besides general education, focuses on a specific area of study. However, the first-year secondary-school curriculum is almost identical for all fields. It focuses mainly on general education. Courses offered included: mathematics, French, sciences, religion, kinyarwanda, geography, history, civics, physical education, arts,
manual work/home economics, first aid (for math-physics),
and music (for teacher-training program).

Even though the students were attending different
programs, they were primarily taking the same courses
with almost identical content during their first year.

Conclusion

Family and school variables involved in this study
did not apparently affect academic achievement of first-
year secondary-school students in Seventh-day Adventist
secondary schools. It looks like student characteristics
such as previous academic success and student behavior are
the ones that had a certain impact on first-year academic
success.

Implications and Recommendations for Practice

The objective of this study was to provide
information for the people involved in the education of
the Rwandese youth. I anticipate that they may use some
of the findings of the present study to improve the
success of first-year secondary-school students in Rwanda,
especially those in Seventh-day Adventist secondary
schools.
To maximize the chance of success for students in their first year in Seventh-day Adventist secondary schools, candidates should be selected based on the following:

1. Grades obtained in the important courses taught in elementary school: mathematics, French, religion, and environmental studies

2. Elementary-school grade-point average or rank in the elementary-school graduating class

3. Entrance examination score

4. General student behavior.

However, one must note that there are not enough places available for elementary-school graduates. A priority for secondary-school authorities should be an increase in the number of places available. Since day school does not affect student success, secondary-school administrators should consider the possibility of having an extensive day-school program. One way to implement this recommendation would be to convert all dormitories and other buildings related to the boarding-school system into classrooms. This would allow the schools considered in this study to increase the number of students admitted.
to secondary education. This would also increase the chances of many elementary-school graduates, who now have to leave school prematurely and join their parents in rural and traditional undesirable life, to be admitted to secondary school and have the opportunity for more education.

**Implications and Recommendations for Further Research**

As Heyneman and Loxley (1983) found, the teacher factor is important in enhancing the achievement of students in developing countries. The material conditions in many of the schools in such countries are still inadequate for effective learning. In Rwanda, for instance, the students (and sometimes the teachers) do not have textbooks, and those available are not appropriate. The teacher has to find different resources that allow him/her to cover the curriculum. Certainly, the way a teacher strives to provide adequate information and uses beneficial methods to transmit information would affect student success. Further research, then, should focus on the role teachers can play in enhancing the achievement of first-year secondary-school students.
According to the findings of this study, repeaters and non-repeaters of elementary-school grades performed the same. A longitudinal study is needed to find out how the repeaters and non-repeaters will perform throughout secondary school.

The traditional Rwandese people do not encourage girls to talk in public. According to Rwandese culture, a wise girl, or woman, does not talk much. In a society where girls are discouraged from talking, especially in public, it would be interesting to learn if Rwandese female students perform better than males in language study, as has been found in other cultures, or if their silence may allow them to perform better in mathematics and science.
February 2, 1993

TO WHOM IT MAY CONCERN

The purpose of this letter is to inform you that Mr. Salomon Maniraguha is a doctoral student in Educational Psychology at Andrews University, Michigan, United States of America. He is currently conducting a doctoral dissertation research in which he is investigating possible relationships between selected student and school factors and academic performance of first year students in Seventh-day Adventist secondary schools in Rwanda. I believe his dissertation research has great potential for assisting at-risk students in our schools in Rwanda. Your assistance to Mr. Maniraguha in completing his data collection and eventual completion of this doctoral program will be much appreciated.

Thank you in advance for your help and kind consideration.

