STRATEGIES NEEDED TO MARKET TECHNOLOGY EDUCATION COURSES AT ARROWHEAD HIGH SCHOOL

by

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A Research Paper

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190-735 Problems in Industrial/Technology Education

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ABSTRACT

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Strategies Needed to Market Technology Education Courses at Arrowhead High School

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To develop an effective marketing plan, the Technology Education Department of Arrowhead High School needs to determine responses to the following questions regarding class/course selection by Freshman and Sophomore students: 1) why does a student select a particular course; 2) who is influencing student course selection; and 3) what is the extent of their influence?

The Technology Education Department at Arrowhead High School did not have a marketing plan. A marketing plan would benefit the Technology Education department's efforts in recruiting new students and stabilizing the program and thereby minimizing attrition.

The purpose of this study is to analyze the reasons students selected courses in high school specifically for Technology Education. It is directed towards the student's perception of what influenced them to enroll in an elective technology course.

The data will then be used to design a marketing program to best utilize resources to get the proper information to the right individuals. With this information students may make informed decisions when enrolling for courses that relate to their social and career goals.

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To my wife, Tracy, who put aside her dreams that I may accomplish mine, this Thesis is dedicated.

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Chapter 1

Introduction

Who determines and/or influences the choices of a student's course selections when they are signing up for classes? Determining why a student selects a particular course, and who is influencing their decisions and what is the extent of their influence, is necessary information when developing a marketing plan. Possible influence examples are teachers, parents, counselors, friends, career interests, class activities, class projects, curriculum and society. With these answers technology teachers can determine the best methods to educate and inform students about technology education elective courses. Consequently, students can make wise course choices throughout their high school experience by understanding why the study of technology is important and how it can lead into careers and human activity.

Arrowhead High School is situated next to the village of Hartland, Wisconsin, located geographically in the southeast portion of the state. Economically, with employment rising and wages increasing there is a need for a qualified labor force (Village of Hartland, 1996). Industry employment is expected to grow through the year 2005 and the regional employment growth is predicted to exceed both state and national averages (Milwaukee MSA Projections, 1992-2005, 1996). Hartland is directly influenced by this growth trend as expansion of industry has changed this once rural-based school district into an affluent society.

The Arrowhead United School District currently has seven feeder schools (kindergarten through eighth grade) that flow into one high school campus. There were

approximately 1,700 students attending Arrowhead High School the fall of 1999 (Arrowhead High School, 1999). Consequently, with the expansions of the entire district feeder schools enrollment is expected to reach 2000 high school students by the year 2000. (D. Lodes, personal communication, February 14, 1997)

In a public high school like Arrowhead, there are mandated academic courses with elective courses to select from. Mandated courses are basic core curricular classes like English, math, history, and science. Elective courses are those the students choose such as technology, art, music, business, and agriculture. Technology education courses are not offered to the district's students until they enter high school. Promotion of technology education courses is necessary to enroll them in the high school elective curriculum. This presents a great challenge for the Technology Department to market their course opportunities to all of the students. Based upon an enrollment discussion with principal Mrs. Bonnie Logerman, the current enrollment in the Introduction to Technology Education course—which is mostly comprised of freshman—averages thirty percent of the freshman class. Incoming freshman enrollment for the school year 2000-2001 is 568. Of those 568 students, 188 are enrolled in Introduction to Technology Education. That means only 33% of this freshman class will get an overview experience of what the Arrowhead Technology Education department has to offer. With attrition of students enrolled in technology education courses, the technology education department needs a consistent effort to inform all students about technology education and its importance (Arrowhead High School, 2000). A strong effort needs to be made to increase and stabilize this enrollment as students go through their high school experience. This leads into what factors affect students' electives.

Given the applied nature of technology, there is a need for deeper understanding of its ways of solving problems and its importance in the high school curriculum (Gagel, 1997).

