

A STUDY OF THE EFFECTS OF GRADUATION STANDARDS ON THE
ENROLLMENT PATTERNS AT COON RAPIDS HIGH SCHOOL

by

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ABSTRACT

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A Study Of The Effects Of Graduation Standards On The Enrollment Patterns At Coon
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One of the latest trends in education is National Standards. Although national standards are still being implemented and developed, many states use their own graduations standards. In Minnesota, when graduation standards were first introduced, they had not been widely tested. Once the standards were implemented, some problems that had not been considered started appearing. Students have found that the classes that they need or want are full and will have to wait a year. Educators have found that students may pass the classes, but fail standards, or vice versa. This meant that the students must repeat the courses or find some other means of meeting the standard in order to graduate. Often, when a student needs to repeat a course, it replaces an elective or filler class in the students course schedule.

The purpose of this study was to determine if graduation standards has effected the enrollment in elective courses . Educators are concerned about graduation standards

for several reasons. First, students who typically struggle academically, often succeed in technology classes or other elective courses due to alternative learning styles. Second, not every student will choose the same path after high school. Some will attend 4 year colleges or universities. While others may seek technical training from a trade school or on the job. Students need to be able to take classes which allow them to explore different career paths.

The numbers used to determine enrollment in the elective classes were received from the guidance department at Coon Rapids High School. In 1995-96, 1996-97, and 1997-98 school years, graduation standards were not in place. In 1999-2000 graduation standards were used for students in 9th and 10th grade. Records from the 1995-98 school years were compared to the records for the 1999-2000 school year. The records from the Guidance Department document the number of students enrolled in the school, various departments, and each class by grade. An average ratio for the 1995-98 school years, (no graduation standards) was used to show deviation from the normal enrollment. The records were compared using averages to account for total enrollment changes in the school. By comparing the years of no graduation standards with the 1999-2000 school year together, the enrollment pattern was documented.

Objectives

The study sought answers to the following questions:

1. Did the enrollment change significantly in all elective areas with the implementation of graduation standards?
2. Has the enrollment in each elective department significantly changed with graduation standards?
3. Were certain classes dropped in the elective departments due to graduation standards?
4. Were new courses implemented to meet graduation standards in elective departments?

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Chapter 1

Introduction:

In education a call for standards based reform has swept the country. Graduation standards are aimed at standardizing the outcome that every student achieves throughout their high school experience. The curricular areas that are most often addressed are sciences, mathematics, reading, writing, social studies, and languages.

Since many states are creating and implementing their own graduation standards (e.g. Florida, New York, and California), with no national standards governing each state, standards vary from state to state. An area with a wide range of variations in the standards is special education (Thurlow, 1997). Although national graduation standards have not been set, they were a national goal of President Clinton (Anderson, 1999).

According to Hardy (1998), “Minnesota has been developing basic and advanced graduation standards in different subjects” (p. 26). Many of these graduation standards for each area of instruction have been written by educators in the specific area. During the 1997-98 school year, Minnesota emphasized the implementation of graduation standards. The implementation of graduation standards may have implications for educators who are concerned about the amount of change that will be necessary in their classroom. Some instructors may see very little change, while others will have to completely revamp their curriculum.

As part of the graduation standards being implemented in Minnesota, the gaps in education caused by student diversity will be minimized through a bill called the “Educational Diversity Rule.” The gaps in the achievement of education stem from

differences such as race, ethnic background, and gender (Bradley, 1997). The bill has been designed to create unbiased state tests. In the past, tests that have been given at the state level have been found to be biased against minorities.

Throughout the state of Minnesota, graduation standards have their opponents. Former Governor Carlson failed to commit to key parts of graduation standards in the past, which in turn caused the resignation of the Director of Minnesota Graduation Standards in 1995 (Lindsey, 1995). Educators are reluctant to convert curriculum to implement the standards because of the changes which need to be made. This problem has caught the attention of educators who question the effectiveness of the standards.

While data has been compiled showing how the overall level of academic achievement can improve with graduation standards, graduation standards have been implemented with little or no data on how they will effect the students making career choices for future training (Oklahoma, 1998). Educators are looking for answers to how graduation standards will affect their students. Elective classes are designed for students who are interested in a related career, exploring career opportunities, and developing skills for life on their own. Technology Education aims to provide students with the ability to understand, assess, select, and use technology (ITEA, 2000). Other electives seek to provide students with the same or similar opportunities as Technology Education.

Graduation Standards have been implemented in Minnesota and will effect the class of 2002 and beyond. At Coon Rapids High School, the number of students who plan on attending a 4 year college is in the minority at 35%. The majority, 65% of students, continue their education with technical training through technical colleges, community colleges, military, and on-the-job training. These students have used elective

classes to explore different careers to help them make their choice about training and careers after high school. However, the graduation standards are designed to force students to carry a course load similar to a student who is planning on attending a 4 year college (Draper, 2000). For students that plan on training other than a 4 year college, college prep classes may not fit their plan for education.

Currently, a study is being done at the high school level in Anoka-Hennepin School District #11 to find exact percentages of students who fail to meet graduation standards. The at-risk students are at a higher risk of failing graduation standards. If a student fails a course or standard that is required for graduation, the class must be repeated, thus reducing the number of possible electives these students may take.

When graduation standards were first introduced, they had not been widely tested. Once the standards were implemented, some problems that had not been considered started appearing. Students found that the classes they need or want are full and will have to wait a year. Educators found that students may pass the class, but fail the standard, or vice versa. This means that the student must repeat the course or find some other means of meeting the standard in order to graduate. Changes on how schools implement the standards have been made to correct these problems. Education is constantly changing, seeking improvement. As education improves, the standards must constantly change to meet the needs of students.

Technology educators often have non-college bound students in class. Students take technical classes for career exploration, career training, and to better prepare themselves for life on their own. Educators in elective areas are concerned that enrollment will be affected through academic classes being failed, and the number of

possible electives reduced by trying to meet standards which require multiple classes to meet one standard. For example, the technical reading standard can be earned at Coon Rapids High School in Small Gas Engines II, but Small Gas Engines I is a prerequisite. There is another concern with prerequisites. What if a student finds that the prerequisite is not to their liking or aptitude and does not want to continue with the field chosen. For example if a student needs a math standard, which is available in Metals II, Metals I must be taken first. However, if the students finds that Metals I is not to their liking or aptitude, they must still continue on into Metals II to receive the standard or “waste a class” as far as graduation standards are concerned. This reduces the freedom students have to explore elective courses.

Research has shown that since the implementation of graduation standards, students achievements and academic skills have improved by requiring the completion of more academic courses.(Oklahoma, 1998). Furthermore, research shows that school to work and technology education classes attract at-risk students (Crawford, 1996). Furthermore, with students required to pass academic standards, it is unclear what effect standards would have on the enrollment.

Problem Statement:

This study will compare enrollment trends of elective courses at Coon Rapids High School before and after the implementation of graduation standards.

Purpose:

The purpose of this study is to determine if graduation standards has effected the enrollment in elective courses . Educators are concerned about graduation standards for several reasons. First, students who typically struggle academically, often succeed in technology classes or other elective courses due to alternative learning styles. Students who fail academic courses are required to retake the academic class, thus reducing the number of electives they can take. A second reason is that not every student will choose the same path after high school. Some will attend 4 year colleges or universities, while others may seek technical training from a trade school or on the job. Educators question whether graduation standards are forcing students to take classes designed for college bound students, while they may be seeking a trade school or on-the-job training.