Very sincerely,

Jimmy Kjar, Ph. D.
Associate Professor
Department of Educational & Counseling Psychology
Chair, Dissertation Committee for Mr. Maniraguha
Berrien Springs, le 29/01/1993

Monsieur Mugemana Manassé  
Directeur de l'Education de l' Union du Rwanda  
Kigali, Rwanda

Monsieur le Directeur,

Je voudrais faire une étude concernant les facteurs de réussite ou d'échec des étudiants des premières années des écoles secondaires adventistes de l'Union du Rwanda. Je voudrais donc vous demander de bien vouloir m'autoriser à administrer le questionnaire en annexe aux étudiants des trois écoles secondaires adventistes (Collège de Gitwe, Collège de Rwankeri, et l'Ecole des Sciences Infirmières de Mugonero) et à obtenir les informations relatives à leur passé scolaire ainsi qu'à leur progrès (scolaire) tels que détaillés dans l'appendice B du présent questionnaire.

Etant donné les contraintes qui me sont imposées, votre aimable et prompte réponse sera bien appréciée.

Salomon Maniraguha
Berrien Springs, le 29/1/1993

Monsieur le Directeur du Collège de Gitwe
Monsieur le Directeur du College de Rwankeri
Monsieur le Directeur des Sciences Infirmières de Mugonero

Monsieur le Directeur (tous),

Je suis en train d'étudier les facteurs de réussite ou d'échec des étudiants de première année des écoles secondaires adventistes au Rwanda. Comme votre école figure parmi ces écoles visées, je voudrais vous demander de bien vouloir m'autoriser à passer le questionnaire en annexe aux étudiants de votre école.

Je voudrais également vous demander de bien vouloir m'accorder un bref interview ainsi que l'obtention des données se trouvant dans les dossiers des élèves qui l'auraient consenti.

Comme il est souligné dans ce questionnaire, l'anonymat et la confidentialité seront strictement respectées.

Merci pour votre coopération.

Salomon Maniraguha
Berrien Springs, le 30/2/1993

Monsieur le Directeur de l'Education
de l'Union du Rwanda
Kigali

Monsieur le Directeur,

Comme vous le savez déjà, je suis en train de faire une étude concernant les facteurs de réussite ou d'échec des étudiants de première année des écoles secondaires adventistes. Les étudiants m'ont autorisé d'obtenir de votre bureau certaines données relatives à leur scolarité antérieure. Les données souhaitées sont inclues dans ce questionnaire

Vos réponses à ce questionnaire contribueront d'une manière significative à la réussite de cette étude.

Sincères remerciements.

Salomon Maniraguha
Messieurs les Directeurs des Ecoles Secondaires Adventistes au Rwanda

Objet: Recommandation en faveur de M. MANIRAGUHA Salomon.

Cher Frère,

Par la présente, je tiens à vous présenter et à vous recommander M. MANIRAGUHA Salomon, ancien Directeur du Collège de Rwankeri, de celui de Gitwe et ancien Directeur du Service aux Etudiants de l'UAAC. Il poursuit actuellement ses études de doctorat en Sciences de l'Education aux États-Unis d'Amérique.

C'est dans le cadre de sa thèse de doctorat qu'il a dû revenir des États-Unis et qu'il a bien voulu mener au sein de nos écoles secondaires une enquête sur les causes des échecs des élèves des premières années.

A cet égard, je vous prie de bien vouloir lui faciliter la tâche en le mettant en relation avec les individus que son travail vise et en lui transmettant toute information susceptible de l'aider ou par lui souhaitée.

Je vous assure vous aurez rendu un service appréciable, non seulement à M. MANIRAGUHA, mais aussi et surtout à notre œuvre éducative dans son ensemble. En effet, à l'issue de ce travail si important, il nous sera possible de mieux appréhender les handicaps de notre système éducatif et les solutions à y apporter.

Croyez, cher Frère, à l'expression de mes sentiments chrétiens les meilleurs.

Le Directeur d'Education de l'Union

MUGENI Manasse

V.C.I.: MANIRAGUHA Salomon.
Samuel Mutabazi  
C/O Rwanda Union Mission  
Kigali, Rwanda  

Cher Mutabazi,

Comme convenu, je vous envoie mon entière adresse afin que vous puissiez m’envoyer les informations souhaitées par le canal à la fois le plus accessible pour vous et le plus rapide possible étant donné le besoin de l’urgence.