> Technology is a fundamental aspect of human activity. The acceleration of technological change is a constant in everyone's life today. The power and the promise of technology are based on the need for technological literacy, the ability to use, manage, and understand technology. Technological literacy is considered to be critical to the success of individuals, entire societies, and to the Earth's ecological balance. The promise of the future lies not in technology alone, but in people's ability to use, manage, and understand technology. (International Technology Education Association, 1996, p. 2)

As society develops, new technologies are invented and utilized and people must act responsibly for everyone's welfare. As education prepares students for careers, students must be cognizant of the courses they choose. Those high school courses assist in career opportunities at some point in time. Since less than one-fourth of those students attempting post secondary education will graduate, entering the workforce without a formal post secondary education (Moschell, 1994; Gray; 1997). Most individuals in society find a job; some after dropping out of high school, some after high school graduation, and some after post secondary education. The experiences students encounter in high school must allow them to be prepared and informed citizens to enter the work force for their future. Technology education courses are valuable in a person's future in preparation and transition from school to work. These courses have proven reliable and are realistic resources when developing students' abilities for a successful career.

Therefore, the need for a specific plan to inform all of Arrowhead students about technology education is paramount. The strategies that will comprise and meet goals would include a process for analyzing, planning, and managing resources while identifying and serving current students and potential students and their needs (Dirks & Daniel, 1991). There is no doubt that secondary, vocational, industrial, technical, or technology education programs are a part of the field that prepares individuals for a career (Gray, 1997).

Statement of the Problem

The Technology Education department at Arrowhead High School did not have a marketing plan. A marketing plan would benefit the Technology Education department's efforts in recruiting new students and stabilizing the program and thereby minimizing attrition.

Purpose of the Study

The purpose of this study was to analyze the reasons students selected courses in Technology Education. It was directed towards the student's perception of what influenced them to enroll in an elective technology course. The data will then be used to design a marketing program to best utilize resources to get the proper information to the right individuals. With this information students may make informed decisions when enrolling for courses that relate to their social and career goals.

Research Questions

The following research questions were added in this study:

1. Who influences a student's elective course choices?
2. What are the major influences of student course selection?
3. Do those influencing factors importance change during high school?
4. What is the extent of their influence?

Significance of the Study

- Information from the data could be used to determine specific areas that a marketing plan should address.
- Data from the study could be used to develop promotional materials for students, faculty, administration, and parents about the technology education program.
- Information from the survey could provide a financially prudent marketing strategy for increasing awareness of technology elective courses.
- Data could be used as an in-service for presenting and informing teachers, counselors, and administration.

Limitations of the Study

- This study was limited in reference to only the Arrowhead Union School District, and will be difficult to generalize to other areas.
- The social economic value makeup of the Arrowhead region was unique to Wisconsin.

- A limitation in this case study is that these students already enrolled in technology education shows concern in the ability of its findings to be generalized.

Definition of Terms

Promotion - The function of informing, publicizing, persuading and influencing a person's decision or also communication information between two parties to influence attitudes and behavior (Neufeldt, 1988).

Self-concept – To be a person's self-perceptions formed through experience with and interpretations of one's environment. They are influenced especially by evaluations by significant others, reinforcements, and attributions for one's behavior (Shavelson, Hubner, & Stanton, 1976).

Technology – Human innovation in action. This involves the generation of knowledge and processes to develop systems that solve problems and extend human capabilities (International Technology Education Association, 1996).

Chapter 2

Review of Literature

Introduction

Many reports suggest that students have inadequate grounding in math, science, and technology. As a result, they lack sufficient knowledge to acquire the training, skills, and understanding that are needed today, and will be even more critically needed in the 21st century (Moschell, 1994). The researcher has established that the areas of course requirements, selection process, and student influences are pertinent in understanding the reasons why students select the courses they choose.

Therefore what students learn is critical for their future; and "if schools are operating at maximum efficiency, they are responsible for about 40% to 50% of what a child learns. The other 50% to 60% of learning comes from the family and community" (Riley, 1997, pp. 18). Principals, teachers, and counselors play a decisive role in informing students and parents of the necessity of planning ahead academically. Students and parents must understand that course selection matters. At Arrowhead High School students are required to take 50 credits within their four years to graduate (Arrowhead High School, 2000).

An example of Arrowhead High School's 4-year planning worksheet from the Curriculum Guide is shown in Appendix F. This is the time when the planning and selection take place for the next four years. Adjustments will periodically be made but their individual plan is laid out at the beginning of their high school career. Course selection not only will maximize students high school experience, they will open the

widest range of choices for college and careers (Riley, 1997). Students need to learn to adjust to change, and how to deal with forces that influence their future (Virginia Department of Education, 1992). What they learn today will be adapted tomorrow.