Objectives

The study will seek answers to the following questions:

1. Did the enrollment change significantly in all elective areas with the implementation of graduation standards?
2. Has the enrollment in each elective department significantly changed with graduation standards?

3. Were certain classes dropped in elective departments due to graduation standards?
4. Were new courses implemented to meet graduation standards in elective departments?

Hypotheses:

The null hypotheses relate to the above objectives:

1. There is no significant difference in the enrollment in all elective areas with the implementation of graduation standards.
2. There is no significant difference in the enrollment in each elective departments with graduation standards.
3. There were no courses lost within the elective departments with the implementation of graduation standards.
4. There were no new courses with the implementation of graduation standards.

Importance:

This study will allow school educators to see changes in enrollment trends due to graduation standards. Although the information from the study may be applied to the entire district, due to the size of the district the study was limited to one high school in the Anoka-Hennepin school district. With each of the four high schools in the district following the same curriculum guidelines, the information from the study will apply easily to each school.

Results of this study will allow elective instructors and school officials to better predict enrollment in future classes. On November 2, 1999, a referendum was passed to build a new high school, two new elementary schools, and new additions to several other schools in the district. With a fifth high school in the planning stages, the elective departments will have actual data to show when lobbying for space and equipment for the new school. The study will also provide information to others concerned with education about how graduation standards have changed education in relation to students.

Limitations of the study:

1. It cannot be proven that graduations standards are solely responsible for the effects observed in this study.
2. The results of the study are not generalizable to other districts and schools.
3. Records from the 1998-99 school year were not used in the study since only the 9th grade students were using graduation standards.

Definition of terms:

Graduation Standards - A rule set up to measure or a model to follow for student achievement prior to graduating.

Standards of Distinction- Top Graduation Standards designed for the states most highly motivated students.

Chapter 2

In education, studies have been done on many different topics related to graduation standards. Some topics discussed in this study include: National Goals for Education, Graduation Standards in Minnesota, Impact of Graduation Standards, and the Role of Electives. These topics all lend valuable information and importance to this study.

National Goals For Education:

Studies have shown that graduation standards have raised levels of achievement, ensured mastery of reading, writing, and mathematics, and improved schools. California implemented standards to increase levels of achievement in math and English (Manzo, 1996). New York implemented standards to improve the performance of its schools as well as its students (Lindsey, 1995). Florida used graduation standards to ensure students were mastering reading, writing, and mathematics (White, 1997). Many other states such as Oklahoma and Georgia are looking at such standards but have not implemented nor committed to any plan of action. Overall, graduation standards have accomplished the purpose for the problem they were implemented to improve.

Since many states are creating and implementing their own graduation standards with no national standards governing each state, standards vary from state to state. During his term, President Clinton attempted to improve education by encouraging educators and legislators across the nation to develop standards. One organization that developed standards is ITEA (International Technology Educators Association). ITEA

developed standards for Technology Education now, rather than having someone outside the field develop the standards later (Ullrich, 2000). The project of developing standards was called “Technology For All Americans”. Technology for all Americans is a set of goals for Educators to ensure that every American can have the ability to understand, assess, select, and use technology (2000). The set of developed standards became known as the Standards for Technological Literacy (ITEA, 2000). Although national standards have been developed by ITEA, they have not been implemented in every state.

Graduation Standards In Minnesota:

One of the purposes of education is to prepare students to lead a successful life on their own. Because of this responsibility, the field of education is constantly trying to improve the instruction that students receive. Two examples of educational initiatives are Outcome Based Education and Modular Scheduling. Outcome Based Education (O.B.E) was a practice in education which first identified the desired outcome, then used this to determine the appropriate means and path used to teach students. O.B.E. promised “success for all students through specific definition of expectations, assessment of student progress, and reteaching of outcomes not achieved” (Nelson, 1998, p. 680). During the late 1980’s and early 1990’s O.B.E. became the answer to legislative bureaucracy requiring more student accountability (Nelson, 1998). Since then, O.B.E. has been improved by the implementation of graduation standards.

In Modular Scheduling, courses are blocked by similar content, as well as sorted by required and/or elective courses together. A recent variation of Modular Scheduling is Block Scheduling. Block Scheduling has provided high school students opportunities to

take more classes. This is accomplished by changing the number of periods per day from six or seven to four periods and the length of a class from 18 weeks to 9 weeks. Instead of having a maximum of 12 semester classes per year, students now may take up to 16 classes. This allows students more opportunities to take classes with greater amounts of time on task.

Both Outcome Based Education and Modular Scheduling have benefited students and schools. O.B.E. has given teachers ways to hold students accountable for learning by knowing the end result. Block Scheduling has allowed students to gain more opportunities with greater time on task. While both O.B.E. and Block Scheduling have benefited education, neither were perfect solutions for the problems in education.

In 1993 Minnesota, Legislatures enacted a bill which required the formerly known State Department of Education to develop a results oriented “graduation rule” (Nelson, 1998). After several years of reform in the legislation, the Profiles of Learning was created. The Profiles of Learning are the key elements of the graduation standards.

Graduation standards in Minnesota are based on 10 Elements of the Profiles of Learning that the state has found of value to students. The elements were designed to allow each student to be successful in any direction they choose after high school. The 10 elements are: (1) Read, Listen, View; (2) Write and Speak; (3) Literature and the Arts; (4) Mathematical Applications; (5) Inquiry; (6) Scientific Applications; (7) People and Cultures; (8) Decision Making; (9) Managing Resources; and (10) World Languages (Anoka-Hennepin School District, 1998). These 10 elements are then subdivided into 48 different content areas. The state has determined that 24 of the 48 content areas must be met for the student to graduate.

The graduation standards are met by completing a packet which has been approved by the school district in accordance with state guidelines for each standard. The packet contains tasks which each student must complete. The tasks are physical projects which follow given requirements, allowing all students to demonstrate their level of learning. Often these packets contain multiple tasks.

The purpose of graduation standards is to shift learning from teachers, books, and drills toward experiments, teamwork, and independent projects (Draper, 2000, p. B6). “The Profile of Learning often emphasizes getting students out of the classroom to do activities which force students to think for themselves and have practical applications for life after school” (Draper, 2000, p. B6). The activities are done to complete each task of the graduation standards.

Many of the tasks take huge amounts of time for students to complete. One of the things that results from graduation standards being implemented in classes is the time commitment. The time commitment comes from the different projects that must be completed in order to reach the standard for graduation.

An article in the Minneapolis Star Tribune written by Norman Draper (1998), talks about Standards of Distinction, a program enabling ambitious students to set higher goals. Standards of Distinction are designed for the student who wants to go beyond the minimum requirements. According to Draper (1998), the project that is required for this standard may take students more than an entire year to complete due to its complexity. These standards are designed to be completed on the students’ own time; therefore, they are optional.

Grading students on how well they have completed the standards is a difficult task. Not only is it difficult, but it can also present a legal problem. According to “Legal Defensibility of Standards: Issues and Policy Perspectives,” to hold students accountable, the standard’s project must be physical (Philips, 1997). A physical project can be passed onto others to see if it meets a given criteria. A behavior change is difficult to measure as well as hold to a criteria that can be agreed upon.

As graduation standards are being implemented into schools, schools are scrambling to change, implement, and create classes that will allow students to meet the standards by graduation. According to Draper (2000), many schools are creating classes to fill voids created by the standards (p. B6). Some of the standards don’t have a home in a course, so schools are creating a home.