Les données désirées sont: (1) élèves inscrits en dernière année de l'école primaire à partir de l'année scolaire 1975/1976 jusqu'en 1992/1993 ou les élèves qui ont participé à l'examen national pour les années scolaires précédées, (2) les élèves qui ont été admis en 1ère année du secondaire au cours des mêmes années, et (3) références bibliographiques indiquant (a) l'auteur du document, (b) le titre du document, si c'est un article, indiquez l'intitulé de l'article, nombre de pages et le nom du document dans lequel se trouve cet article, (c) année de publication, (d) ville et maison d'édition s'il y en a.

Encore une fois le moyen le plus urgent nous arrangerait énormément.

Mes affectueuses salutations.

Salomon Maniraguha
APPENDIX B

STUDENT SURVEY: ENGLISH AND FRENCH VERSIONS
February 3, 1993

Dear Student,

The purpose of this study is to examine factors that may be related to success or failure of Seventh-Day Adventist Secondary School Freshmen in Rwanda.

You are in a position to help me conduct this research. I sincerely seek your assistance in completing this survey. As much as possible, answer all the questions in this survey. You can be sure that your responses will be treated with the strictest of confidence.

Thank you so much for your help in this study.

Sincerely,

Salomon Maniraguha
Consent Form

February 3, 1993

Dear Student,

In this study I will need some data from schools attended and from Rwanda Union Education Department.

These data are:
- Elementary school GPA
- Elementary school grades in math, French, religion, and studies of environment
- Grades obtained in union entrance examination
- GPA of first quarter in secondary school
- Cumulative GPA
- Deliberation report

I would like to request you authorization to get these data from where they can be found. I would like to mention again that all information will be confidential, and anonymous.

If you agree check 1, if you disagree check 0

1....
0....
Questionnaire

Direction: Read each statement carefully and then respond to each item completely.

Part I

Student Number:_____________

1. Sex: (a) Female   (b) Male
2. Name of your Commune._____________
3. Name of your Prefecture._____________
4. Name of your Association._____________
5. Highest elementary grade completed: (1) 6th (2) 7th. ______________
6. Name of elementary school attended._____________
7. Grade point average of grade 6th or 7th________
8. Did you take Union Entrance Examination? (1) Yes (2) No
9. Field of study of your choice:
   a. Economics
   b. Math-physics
   c. Nursing school
   d. Teacher Training program
10. Field of study given:
    a. economics
    b. Math-physics
    c. nursing school
    d. teacher training program
11. Your religion:
    a. Seventh-day Adventist
    b. Roman Catholic
    c. Muslim
    d. Protestant (specify) ______________
12. Number of brothers you have._____________
13. Number of sisters you have._____________
14. Where do you live during the school year?
    a. In the school dormitory.
    b. With my parents.
    c. With relatives.
    d. With friends.
    e. Others (specify) ______________
15. If you are day student indicate how many meals do you take per day:
    a. 1
    b. 2
    c. 3
16. If you are day student who prepares your meals?
   a. parents
   b. other family members
   c. myself

17. Highest level of father's education.
   a. Did not go to school.
   b. Attend elementary school.
   c. Completed elementary school.
   d. Some secondary school.
   e. Completed secondary school.
   f. Some college.
   g. Has a first degree.
   h. Has a second degree.
   i. Has a third degree

   a. Did not go to school.
   b. Attend elementary school.
   c. Completed elementary school.
   d. Some secondary school.
   e. Completed secondary school.
   f. Some college.
   g. Has a first degree.
   h. Has a second degree.
   i. Has a third degree

19. What is your father's occupation?
   a. agriculture (e.g. breeding, farming, etc)
   b. business (e.g. retailer, agronomy, bankers, etc)
   c. education (e.g. teacher, professor, education officer, etc.)
   d. medical (nurse, medical doctor, lab technician, etc.)
   e. skill workers (e.g carpenters, masonry, plumbers, etc.)
   f. others (specify)________________________

20. Who pays most of your school fees?
   a. parents
   b. brothers/sisters
   c. friends
   d. I work my way through school.