Course Requirements/Expectations

Expectations keep rising. Colleges have pushed society to believe that a four-year baccalaureate degree is the most important thing after high school. Due to these increased expectations parents and students are urged to think college early, both academically and financially (Riley, 1997). Between 1973 and 1990, the percentage of academic course taking jumped from 59% to over 66% (Angus & Mirel, 1993). This is clearly a result of the High School Course-Taking and Education Reform, prompting government policy to curricular reform.

Due to *A Nation At Risk* school districts were mandated to have certain graduation requirements. “Spurred in large measure by the publication of *A Nation At Risk* in 1983 and a series of subsequent reports urging major education reform, many states took concerted action to strengthen the secondary curriculum during the 1980s. Some of these measures included increasing graduation requirements, introducing more rigorous curricula, lengthening the school day and year, and proposing a variety of other reforms. With a few exceptions, most of these steps were designed to improve the academic curriculum—with the goal of raising standards for math, science, reading, literature, and social sciences. However, explicit statewide efforts to bolster the vocational curriculum have, for the most part, been absent. In fact, many vocational educators assert that this inactivity has led to a significant decline in the number of students taking vocational

education courses and in the average number of credits these students earn in the vocational curriculum (Hoachlander, p. 1, 1992).

In 1989 required credits for high school went from each school district's local option to 4 credits in English, 2 credits in math, 2 credits in science, and 3 credits in social studies as illustrated in Appendix E (Clune, White & Patterson, 1989). Ten years later Arrowhead High School required course credits doubled those requirements of the state illustrated in Appendix F (Arrowhead High School Curriculum Guide 2000); not to mention the foreign language push by colleges when requirements get greater and greater so students can get into college and pass standardized entrance tests. The single most common complaint is it reduces the chance for elective courses. As the number of students in these courses is reduced due to scheduling conflicts so does the opportunity for those departments to stay vital and running (Clune, White & Patterson, 1989).

This specifically shows that increasing core graduation requirements reduces the electives that are offered and reduces the number of students that could take those classes (Appendix G). So the academic high school courses are being taken even earlier to open schedules for college prep courses. Colleges in general have raised the bar on their entrance requirements therefore putting a strain on the enrollment of high school elective courses. Students can take advanced placement classes in high school, which gives them college credit, and saves money, "FACT: A four-year college education is getting more and more expensive each year. The costs have outpaced the rate of inflation. Between 1980 and 1991, college costs rose 55 percent at private colleges and 32 percent at public colleges, while family income fell 2 percent during the same period. As a result, the typical college student now receives some sort of financial aid, usually in the form of

loans. Loans comprised 55 percent of all financial aid in 1994-1995—up from 20 percent in 1974….FACT: A two-year technical education is less expensive. Tuition and fees for a two-year associate's degree are at most half that of a four-year degree. And students who choose this route are able to enter their career field sooner" (Gray, pp. 25, 28, 1997). Do you emphasize advanced course planning or do you emphasize courses that are not directly related to college preparation but have a direct relationship with career choices?

United States students are ranked high on content knowledge but weak at applying this knowledge to solve problems. Students must be prudent when choosing courses. Half of the students graduating from high school go to a four-year college, and half of those graduate with a degree, and half of those get a job in the field of their degree (Daggett, 1996). Myths have developed with the economy, higher education and the relationship between college degrees and good jobs (Gray, 1997). The economic advantage assumption, or gap between four-year graduates and non four-year graduates is not a guarantor of a higher income.

Industrial/Technology Education

The technical colleges are getting many students who cannot find employment in their university degree and pick up the necessary education for highly skilled jobs. So emphasis today is leaning towards school-to-work programs, internships, and externships. There is no doubt that secondary vocational, industrial, technical, or technology education programs are part of the field that prepares individuals for work (Flesher, 1995; Gray, 1997). There can be little doubt that improved technology has become increasingly a major force in determining the nature of society in terms of our life-style, the economic

base of society, industrial productivity, cost and availability of consumer goods, and mankind's relationship to the natural environment (Kiplinger, 1986). Therefore we need a balance of courses and never lose sight of the long-range plan to be a productive member in society.