During registration, classes which contain a graduation standard often fill very quickly, especially if the class is the only one that meets a particular standard. In some cases, students are unable to get into the classes that meet the standards because they fill up so quickly. This means that the students must take the course the following year to meet the standard. This in turn creates problems for the following year(s).

There are three methods that have been used to implement graduation standards into classes. The first method is the tasks in the packet is the entire class. The second is the tasks are added to the existing curriculum. The third method, the tasks are based on what students already do in the class.

Classes which have the graduation standard as the foundation of the curriculum are rare. Typically the tasks for the standard have been added to the curriculum such as in many math classes. Elective classes like Metals, Drawing, and Marketing, are

primarily hands on classes where projects are produced. These classes are good examples of the standard's tasks written to match what was being already done in the class. In most of these cases the only change that may occur is the documentation that the standard has been completed. Classes where the standard's tasks are on what the class already does can also be found in many elective departments. Many of the science and technology classes have standards that are done this way. An example at Coon Rapids High School is the Small Gas Engines II class which requires students to disassemble and reassemble an engine under the Technical Reading Standard.

When a task is added to a class to better address some of the curriculum, some curriculum may need to be replaced to allow time for the standard. Teachers must decide what is important. Many teachers would like to throw out the standard, but can't due to state law. Others are calling for changes to the standards (Draper, 2000).

Impacts of Graduation Standards:

As graduation standards are being implemented into existing courses, material is discarded to make way for the new curriculum. Teachers are finding that not everything that needs to be taught can be taught in the given amount of time for the class. Terry French, a math teacher at Coon Rapids High School, wrote a letter to Christine Jax, Education Commissioner for the State of Minnesota, concerned with how graduation standards are affecting students. One of Terry's concerns was the tasks requiring time which reduced time for learning algebra (French, 2000). Teachers are having a tough time determining the most important issues to be taught when they are forced to teach certain things that in their mind are not the most important.

Graduation standards are currently under fire from legislators and educators calling for changes due to problems with the standards. Many students are in danger of not graduating because they are failing the standards. Students are the ones affected by the problems that are not yet resolved.

Students pass or fail courses for many reasons. Educators give reasons why students fail on report cards such as: Wastes class time, late/missing assignments, disruptive behavior, and excessive absences. When a student does well, teachers give comments such as dependable student, responsible student, and great class participation. These remarks are not all of the reasons that students pass or fail courses.

When a student fails a required course such a 9th grade English, the student must repeat the course in order to graduate. For some students this means taking summer school, night classes, loss of electives, and even remaining in high school an additional term or two.

Blaine's High School Principal Conn McCartin was quoted as saying "100 of 763 sophomores passed their classes, but failed the graduation standard" (Draper, 2000, p. A16). Blaine High School is one of four high schools currently in the district. A fifth high school is now in the planning stages and will open for the 2001-2002 school year.

In a survey that was designed more for Special Education use, issues for student failure in academics were identified (Dixon and Johnson, 1997). The study found that Basic Skills Performance had a significant relationship with course failure. At the same time, basic skills performance did not play a role in grade failure. Another variable in the study was identified as socioeconomic status (SES). SES was found to be significant in grade failure, course failure, and attendance.

One positive result of graduation standards is the integration between math, science, English, art, and history. Throughout the elective courses, it is possible to receive standards from other disciplines. A few examples at Coon Rapids High School include a math standard in Metals II, technical reading (English) in Small Gas Engines II, an art standard in Graphics II, and a history standard through some of the art department courses. This integration opens some doors for students who would be at high risk of failing in a traditional math class or English class, etc. Yet, specific math, science, English, and history classes are required for graduation. Students can not completely avoid the traditional classes by taking alternative routes to receive a math, science, English, or history standard.

An article called “High School Graduation Requirements: Effects on Dropping Out and Student Achievement,” discusses the results of a study from the National Education Longitudinal Study of 1988, 1990, and 1992 (Hoffer, 1997). This article points out that dropout rates were not affected by achievement scores in math. Furthermore, the additional math required to graduate did not affect achievement scores nor the drop out rate.

In recent years many school districts have adopted an open enrollment policy. Under the open enrollment policy, students may attend the school of their choice. Open enrollment allows for movement of students among schools. Wronkovich (1998), listed five main categories of reasons why students choose schools: “Students with unmet expectations, students with fulfilled expectations, students seeking safety, students desiring to stay at their home school, and students with reservations concerning their choice made” (p. 93).

As suggested by Wronkovich (1998), students that have unmet expectations often have a direction that they want to go with their life. In smaller schools, the number and variety of courses is small compared to a large school. The smaller number of different courses causes certain students not to receive the education that they want and need for their direction in life.

On the flip side, students may also have fulfilled all their expectations in school (Wronkovich, 1998). As students make their way through school, students begin to master many accomplishments. Some students reach a plateau in their accomplishments where they cannot continue to excel because the school does not have what the student needs or wants to pursue in life.

Graduation standards have placed a new level of learning on education that requires students to strive for achievement. In Minnesota “‘The students most affected by the graduation rule are those that struggle with school,’ said Richfield counselor Toby Berglund (Draper, 2000, p. B6). According to Draper (2000), the standards have been aligned with the classes that college-bound students would likely take.

Students who often take the college prep classes such as Physics, Chemistry, Calculus, and Geometry normally do not have a difficult time with graduation standards. Students who normally struggle in the academic classes, but excel in elective classes, are the ones who struggle with the standards. Students who are considered to be “at-risk” (students that have other factors affecting their learning in school such as behavior problems, social problems, drug use, or problems at home) are the students who are most affected by the graduation standards.

The Role of Electives:

A recent survey by Mid-continent Regional Educational Laboratory (MCREL) asking how American adults rank academics using subsets of 250 standards, suggests that academics is no longer the most important aspect of school (Olson, 1999). In an article by Olson (1999), adults were asked to rank various topics in academics by importance. Health information was found to rank the most important with 7 out of 10 identifying as definitely important. Work skills took a close second with 6 out of 10 saying important. The standards in technology, language arts, and mathematics fell in the middle of the rankings. Foreign language, fine arts, and history received the lowest rankings. As the importance of academics diminished, the importance of life skills increased. While the expectations of school has broadened, the expectations for students achievement has risen.

The current Graduation Standards being implemented and used are designed to give each student the skills needed to continue their education at the college level, as well as the skills necessary to market themselves where applicable. Although many students start college after high school, not all of them finish college. According to Boutwell (1997), the rate of students entering college went from 49.9% of males and 43.4% of females in 1970 to 58.7% of males and 64% of females in 1997.

Throughout the 1990's the job market has changed with an increase in the percentage of technically trained employees. The employment rate in technically trained positions went from 33.4% in 1989 to 38.2% in 1991 (Boutwell, 1997, p. 108). The increase in these positions has continued with the increase in service oriented jobs in the U.S. (Hartoonian & Van Scotter, 1996).

Technical training comes from several methods: Apprenticeship, on-the-job training, technical schools, and colleges. Apprenticeship training is one of the oldest forms of education and is still used today. Examples of this are School-To-Work, Work Based Learning, and On-The-Job Training (O.J.T.).

School-To-Work or Work Based Learning changed in 1994 with the School-To-Work Opportunities Act which “encourages the creation of learning environments for young people at work” (Hamilton & Hamilton, 1997, p. 677). The Act allows students to operate machines at work, which are normally illegal for anyone under age 18 to operate, by considering the work place a part of the school because of the learning taking place. School-To-Work also allows students to gain skills in jobs that they are interested in pursuing after high school. Many of these students will continue with this job after high school.