21. what portion of the school fees are you able to pay on registration day?
   a. total amount
   b. 3/4
   c. 1/2
   d. less than 1/2
22. How many times have you been sent home because of unpaid school fees?
   a. once
   b. twice
   c. more than twice
23. Have you paid all your school fees this quarter?
   a. yes
   b. no
24. Have you ever delayed returning to school because of financial problems?
   a. yes
   b. no
25. For how many days?
   a. 1 or 2
   b. 3 to 5
   c. more than 5
26. Approximately, how many hours do you work a week?
   a. 0-5 hours.
   b. 6-10 hours.
   c. 11-15 hours.
   d. 16-20 hours.
   e. More than 20 hours (specify) ________ hours.
27. Where do you do your study in the evening?
   a. I never study in the evening
   a. At school
   b. In the house where I live
28. After school, how much time do you spend per day on school work?
   a. One hour
   b. Two hours
   c. Three hours
   d. Four or more
29. Do you feel you have enough time to complete your school assignments?
   a. yes
   b. no
30. How well do you understand the language used in teaching or in testing?
   a. Not at all
   b. not too well
   c. quite well
   d. well enough
   e. very well
31. How well do you understand the language used in your text books?
   a. Not at all
b. Not too well.
c. Quite well.
d. Well enough.
e. Very well.

32. Did you repeat some elementary school grades?
   1. Yes
   2. No

33. If yes how many times?
   1. zero time
   2. 1 time
   3. 2 times
   4. More than 2 times
Part II

Attitude Toward School

Below you will find nine pairs of adjectives that may describe what you feel about your school. Suppose, for example, you were given the pair "Nice and awful." If you believe you school is nice, then you might respond in the following way:


If, on the other hand, you believe your school is awful then, you might respond in the following way:

Nice_ _ _ _ _ _ _ _ : _ _ X_ Awful

If you believe your school is somewhat nice and somewhat awful, then you might respond in the following way:

Nice_ _ _ _ _ _ _ _ _ _ : _ X_ _ _ _ _ _ _ Awful

MY School

Clean_ _ _ _ _ _ _ _ _ _ _ _ : _ _ _ _ _ _ _ _ _ _ dirty
Pair_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ : _ _ _ _ _ _ _ _ _ _ unfair
Pleasant_ _ _ _ _ _ _ _ _ _ _ : _ _ _ _ Unpleasant
Interesting_ _ _ _ _ _ _ _ _ _ _ _ _ _ Boring
Good_ _ _ _ _ _ _ _ _ _ _ _ _ _ Bad
Strict_ _ _ _ _ _ _ _ _ _ _ _ _ _ Lenient
Active_ _ _ _ _ _ _ _ _ _ _ _ _ _ Passive
Difficult_ _ _ _ _ _ _ _ _ _ _ _ _ _ Easy
Valuable_ _ _ _ _ _ _ _ _ _ _ _ _ _ Worthless
Part III
Attitude Toward Teachers

Rate your teachers on each of the following statements. If you strongly disagree with the statement, circle (1). If you somewhat disagree with the statement, circle (2). If you are not certain, circle (3). If you somewhat agree with the statement, circle (4). If you strongly agree with the statement, then circle (5).

In general, my teachers

1. know their subject matter. 1 2 3 4 5
2. explain the lessons clearly. 1 2 3 4 5
3. explain clearly how my performance is to be evaluated. 1 2 3 4 5
4. provide regular feedback of assignments. 1 2 3 4 5
5. use entire class period efficiently. 1 2 3 4 5
6. give too much homework. 1 2 3 4 5
7. use a variety of teaching technique. 1 2 3 4 5
8. expect high standards for class work. 1 2 3 4 5
9. relate to students in ways that promote mutual respect. 1 2 3 4 5
10. maintain an atmosphere that encourages learning. 1 2 3 4 5
11. are fair to students. 1 2 3 4 5
12. are motivated to work in this school. 1 2 3 4 5
Translation of Student Survey

Le 3/2/1993

Cher étudiant,
Chère étudiante,

L'objectif de cette étude est d'examiner quelques facteurs qui contribuent à la réussite ou à l'échec des étudiants de première année des Ecoles Secondaires Adventistes du Rwanda.