Selection Process

Dr. Kenneth Gray (co-author of Other Ways to Win, a book about "creating alternatives for high school graduates") gives these tips for parents who want to advise their children on career goals:

> Succeeding in Plan B requires sound secondary-level preparation in school-to-careers programs that give students an academic and technical foundation. These are the tips I give parents who want to know how to advise their children on career goals:
>
> - Focus on postsecondary success, not postsecondary admissions. There's a college out there that will enroll your child. The hard part is making it through a college-level academic program and graduating.
> - If the goal is high-skill, high-wage employment, do not confuse education with skill. This type of employment is highly competitive. Individuals who have the prerequisite occupational skills, not just a bachelor's degree, will have the advantage.
> - Get serious about career exploration. Do not be fooled by the moldy advice that college is the best place to start thinking about careers. First, it's an expensive testing ground. Second, students

who go to college without adequate occupational focus are less likely to graduate and even less likely to end up with commensurate employment if they do graduate.

- Make sure your children get a high school education that prepares them for a clear transition upon graduation. Simply taking courses is not a program of study. Good program examples are vocational-technical education, integrated tech prep and school-to-career activities. Make sure your child takes math and science during senior year so he or she doesn't wind up in remedial education at college.
- Have a Plan B and be open-minded about when Plan B should become part of Plan A (Gray, 1997).

Student Influences

"Of seven studies related to enrollment in a course, twelve different factors were given that have an effect on student enrollment" (Pearson, 1979). These factors or influences in education are divided into three general areas:

- those created outside of school;
- those created by the school; and
- those created by the student's interests.

Examples of influences created outside of school are:

- TV
- Internet

- newspapers
- parents
- friends
- siblings
- relatives, etc.

Examples of in school influences can be:

- teachers
- counselors
- administration
- projects
- course reputation
- course difficulty, and
- department promotion.

Influences by the students' interests will be affected by:

- self-concept
- age
- sex, and
- grade.

The influences as stated above should be rather clear until we get to self-concept; therefore, further clarification is needed.

"As an adolescent you aspire to be what you perceive others who are important to you want you to become" (Huang, 1994, p. 2). The influence of significant others and the

estimates that the individual has of his ability subsequently affect education and occupational aspirations. In addition, levels of aspiration influence levels of educational attainment, which in turn affect levels of occupational attainment (Huang, 1994). The family is an interconnected relationship and as a system in which each family member affects and is affected by the others. The importance placed on money, religion, prestige, status, or service to others reflects the way the family rules and myths have operated to define and sustain family values and traditions (Huang, 1994). This is perhaps the most important variable to consider when children begin to choose educational courses to achieve their self-value in a career. As a student is going through high school a separation of the family and an establishment of individual autonomy occurs. This issue of separation may perhaps be the greatest influence on the ability of an individual in leaving home and establishing a separate identity in the world of work (Huang, 1994).

As teenagers it is apparent that each student is striving for significance and individuality, which has its implications for course decision selection. “Again, the interrelatedness of identity formation, psychological separation and career decision making were noted as essential tasks for the adolescents and for the families” (Zingaro, 1983). In 1991 Marsh and Yeung argued that the self-perceived worthiness of performance expectations in relation to personal and external standards is critical in motivating and sustaining performance (1997). On the basis of self-concept findings they hypothesized that self-concept responses should be effective in predicting future choice behavior and proposed the selection of specific school objectives as a particularly relevant area in which to evaluate these predictions. As Earl Nightingale elegantly states “You are what you think about” (1978). Meaning that the concept in which you see

yourself is important as both an outcome and as a mediating variable that helps to explain other outcomes.

This is great for directed individual thinkers but most high school students do not have a clue what they want to do with their life. The researcher had observed that students tend to wander until being directed by other influences towards some goal. Courses chosen relate to the value students place on specific outcomes and expectations of success in relation to their self-concept of ability (Marsh & Yeung, 1997). From this, one can infer that students may prefer a program that will reinforce their self-image.

When there is a similarity in the influences in career selection as in course selection, then those similar influences would be very important in an effective marketing plan. “Students ranked career choice (according to mean scores) their highest six influences, in order of greatest impact, as:

1. potential for high salary,
2. mother
3. challenge offered by career
4. trips to 4-year college or university
5. father, and
6. older brother or sister” (Newcomb, 1992).

Perrgoue (1965) emphasizes that historically 93% of ninth grade students surveyed showed their first choice in enrolling for a course was because they felt there was a need for that course. By the next year their first choice in course selection was due to what they like to do as class projects having the most influence.