As students complete School-To-Work programs, the benefits can be seen.

Students have reported in a study that:

Many teenagers have a naive and often inaccurate view of jobs and even more so of potential careers. In the minds of many students, there are no jobs between those of professional basketball players and making burgers at the local fast food restaurant. However, students with emotional disabilities often have a more inaccurate view of employment and often feel more of a sense of disconnectedness to the world of work (Owens-Johnson & Johnson, 1999, p. 18).

Finding a job can be a difficult task. One must have good social skills that allows one to market themselves to a perspective employer. The perspective employer is also looking for certain skills that will allow the job to be done effectively and efficiently. Some skills listed by employers has being desirable in employees are: Dependable, responsible, friendly, and adaptable (Hartoonian and Van Scotter, 1996).

Technology Education courses meet the needs of students and industry by bridging the gap between trained workers and untrained workers (Hamilton, 1997). Other elective courses in Business, Family and Consumer Services, and Art also allow students to develop work skills which can be used in a career. Elective classes give students the necessary skills that will allow them to learn on the job by teaching the foundation skills often used in industry. Furthermore, school to work programs help bridge the gap between school and work (Hartoonian and Van Scotter, 1996).

Chapter 3

The methods and procedures used for this study of Graduation Standards and its effects on enrollment in elective departments at Coon Rapids High School are explained in this chapter under the headings of Population of the Study, Method of Study, Procedures Followed, and Data Analysis.

Population of the Study

The Population of this study included the entire student population of the Coon Rapids High School (CRHS) school. CRHS is part of Independent School District #11. The Anoka-Hennepin School District #11, with more than 40,000 students (kindergarten-12th grade), is the 3rd largest in the state. (Minneapolis and St. Paul school districts are larger). All of the 30 elementary schools, 7 middle schools, and 4 high schools in the district are concerned with the welfare of the students. The effects of graduation standards has been raised at all levels and in all departments.

Coon Rapids is a community with a high percentage (60%) of blue collar workers. Many of the students choose to follow the path of their parents' careers. In 1998 the high school had an average of 35% choosing to attend a 4 year college, 25% attend a community college, 15% attend a vocational school, 12% are trained on the job, 5% enlist in the military, and 8% are undecided upon graduation according to the guidance department personnel.

Coon Rapids High School has students in grades 9-12, all of whom have the option to take elective classes. The high school had over 2,800 students enrolled in 1998.

In many cases 9th graders account for more than 50% of the students in an elective class. Students who graduate in the year 2002 will be the first to graduate based on the use of graduation standards all the way through high school.

Method of study:

Enrollment data was received from the guidance department at Coon Rapids High School. In the 1995-96, 1996-97, and 1997-98 school years, graduation standards were not in place. In 1999-2000 graduation standards were used for students in 9th and 10th grade. Records from the 1995-98 school years were compared to the records for the 1999-2000 school year for this study. Data from the 1995-98 school years was used to show average enrollment prior to the implementation of graduation standards. The records were compared using averages to account for total enrollment changes in the school. By comparing the years with no graduation standards to the 1999-2000 school year, an enrollment pattern change can be seen.

In order to find the information desired, a descriptive study was performed. In this study, the independent variable was the graduation standards, while the dependent variable was the enrollment. A comparison of the records from the years without graduation standards (1995-98) as compared to the 1999-2000 school year containing graduation standards allow the key questions of this study to be answered.

Information about the number of students enrolled in the school, departments, and each class, was obtained from the guidance department. Most of the records from the guidance department were in the form of tallies. The tally sheets showed how the

enrollment has changed since the implementation of graduation standards. The following research questions were addressed using the data from the guidance department:

1. Did enrollment change significantly in all elective areas with the implementation of graduation standards?
2. Has the enrollment in each elective department significantly changed with graduation standards?
3. Were certain classes dropped in elective departments due to graduation standards?
4. Were new courses implemented to meet graduation standards in elective departments?

Ninth and tenth grade students are the two grades that are using graduation standards for the 1999-2000 school year. Eleventh and twelfth grade students were not required to use graduation standards, but were doing them in some of their classes. If the eleventh and twelfth grade students were doing the graduation standards, they did not receive a grade or score for the standards.

Since the study used multiple years to determine the normal enrollment pattern and the enrollment pattern change with the implementation of graduation standards, averages were determined to account for the change in enrollment for total number of students in the school.

Listed below are the departments involved in the study:

Art

Business

Family and Consumer Sciences

Technology Education

Drivers Education

Music

Physical Education

World Language

For a complete listing of the courses in each department see the appendix A.

For the purpose of this study a definition of a true elective needed to be defined in order to eliminate required electives. A true elective is a course which students take with no other requirement controlling which department or course is taken. In other words, students have total freedom to take any course they desire. The opposite of a true elective is a required elective. A required elective is a course which is taken where the credit earned must be in a specific area.

At Coon Rapids High School many of the courses are considered to be elective. The Math department is a great example. Students are required to take 2.5-3.5 credits depending on what level of math they enter high school with. Each class is worth 0.5 credits. This means that a student must take an average of 2 math classes per year if 3.5 credits are needed. Students must take 1 of 4 classes under the Size, Shape, and Measurement heading. Three of the classes are different levels of geometry. Students must reach a minimum of Algebra I by graduation. The rest of the classes in the department are used to accumulate enough credits (2.5-3.5) for graduation. The Math Department is an example of required electives.

In the table 1 below are the number of credits required in each department. The graduating class of 2002 will be the first students that are required to use graduation

standards all the way through high school. The class of 2000 and 2001 are not using graduation standards at all. An “*” denotes that electives within the department may be taken to meet requirements (thus required electives).

Table 1

<u>Subject Areas</u>	<u>Class 2000</u>	<u>Class 2001</u>	<u>Class 2002</u>	<u>Class 2003</u>	<u>Class 2004</u>
English 9	1	1	1	1	1
English 10	1	1	1	1	1
English 11 *	1	1	1	1	1
English 12 *	1	1	1	1	1
Health	0.5	0.5	0.5	0.5	0.5
Math *	2	2	2.5-3.5	2.5-3.5	2.5-3.5
Phy Ed 9	0.5	0.5	0.5	0.5	0.5
Phy Ed 10	0.5	0.5	0.5	0.5	0.5
Social 9	1	1	1	1	1
Social 10	1	1	1	1	1
Social 11 *	1	1	1	1	1
Social 12 *	1	1	1	1	1
Physical Science 9	1	1	1	1	1
Science *	1	1	3	3	3
Electives	12.5	12.5	12.5	12.5	12.5

Note. Subjects with an * are not the actual names of the courses. Neither the school or the state require 2 years of a foreign language, but many colleges require 2 years for entrance. Therefore, the World Language department has been included in this study as an elective. The Phy Ed department has been included in the study because Phy Ed 9 and Phy Ed 10 are the true names of the required class with no other requirements in the department. For the study totals in the Phy Ed department, the two required Phy Ed

classes have been dropped from the department totals. The table has been reproduced with permission from Coon Rapids High School Guidance Department.

Procedures Followed:

In order to conduct this study, several important steps needed to be completed. Specifically, first the identity of which departments would be involved in the study were determined. Next the numbers of seats filled by students in the school and each department were determined. A comparison of the 1997-98 records with 1999-2000 records by department showed if any courses had been added or dropped. Then the creation of a table with the departments and number of seats filled was completed. Once the table was completed the “t” test needed to be applied to the data in the table. The test results were then compared to the “t” test probability chart. Lastly, the data was analyzed to answer the study questions.