Tous les étudiants de première année sont priés de participer à cette étude. Cependant, la participation n'est pas obligatoire. Si vous aimeriez donner des renseignements souhaités, vous êtes autorisé à ne pas répondre à l'une ou l'autre question pour laquelle vous ne vous sentez pas comfortable.

En répondant à ce questionnaire vous contribuez grandement à la réussite de cette recherche. Votre aide est totalement sollicitée. Soyez assuré que toute information donnée sera tout à fait confidentielle et anonyme.

Merçi beaucoup pour votre aimable contribution à la réalisation de cette étude.

Salomon Maniraguha
Lettre d'Autorisation

Le 3/2/1993

Cher, étudiant
Chère étudiante

J'aurai besoin dans cette étude de quelques informations provenant des écoles fréquentées et du département de l'éducation de l'Union du Rwanda.

Ces informations sont les suivantes:
- Moyenne générale annuelle de l'école primaire,
- Moyenne annuelle des branches suivantes: math., français, religion et étude du milieu
- Notes obtenues dans l'examen de l'Union,
- Moyenne du premier trimestre en première année secondaire,
- Moyenne générale annuelle,
- Rapport de délibération.

Je vous demanderais de bien vouloir m'autoriser à demander ces informations aux instances qui les détiennent. Je voudrais encore une fois vous rassurer que toutes les informations collectées au cours de cette enquête seront totalement anonymes et confidentielles.

Si vous m'autorisez marquez 1, en cas de refus marquez 0.

1.....
0.....
Questionnaire

Instructions: Lisez bien chaque question et répondez complètement à chaque question.

Partie I

Code de l'étudiant...........

1. Sexe: (1) Féminin (2) Masculin
2. Nom de votre Commune...........
3. Nom de votre Préfecture...........
4. Nom de votre Association ...........
5. Dernière année faite: (1) 6è (2) 7è
6. Ecole primaire fréquentée ...........
7. Moyenne annuelle obtenue en 6è ou 7è .......
8. Avez-vous fait l'examen de l'union? (1) oui (2) non
9. Quelle était la section que vous aviez choisie lors de l'examen de l'Union?
   a. Economique
   b. Math-physique
   c. Sciences infirmières
   d. Normale primaire
10. Section accordée
    a. Economique
    b. Math-physique
    c. Sciences infirmières
    d. Normale primaire
11. Votre religion:
    a. adventiste
    b. catholique
    c. musulman
    d. protestant (spécifier) .........................
12. Combien de frères avez-vous?
    a. les plus âgés que vous ........
    b. les plus jeunes que vous .......
13. Combien de soeurs avez-vous?
    a. les plus âgées que vous ........
    b. les plus jeunes que vous.......  
14. Où est -ce que vous logez pendant l'année scolaire?
    a. Au dortoir
    b. Avec les parents
    c. Avec les membres de la famille
    d. Avec les amis
    e. Avec d'autres personnes (Spécifiez .........)
15. Si vous êtes externe indiquez le nombre de repas par jour.
   a. 1
   b. 2
   c. 3

16. Si vous êtes externe, qui prépare la nourriture pour vous?
   a. Mes parents
   b. Autres membres de la famille
   c. Moi-même

17. Indiquez le niveau d'éducation de votre père:
   1. Il n'a pas été à l'école
   2. Il a été à l'école mais il n'a pas fini l'école primaire
   c. Il a fini l'école primaire
   d. Il a été à l'école secondaire mais il n'a pas fini l'école secondaire
   e. Il a fini l'école secondaire
   f. Il a été à l'université mais il n'a pas pu obtenir le diplôme universitaire
   g. Il est bachelier
   h. Il est licencié
   i. Il est docteur