In order to determine which departments were involved in the study, registration booklets from the school were obtained. These booklets listed the required classes and the elective classes by departments. Many of the elective classes are required in an indirect manner to meet graduation requirements. An example is that 9th, 10th, 11th, and possibly 12th graders must take a math class each year. Although students only need to reach Algebra I and one class under the Size, Shape, and Measurement heading (Applications in Geometry, Geometry, Accelerated Geometry, and Probability and Statistics) by graduation, many students reach Algebra I during their 9th grade year. To meet the graduation requirement of total math credits, students then take other math

classes that are viewed as electives. The departments that have requirements similar to this example are: Mathematics, Science, and Social Studies.

Once the departments which are involved in the study were identified, the number of students enrolled in each department and in the school needed to be determined. To accomplish this task, records from the guidance department showing numbers of students enrolled in each class, department, and the school were obtained for each year. These records were in the form of tallies.

After the departments involved and enrollments were identified, the following information was determined for each class and department: Numbers enrolled by year before standards, average for years without graduation standards, numbers enrolled in 1999-2000 (with graduation standards), and the difference between the average and 1999-2000 enrollments. With this information, several tables were created. One table with the “t” test results, probability, and direction of change was created. A table with classes added by department and 1999-2000 enrollment totals for each class was also necessary. Another table was created with the classes dropped by department, class enrollment totals by year, and the average enrollment for the 1995-98 school years. While creating the tables, the “t” test was applied to the data in the spreadsheet. At the same time the “t” test results were compared to the “t” test probability chart to answer the study questions.

Data Analysis:

The records from the guidance department were divided into two groups. The 1999-2000 school year records with 9th and 10th grade students using graduation

standards and the years of 1995-1998 with no students using graduation standards. The 1995-1998 years were totaled by school and department enrollment. The 1999-2000 school year records were then totaled for school and department enrollments. With the total enrollments for three years, an average was calculated to show significant change from the normal for the 1999-2000 school year.

To determine the significance of the study, the “t” test was used. The following is the exact formula used to give results:

$$t = (1995-98 \text{ average enrollment}) - (1999-2000 \text{ enrollment}) / sp [\sqrt{(1/3 + 1)}]$$

Below are the additional formulas used to complete the “t” test:

$$s1 = \sqrt{1/(N1-1) [(X1 - X \text{ bar})^2 + (X2 - X \text{ bar})^2 + (X3 - X \text{ bar})^2]}$$

* Note s1 is the standard deviation before graduation standards.

$$s2 = \sqrt{1/(N2-1) [(X1 - X \text{ bar})^2 + (X2 - X \text{ bar})^2 + (X3 - X \text{ bar})^2]}$$

* Note s2 is the standard deviation with graduation standards.

$$sp = [(N1-1) S1^2 + (N2-1) S2^2] / (N1 + N2 - 2)$$

sp = Standard deviation pooled.

N1 = The number of samples taken before graduation standards.

N2 = The number of samples taken with graduation standards.

X1 = 1995 - 96 enrollment.

X2 = 1996-97 enrollment.

X3 = 1997-98 enrollment.

X bar = 1995-98 average enrollment.

The degrees of freedom for the study was determined to be two. The formula for determining the degrees of freedom is as follows: $N1 + N2 - 2 = DF$. Where N1 = the

number of samples from the front side (before graduation standards). N_2 = the number of samples from the backside (graduations standards). DF = the degrees of freedom.

The total enrollment for the 1999-2000 school year can be used with no further calculations. The school years from 1995-98 need to be totaled then divided by 3 to determine the average enrollment for those three years. To be specific the 1995-98 enrollment totals all need to be averaged to determine the normal enrollment pattern.

To run the “t” test for the total of all departments an average needed to be calculated for each year. Since there are nine departments involved in the study, the yearly totals were divided by nine in order to give an average “department” enrollment.

The final calculation entails a comparison between the 1995-98 average with no graduation standards and 1999-2000 with 9th and 10th grade students using graduation standards. This was done through the “t” test.

Chapter 4

The numbers used to determine enrollment in the elective classes were received from the guidance department at Coon Rapids High School. During the 1995-96, 1996-97, and 1997-98 school years, graduation standards were not in place. In 1999-2000 graduation standards were used for students in 9th and 10th grade. Records from the 1995-98 school years were compared to those for the 1999-2000 school year for this study. An average of the 1995-98 school years (no graduation standards), was used to represent average enrollment. The records were then compared using averages to account for total enrollment changes in the school. By comparing the years before graduation standards with the 1999-2000 school year together, the enrollment pattern change can be seen. The comparison of the records from years without the graduation standards with 1999-2000 school year containing graduation standards allows the key questions of this study to be answered.

In Table 2, the enrollment totals (seats filled) for each department can be seen. The enrollments are the number of seats filled, which means that it is possible for students to be counted more than once. Each department has the totals by year along with an average of the three years before graduation standards were implemented. Placed next to the average for the 3 years is the 1999-2000 school year which had 9th and 10th grade students using graduation standards for easy comparison. For easier comparison, a column showing the actual difference between 1999-2000 and the average enrollment is given.

Table 2 shows that for each school year, the total enrollment (seats filled) for the school has grown. The 1999-2000 school year had the highest student enrollment within this study. There were 1728 extra seats during the 1999-2000 school year as compared to the average school enrollment taken from the 1995-98 school years. Table 2 shows the total enrollment change for all departments combined is 22 additional students.

Table 2

<u>Departments</u>	<u>The</u> <u>1995-96</u>	<u>Number</u> <u>1996-97</u>	<u>of</u> <u>1997-98</u>	<u>Seats</u> <u>Avg. 95-98</u>	<u>Filled</u> <u>1999-2000</u>	<u>Change of Avg.</u>
Total School Enrollment	39536	40448	41408	40464	42192	1728
ART	1099	1332	1472	1301	1482	181
BUSINESS & MARKETING	2033	2118	2159	2103	1547	-556
DRIVER & SAFETY		526	531	529	474	-55
FAMILY & CONSUMER SCIENCES	1123	1467	1318	1303	1226	-77
MUSIC DEPT.	500	595	640	578	532	-46
PHYSICAL	1167	1197	1275	1213	1011	-202
TECHNOLOGY	2453	2439	2574	2489	2600	111
SCHOOL TO CAREER	113	266	268	216	545	329
WORLD LANGUAGE	1361	2641	2697	2233	2570	337
TOTAL OF DEPARTMENTS	9849	12581	12934	11965	11987	22

Table 2 contains the numerical data used in table 3. Table 3 displays the “t” test results. In table 3, each department showed a change as demonstrated by the “t” test results. The “t” test results are all displayed as positive numbers. The column marked “Direction of Change” shows the actual direction of the change. An increase means that the enrollment change was higher during the 1999-2000 school year with the use of graduation standards. A decrease means that the enrollment dropped during the 1999-2000 school year.

The “t” test indicates a shift and / or an elongation in the normal distribution (bell curve). See figure 1. This study required a two sided test, since we are assuming a normal distribution with 3 standard deviation limits. For a significant change in this study, the probability of being within 3 standard deviation limits must be less than 0.975 or 97.5% (Neter, 1996). The degrees of freedom for the study was determined to be two ($N1 + N2 - 1 = 2 + 1 - 1 = 2$). The formula for determining the degrees of freedom is as follows: $N1 + N2 - 2 = DF$. Where $N1$ = the number of samples from the front side (before graduation standards). $N2$ = the number of samples from the backside (graduations standards). DF = the degrees of freedom.

Question # 1 of this study (Did the enrollment change significantly in all elective areas with the implementation of graduation standards?) can be answered using information from table 2 and table 3. The answer to question #1 is yes! As a group the elective departments had an overall change of 22 more seats filled between the average “department” enrollment and the 1999-2000 “department” enrollment. The “t” test result was 0.0112 for a probability of less than 0.60 which means that the bell curve has shifted

and / or elongated significantly. In other words, less than 60% of the sample group is expected to be inside of the bell curve or the sample area.

Question # 2 Did the enrollment in each elective department significantly change with graduation standards? The answer to this question is no. The Business & Marketing Education Department did not post a significant change. It had a change in enrollment, but not a significant change. All the other departments did however post a significant change. Four departments significantly increased enrollment (Art 181, Technology Education 111, School to Career 329, and World Language 337). On the other hand, 5 departments showed a significant decrease in enrollment (Business & Marketing -556, Driver & Safety -55, Family & Consumer Sciences -77, Music -46, and Physical Education -202).

For both questions #1 and #2 the total school enrollment effects the enrollment of the departments as a whole and individually. One would expect that if the school enrollment was higher, the enrollment in the departments would increase as well. The same would be for a decrease in enrollment. This would suggest a status quo scenario. In the results of the study, this did not happen for all departments.

Note that the Business & Marketing Department did not post a significant change. Tables 4 and 5 lend some insight into enrollment changes by showing class changes within the departments.

Figure 1

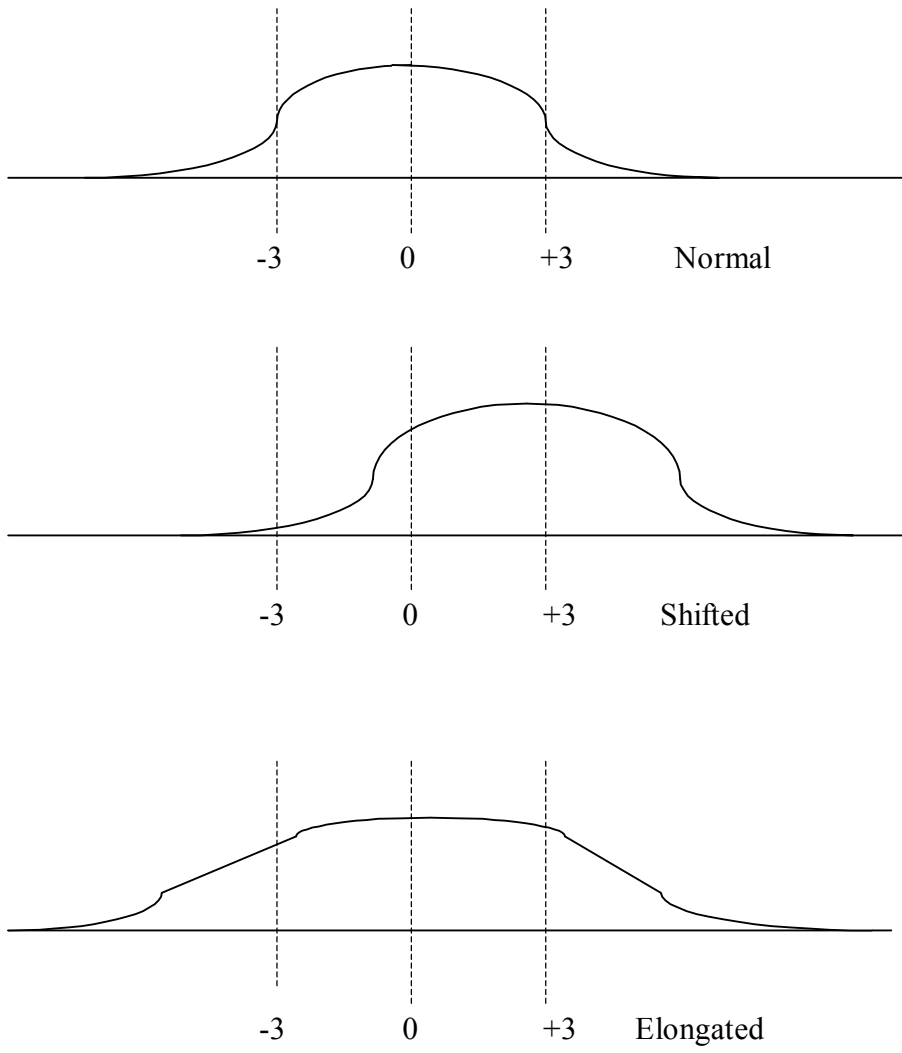


Table 3

<u>Departments</u>	<u>Change</u>	<u>"t" Test</u>	<u>Probability</u>	<u>Significance</u>
Total School Enrollment	increase	1.599	0.87 **	yes
ART	increase	0.832	0.75 **	yes
BUSINESS & MARKETING	decrease	7.497	0.99 *	no
DRIVER & SAFETY	decrease	0.084	<0.60 **	yes
FAMILY & CONSUMER SCIENCES	decrease	0.385	0.62 **	yes
MUSIC	decrease	0.561	0.68 **	yes
PHYSICAL	decrease	3.138	0.95 **	yes
TECHNOLOGY	increase	1.299	0.83 **	yes
SCHOOL TO CAREER	increase	3.208	0.95 **	yes
WORLD LANGUAGE	increase	0.386	0.62 **	yes
TOTAL OF DEPARTMENTS	increase	0.011	<0.60 **	yes

Note. A probability of 0.975 or less is considered to be a significant change at the .05 level for a two tailed test.. *P < .05 two tailed, **P > .05 two tailed.

In Table 4, the courses that were dropped for the 1999-2000 school year are listed. These courses had been offered during the 1995-98 school years. The courses are listed by department. Next to each course is the average enrollment for the 1995-98 school years and each year individually. The dropping of these classes, in turn would lower the enrollment of students in the respective departments.

Question # 3 Were certain classes dropped in the elective departments due to graduation standards? The answer to this question is yes! Graphics 3 in the Technology Education Department was dropped. The curriculum from the course was then modified to create a new course called Photo Video II. The other classes that were dropped were Art Lab III, Accounting IV, Record Keeping I, and Record Keeping II.

Table 4

<u>Departments</u>	<u>Classes Dropped</u>	<u>1995-98 Avg.</u>	<u>1997-98</u>	<u>1996-97</u>	<u>1995-96</u>
ART	Art Lab III	37	30	41	40
BUSINESS & MARKETING	Accounting IV	17	22	13	17
	Record Keeping II	26	26		
	Record Keeping I	129	95		162
DRIVER & SAFETY					
FAMILY & CONSUMER SCIENCES					
MUSIC					
PHYSICAL					
TECHNOLOGY	Graphics III	11	13	8	13
SCHOOL TO CAREER					
WORLD LANGUAGE					

Note. The courses taught during 1995-1998 school years which were not taught during the 1999-2000 school year are listed above.

In Table 5, the classes that have been added during the 1999-2000 school year are listed by department. Next to the classes are the enrollment totals for the 1999-2000 school year. These classes can add to the enrollment totals for the respective departments.

Question # 4, Were new courses implemented to meet graduation standards in elective courses? The answer to this question is yes! Investigating Careers in the School to Career Department was made mandatory for all students. The course was designed to meet the Career Investigation section under the Decision Making element of the 10 Profiles of Learning Elements. (See chapter 2 for further information on the 10 Profiles of Learning Elements.)