18. Quel est le niveau d'éducation de votre mère?
   a. Elle n'a pas été à l'école
   b. Elle a été à l'école mais elle n'a pas fini l'école primaire
   c. Elle a fini l'école primaire
   d. Elle a été à l'école secondaire mais elle n'a pas fini l'école secondaire
   e. Elle a fini l'école secondaire
   f. Elle a été à l'université mais elle n'a pas pu obtenir le diplôme universitaire
   g. Elle est bachelière
   h. Elle est licenciée
   i. Elle a un doctorat

19. Quelle est l'occupation de votre père?
   a. Agriculture/élevage
   b. Business (ex. agronome, banquier, commerçant)
   c. Enseignement (enseignant, inspecteur, professeur, directeur, etc)
   d. Carrière médicale (infirmier, assistant médical, docteur, technicien de laboratoire)
   e. Ouvrier qualifié (menuisier, maçon, plombier, maçonnerie, etc)
   f. Autre (spécifiez)..........................

20. Qui paye vos frais scolaires?
21. Quel est le montant total que vous payez pendant l'inscription?
   a. Je paie tous les frais scolaires exigés
   b. Je paie les 3/4
   c. Je paie 1/2
   d. Je paie moins que la moitié

22. Combien de fois avez-vous été renvoyé à la maison pour chercher les frais scolaires non encore payés?
   a. Une fois
   b. Deux fois
   c. Plus de deux fois

23. Avez-vous payé tous les frais scolaires de ce trimestre?
   a. Oui  b. Non

24. Auriez-vous commencé un trimestre un peu tard à cause des problèmes financiers?
   a. Oui  b. Non

25. Si oui pour combien de jours?
   a. 1 ou 2
   b. 3 à 5
   c. plus de 5

26. Si vous travaillez, indiquez le nombre d'heures approximatif par semaine.
   a. 0-5
   b. 6-10
   c. 11-15
   d. 16-20
   e. Plus de 20 heures (spécifiez) .....heures

27. Où étudiez-vous pendant les études du soir?
   a. je n'étudie pas le soir
   b. À l'école
   c. À la maison dans laquelle nous logeons

28. Combien de temps consacrez-vous chaque jour à l'étude personnelle?
   a. Une heure
   b. Deux heures
   c. Trois heures
   d. Quatre ou plus

29. Avez-vous assez de temps pour faire tous vos devoirs?
   a. Oui  b. Non

30. Comprenez-vous le langage utilisé par vos professeurs dans la présentation de la
matière ou dans les questions d'examens?
   a. Pas du tout
   b. Je comprends un peu
   c. Je comprends assez
   d. Je comprends bien
   e. Je comprends très bien
31. Comprennez-vous le langage utilisé dans vos manuels scolaires?
   a. Pas du tout
   b. Je comprends un peu
   c. Je comprends assez
   d. Je comprends bien
   e. Je comprends très bien
32. Avez-vous doublé pendant l'école primaire?
   a. Oui
   b. Non
33. Si oui, combien de fois?
   a. Zéro fois
   b. 1 fois
   c. 2 fois
   d. plus de 2 fois
Partie II

Attitude envers l'Ecole

Vous trouverez ci-dessus neuf pairs d'adjectifs qui peuvent décrire ce que vous pensez concernant votre école. À supposer par exemple que l'on vous donne les qualificatifs "joli et terrible". Si vous croyez que votre école est très jolie vous répondrez comme suit:

Jolie X-- -- -- -- --- --- --- Terrible
Si par contre vous croyez que votre école est terrible, dans ce cas vous pourriez répondre comme suit:

Jolie -- -- -- -- -- -X- Terrible
Si vous croyez que votre école est passable, vous répondez alors comme suit:

Jolie -- -- -- -X- -- -- -- Terrible

MON ECOLE

Propre -- -- -- -- -- -- Sale
Impartiale -- -- -- -- -- -- Partiale
Agréable -- -- -- -- -- -- Dégoûtante

Intéressante -- -- -- -- -- -- Gênante
Bonne -- -- -- -- -- -- Mauvaise
Stricte -- -- -- -- -- -- Indulguente
Active -- -- -- -- -- -- Passive
Difficile -- -- -- -- -- -- Facile
Valable -- -- -- -- -- -- Indigne
Evaluez vos professeurs en donnant une réponse appropriée à chacune de ces déclarations. Si vous n'êtes tout à fait d'accord avec la déclaration, encerclez (1), si vous n'êtes d'accord avec la déclaration, encerclez (2). Si vous n'êtes pas certain, encerclez (3). Si vous êtes d'accord avec la déclaration, encerclez (4). Si êtes tout à fait d'accord avec la déclaration, encerclez (5).

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<tr>
<th>En général mes professeurs</th>
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<td>1. connaissent leurs matières</td>
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<td>2. expliquent les leçons clairement</td>
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<td>3. expliquent clairement leur évaluation</td>
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<td>4. expliquent les devoirs mal faits</td>
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<td>5. utilisent bien la période de la leçon</td>
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<td>6. donnent beaucoup de devoirs</td>
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<td>7. utilisent une variété de méthodes</td>
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<td>8. pensent que la classe peut mieux faire</td>
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<td>9. favorisent le respect mutuel</td>
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<td>10. maintiennent un climat d'apprentissage</td>
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<td>11. sont justes envers les élèves</td>
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<td>12. sont bien motivés d'enseigner</td>
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Student Number:_________

Part I

Demographic Information

1. Sex: (a) Male   (b) Female
2. Residence: (a) Day student   (b) Boarding Student
3. Religion: (a) SDA (b) Catholic (c) Muslim  (d) Protestant (specify)
4. Entrance Examination? (a) Yes   (b) No

Part II

Academic Information

1. Elementary School (end of 6th or 7th grade)
   GPA
   French grade
   Religion grade
   Mathematics grade
   Environmental Studies grade
   Repeat any grade(s) in elementary school? If yes, how many times?
   Entrance Examination score

2. First year of secondary school
   a. GPA: 1st Quarter
   b. Cumulative GPA
   c. Subject grade: French, mathematics, religion and science
   d. number of days absent
   e. number of days late
   f. class size
   g. number of students in the school (school size)
REFERENCE LIST


VITA

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Salomon S. Maniraguha

Education

1967 Teacher Training Diploma, College de Gitwe, Rwanda

1972 Secondary-School Diploma, Humanités Générales, College de Gitwe, Rwanda

1976 B.A. Education, Institut Pédagogique National, Butare, Rwanda

1982 M.A. Education with Certification (agrégation) for Secondary-School teaching, Institut Pédagogique National, Butare, Rwanda

1997 Ph.D. Candidate Andrews University, Berrien Springs, Michigan Area of Concentration: Educational Psychology, Cognate Area: Educational administration

Professional Experience


1973: Elementary School Principal, Rwankeri Mission, Ruhengeri, Rwanda

1976-1977: Business Manager (Gérant et directeur de l'internat) & Teacher, Groupe Scolaire de Butare, Section Agri-Véto Teacher, Save Teacher Training School (Boys), Butare, Rwanda

1977-1979: Teacher, Gitwe College, Gitarama, Rwanda

1981-1983: Vice-principal, Gitwe College, Gitarama, Rwanda

1984-1988: Principal, Rwankeri College, Ruhengeri, Rwanda

1988-1989: Dean of student affairs, Adventist University of Central Africa, Mudende, Gisenyi, Rwanda

1989-1990: Principal, Gitwe College, Gitarama, Rwanda

Professional Organizations

Member, Phi Delta Kappa