Of the added courses, one elective course was developed to meet state graduation standard guidelines. The course was made mandatory for all students to take before graduation. This course is “Investigating Careers” in the School to Career Education Department. Because this course was mandatory, it had a large number of students enrolled. All other courses added were designed to meet graduation standards in various areas of the Elements of Profiles of Learning (see chapter 2) to give students choices of classes that would meet a standard.

The dropping of classes and adding of classes must be taken into consideration when looking at what changes have occurred in each department. Adding classes will raise the numbers, while dropping lowers the numbers. If both dropping and adding occur in a department the numbers may not reflect a change.

Table 5

<u>Departments</u>	<u>Classes Added</u>	<u>1999-2000</u>
ART		
BUSINESS & MARKETING	International Business	61
DRIVER & SAFETY		
FAMILY & CONSUMER SCIENCES	Student Assistant-Preschool	28
	Clothing III	6
	Clothing V	1
MUSIC		
PHYSICAL		
TECHNOLOGY	Photo Video II	135
	Computer Networking	30
SCHOOL TO CAREER	Investigating Careers	254
WORLD LANGUAGE	German V	14
	American Sign Language	112

Note. Listed courses were not taught during the 1995-1998 school years, but were in the 1999-2000 school year.

Chapter 5

This chapter has been divided into three sections: (1) Summary of the Study; (2) Conclusions of the Study; and (3) Recommendations Related to the Study.

Summary

The following summary section has been divided into three sections: (1) Restatement of the Problem; (2) Methods of the Study; and (3) Major Findings.

Restatement of the Problem

When the graduation standards were first introduced, they had not been widely tested. Once the standards were implemented, some problems that had not been considered, started appearing. Students have found that the required classes that they need or want are full so they will have to wait a year. Educators have found that students may pass a class, but fail the standard, or vice versa. This means that the student must repeat the course or find some other means of meeting the standard in order to graduate. Often, when a student needs to repeat a course, it replaces an elective or filler class in the students course schedule.

The purpose of this study was to determine if graduation standards has effected the enrollment in elective courses. Educators are concerned about graduation standards for several reasons. First, students who typically struggle academically, often succeed in technology classes or other elective courses due to alternative learning styles. Second, not every student will choose the same path after high school. Some will attend 4 year

colleges or universities, while others may seek technical training from a trade school or on the job. Students need to be able to take classes which allow them to explore different career paths.

Specifically the problem statement is as follows: This study will compare enrollment trends of elective courses at Coon Rapids High School before and after the implementation of graduation standards.

The study has sought answers to the following Questions:

1. Did the enrollment change significantly in all elective areas with the implementation of graduation standards?
2. Has the enrollment in each elective department significantly changed with graduation standards?
3. Were certain classes dropped in the elective departments due to graduation standards?
4. Were new courses implemented to meet graduation standards in elective departments?

Methods of the Study

The numbers used to determine enrollment in the elective classes were received from the guidance department at Coon Rapids High School. In 1995-96, 1996-97, and 1997-98 school years, graduation standards were not in place. In 1999-2000 graduation standards were used for students in 9th and 10th grade. Records from the 1995-98 school years were compared to the records for the 1999-2000 school year for this study. An average for the 1995-98 school years, (no graduation standards) was used to show

average enrollment. The 1995-1998 years were then totaled by school, department, and class enrollment. The 1999-2000 school year records were then totaled for school and department enrollments. With the total enrollments for three years, an average was figured to show significant change from the normal for the 1999-2000 school year. The records were compared using averages to account for total enrollment changes in the school. By comparing the years of no graduation standards with the 1999-2000 school year together, the enrollment pattern change can be seen.

To determine the significance of the study, the “t” test will be used. The following is the exact formula used to give results:

$$t = (1995-98 \text{ average enrollment}) - (1999-2000 \text{ enrollment}) / sp [\sqrt{(1/3 + 1)}]$$

Major Findings

The total enrollment for the school has grown for each year since 1995. The 1999-2000 school year had the highest student enrollment within this study. There were 1728 extra seats filled during the 1999-2000 school year as compared to the average school enrollment taken from the 1995-98 school years. The total enrollment change for all elective departments combined was 22 additional seats filled by students. The enrollment for the elective departments did not rise proportionately with the rise in the school enrollment. Although some elective departments did show an increase in enrollment (Art 181, Technology Education 111, School - To- Career 329, and World Language 337 seats), others showed a decrease (Business & Marketing -556, Driver & Safety Education -55, Family & Consumer Sciences -77, Music -46, and Physical Education -202). The decreases and increases within the departments involved in the

study canceled out many changes as all elective departments are concerned, but statistically the bell curve had shifted and / or elongated. Less than 60% of the sample group is expected to remain.

Statistically, the Business & Marketing Department did not post a significant change even though a drop of 556 seats filled from the average was shown. However, the overall average “department” did show a shift in the distribution or bell curve.

Of the added courses, one elective course was developed to meet state graduation standard guide lines. The course was made mandatory for all students to take before graduation. This course is “Investigating Careers” in the School to Career Education Department. Because this course was mandatory, it had a large number of students enrolled. All other courses added were designed to meet graduation standards in various areas of the Elements of Profiles of Learning (see chapter 2) to give students choices of classes that would meet a standard.

Conclusions

Since Investigating Careers in the School To Work Department was made mandatory, the department had a new course added to the department which everybody must take by graduation. This increased the departments enrollment. If this course was removed from the study results, the outcome would be different. By removing Investigating Careers which had 254 students during the 1999-2000 school year, the department enrollment would drop from 545 to 291. This would effect the “departments” enrollment by showing a drop by 232 students.

The drop of Investigating Careers would give a “t” test result for School To Careers of 0.734 with a probability of 0.71. This would still be a significant increase for the department. The drop would give a “t” test result for the “departments” of 0.118 with a probability of less than 0.60. The “departments” change would then be a significant decrease instead of a significant increase. The answer to question #1, did the enrollment change significantly in all elective areas with the implementation of graduation standards, would still be yes, but with a significant drop if Investigating Careers was dropped from the study.

By dropping Investigating Careers, 254 students would have been in other classes. The question becomes how many would have been in the elective classes. The results of the study could be anywhere from the result with the 254 students included to the result without the 254 students depending upon how many students would be in the departments involved in the study.

For both questions #1 and #2 the total school enrollment effects the enrollment of the departments as a whole and individually. One would expect that if the school enrollment was higher, the enrollment in the departments would increase as well. The same would be for a decrease in enrollment. This would suggest a status quo scenario. In the results of the study, this did not happen for all departments.

Even though the answer to question #1, did the enrollment change significantly in all elective areas with the implementation of graduation standards, is yes, it may not be the only problem that caused the enrollment to change. The fact that a new class was created to fill a void within the school to accomplish a state mandated standard may mean that the implementation of graduation standards was the catalyst for the change. It also

cannot be determined if the creation of a new class, Investigating Careers, itself was the cause for the change in the enrollment patterns.

Students can take a maximum of 16 classes per year at Coon Rapids High School. If a course is required that was not required before, an elective is lost. Since Investigating careers was a new required course it did reduce the number of electives students could take. This theory causes a decrease in the number of seats filled in elective areas.

Question # 3 Were certain classes dropped in the elective departments due to graduation standards? The answer to this question is yes! Graphics 3 in the Technology Education Department was dropped. The curriculum from the course was then modified to create a new course called Photo Video II.

The other classes that were dropped were Art Lab III, Accounting IV, Record Keeping I, and Record Keeping II. These courses could have been dropped for some of the following reasons:

1. There may have been a teacher shortage in the corresponding department.
2. The enrollment numbers needed to run the class may not have been met.
3. Much of the materials taught in the class may have been moved to another class.
4. There may have been a lack of funding for the class.

Question # 4, Were new courses implemented to meet graduation standards in elective courses? The answer to this question is yes! Investigating Careers in the School to Career Department was made mandatory for all students. The course was designed to meet the Career Investigation section under the Decision Making element of the 10

Profiles of Learning Elements. (See chapter 2 for further information on the 10 Profiles of Learning Elements.)

As mentioned above, Photo Video II was one course that was using old curriculum from a course which was dropped, Graphic Communications III. Photo Video II was developed to meet graduation standards and improve the existing curriculum in the Graphic communication area. The improvements were made to update the course with changes in technology and industry that have happened since Graphics III was last revised. Other courses may have been added or dropped using this scenario as Photo Video II and Graphic Communications III.

It is entirely possible that some of the courses added had been offered in past years, but not during the study period. Some possible reasons that would contribute to this possibility are a teacher shortage, budget cuts, and low enrollment.

Lastly, Computer Networking was implement in the Technology Education Department in 1999-2000. The course was designed to give students knowledge about a growing new field in industry. The course did not meet any graduation standards during this study. The course was for Juniors and Seniors only who were not required to do any graduation standards.

The new courses could have been implemented for some of the following reasons:

1. Implementation to meet graduation standards.
2. Implementation in an attempt to expand the department.
3. Implementation to try to keep up with changes in society.
4. Give students more opportunities to explore possible career paths.

Recommendations of Study

Limitations:

The study needs to be repeated in the near future due to some study limitations.

1. The study had only half of the population using graduation standards. In 1999-2000 only the 9th and 10th grade students were using graduation standards.
2. During the study there were changes in the faculty at the school. It is possible that the teacher of a course can draw or repel students to take the class. The number of teachers available to teach a specific course may have limited the number of classes taught.
3. There may have been conflicts in scheduling courses. The same students that take one course register for another course that happens to be taught only at the same time as the first.
4. This study did not take into consideration many other factors that affect course enrollments. Other factors may have contributed to the addition or elimination of courses and number of sections taught.
5. The perspective of electives within the community may have changed. Students, parents, and councilors support plays a role in the enrollment of elective courses.

6. For a true statistical test more data points are preferred. Using one year with graduation standards does not give an average.

The results found in chapter 4 have allowed the questions of the study to be answered. The results of the study suggest that there could be a decrease in enrollment in the elective departments within the school. The study has however raised more questions which were not addressed during the study. Here are a few of the questions.

1. If the schools enrollment was higher, why was there no significant change in all of the elective departments?
2. If the schools enrollment was higher, why were some departments showing a significant rise in enrollment, while others showing a significant drop in enrollment?
3. Is there a cycle in the enrollment pattern from year to year?
4. Is the creation of a new course (Investigating Careers) the best method for addressing the standard in which it was created to meet?
5. Is one general course for Investigating Careers better than having several courses focused to one topic?

With these questions that have been raised, it is recommended that a study be conducted to address these new questions and how these questions could have affected this study.

If the number of graduation standards were reduced, the number of elective courses students could take would increase. Elective courses allow students to learn more about a particular field that might interest them for a future career. Limiting the career choice exploration of a student is a tragic educational loss to students. The

importance of each standard for graduation needs to be determined. The results will show which standards could be dropped, if any, for a reduction in the number of graduation standards required for graduation.

Some related topics for future study are: The Effects of graduation standards on the Drop Out Rate, The Effect of Graduation Standards on Students Career and Future School Plans, and The Effects of Graduation Standards on Students Exploration for Career Opportunities. All of these topics will give better insight into what changes can be made to graduation standards to improve the results schools, teachers, and students are currently experiencing.

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Appendix A

Departments and Classes

ART DEPT.

Art Lab I
Art Lab II
Art Lab III
Ceramics I
Ceramics II
Commercial Art I
Commercial Art II
Adv. Art Studio
AP Art History
Contemp Crafts
Drawing I
Drawing II
Painting I
Painting II
Sculpture I
Sculpture II
Video/Computer Arts
Student Assistant

BUSINESS & MARKETING EDUCATION DEPT.

Keyboarding I
Keyboarding II
Computer Word Processing
Business Technology
Personal Money Management
Computer Applications I
Computer Applications II
Computer Communications
Recordkeeping
Recordkeeping II
International Business
Accounting I
Accounting II
Accounting III
Accounting IV
Business Management
Business & Personal Law I
Business & Personal Law II
Entrepreneurship

Marketing
Advertising Sales

DRIVER & SAFETY EDUCATION DEPT.
Classroom Driver / Safety Ed

FAMILY & CONSUMER SCIENCES DEPT.

Clothing I
Clothing II
Clothing III
Clothing IV
Fashion
Child Development/Parenting
Child Care Occupations
Independent Living
Interpersonal Relations I
Interpersonal Relations II
Housing & Interior Design
Foods & Nutrition I
Foods & Nutrition II
Nutrifestyles
Hotel/Restaurant Cookery I
Hotel/Restaurant Cookery II
Student Assistant-Preschool
Student Assistant-FACS

MUSIC DEPT.

Band Level I
Band Level II
Band Level III
Orchestra Level I & II
Orchestra Level III
Choir Level I
Choir Level II
Choir Level III

PHYSICAL EDUCATION DEPT.

Strength Training I
Strength Training II
Strength Training III
Strength Training IV
Total Physical Education
Aerobics/Strength Training I
Aerobics/Strength Training II
Aerobics/Strength Training III

Team Sports
Individual Sports
Power Volleyball I
Power Volleyball II
Power Volleyball III
Developing Leadership Techniques

TECHNOLOGY EDUCATION DEPT.

Electronics I
Electronics II
Electronics III
CAD/Mach Drawing I
CAD/Mach Drawing II
CAD/Arch Drawing I
CAD/Arch Drawing II
CAD/Arch Drawing III
CAD/Arch Drawing IV
CAD/Technical Illustration I
CAD/Technical Illustration II
Graphic Comm. I
Graphic Comm. II
Photography/Video I
Photography/Video II
Metals I
Metals II
Metals III
Metals IV
Metals Ind. Study
Woods Ind. Study
Woods I
Woods II
Cabinetry/Furniture I
Advanced Cabinetry/Furniture II
Small Gas Engines I
Small Gas Engines II
Consumer Autos
Automotive Tech I
Automotive Tech II
Adv. Auto I A & Adv. Auto II B
Computer Networking
Computer Aided Electronics
Student Assistant

SCHOOL TO CAREER EDUCATION (Tech School)

Investigating Careers

Machine Trades I
Machine Trades II
Welding Trades I
Welding Trades II
Business Internship Seminar
Business Internship Job
Marketing & Management Internship Seminar
Marketing & Management Internship Job
Health Internship Seminar
Health Internship Job
Family and Consumer Science Intern Seminar
Family and Consumer Science Intern Job
Cosmetology
Trade & Industrial Internship Seminar
Trade & Industrial Internship Job

WORLD LANGUAGE DEPT.

French I
French II
French III
French IV
French V
German I
German II
German III
German IV
German V
Spanish I
Spanish II
Spanish III
Spanish IV
Spanish V
American Sign Language I
American Sign Language II