High school students are not definite about what career routes they will pursue, and are easily influenced to change future career interests (Hatzios, 1996). All students, both those enrolled and those not enrolled in technology education make up the target market for the technology education program. They need to be informed and influenced by benefits (both tangible and symbolic) of the program or courses (Hatzios, Heath-Camp, & Camp, 1992). Once a positive influence on students to enroll in the technology education program is established, this will result in a positive influence toward peer group, parents, counselors, and teachers. However, we must continue to develop effective promotional strategies and program designs to keep them in the program (Hatzios, 1996). One recommendation for an effective promotional campaign should be designed for students. The promotional campaign should also incorporate in its design the most tangible and symbolic attributes of the program. These attributes are:

- the “friendly”
- the “work experience”
- the “modern”
- the “training for employment”
- the “wants-to-be-rich” (Hatzios, 1996).

A similar study by Moschell (1994) in the Kenosha Unified School District attempted to determine why more students were or were not enrolled in the elective technology education classes. The Kenosha study surveyed 1026 students having the opportunity to be exposed to technology education at the seventh, eighth, and ninth grade levels (Moschell, 1994). Evaluation of the survey results identifies factors that need to be clarified, reinforced, or in some other way expanded. Therefore, utilizing results from

both of these surveys will give a clearer picture. When the outcomes of both studies are compared conclusions may be drawn from parallel and/or conflicting data.

Summary

Gray (1997) reiterates that ultimately in the end, parents will be part of the decision of what is best for their child, and they deserve to know the facts. Some may not like the news they hear, but in the end most will welcome the truth. The “truth” for each student is different. Therefore, the information in this survey will help Arrowhead parents through a marketing plan know the facts when advising their son or daughter.

Chapter 3

Methodology

Introduction

Industrial Arts education has evolved into Technology Education, purposely trying to meet the needs of people and industry. As this evolution continues to grow to meet the needs of youth and society, changes will occur. When this growth occurs so must the curriculum objectives, content, and learning activities. We must thereby inform the people of the current diversity and growth that continually takes place in high school education programs and specifically the Technology Education department.

Description of Subjects

These surveys were administered to three freshman technology education introductory classes and two sophomore metals classes. Approximately 200 students were enrolled at the freshman level and of those 55 were surveyed.

Selection of Subjects

The sophomore survey was given to two of the five sophomore level courses in Technology Education. The results would then be compiled for the development of a financially prudent marketing plan and then targeted to the greatest audience(s) of influence.

Process

The process for the research was done in this sequential manner:

- Review of literature,
- Pilot survey,

- Survey,
- Second survey,
- Analyze the results,
- Report the results, and
- Draw conclusions.

Methodology

The purpose was to yield information about student's perception of influence in course selection at the high school level, specifically the first couple of years. The first survey was a pilot test with one class to see whether an understanding of the instrument was clear. It gave the students a list of influences and asked them to rank them in order from most influential to least influential.

Moschell (1994) was limited in the results of his study because students had to rank their importance levels only according to the given instrument. The pilot study given concurred with his results, therefore, a second instrument was designed and given so it would include all of the influences a student could think of and write down. Since the Kenosha surveyed 1026 students and the pilot study revealed similarities it was not necessary to duplicate that study. It was more important to continue the research utilizing the results from both surveys for drawing even more accurate conclusions.

Data Analysis

The results of the pilot study were favorable and interesting, but a couple of students added comments that were extraneous. These unknown variables would affect the validity of the research. Consequently, based on these responses the survey

instrument was tweaked for the next two classes so it would not be limiting the student responses. The second survey asked two open questions which addressed two key issues of influences on course selection before entering high school, and selecting courses during high school for their sophomore year. Then a third and different survey at the sophomore level was administered that would check to see if the students were getting the courses they originally wanted and signed up for, or were there other mitigating factors affecting the students' course registration.

Limitations

Limitations to the first pilot study were that it did not allow for students to input their own variables into the instrument. Other limitations could be:

- asking the student to think and respond from their feelings four months prior to the survey,
- this was not a longitudinal study over time,
- some of the results are open to interpretation,
- the study was limited to the Arrowhead School district, and to the Technology Education classes,

thus, some of the results may not be useful in generalizing to other districts.

Chapter 4

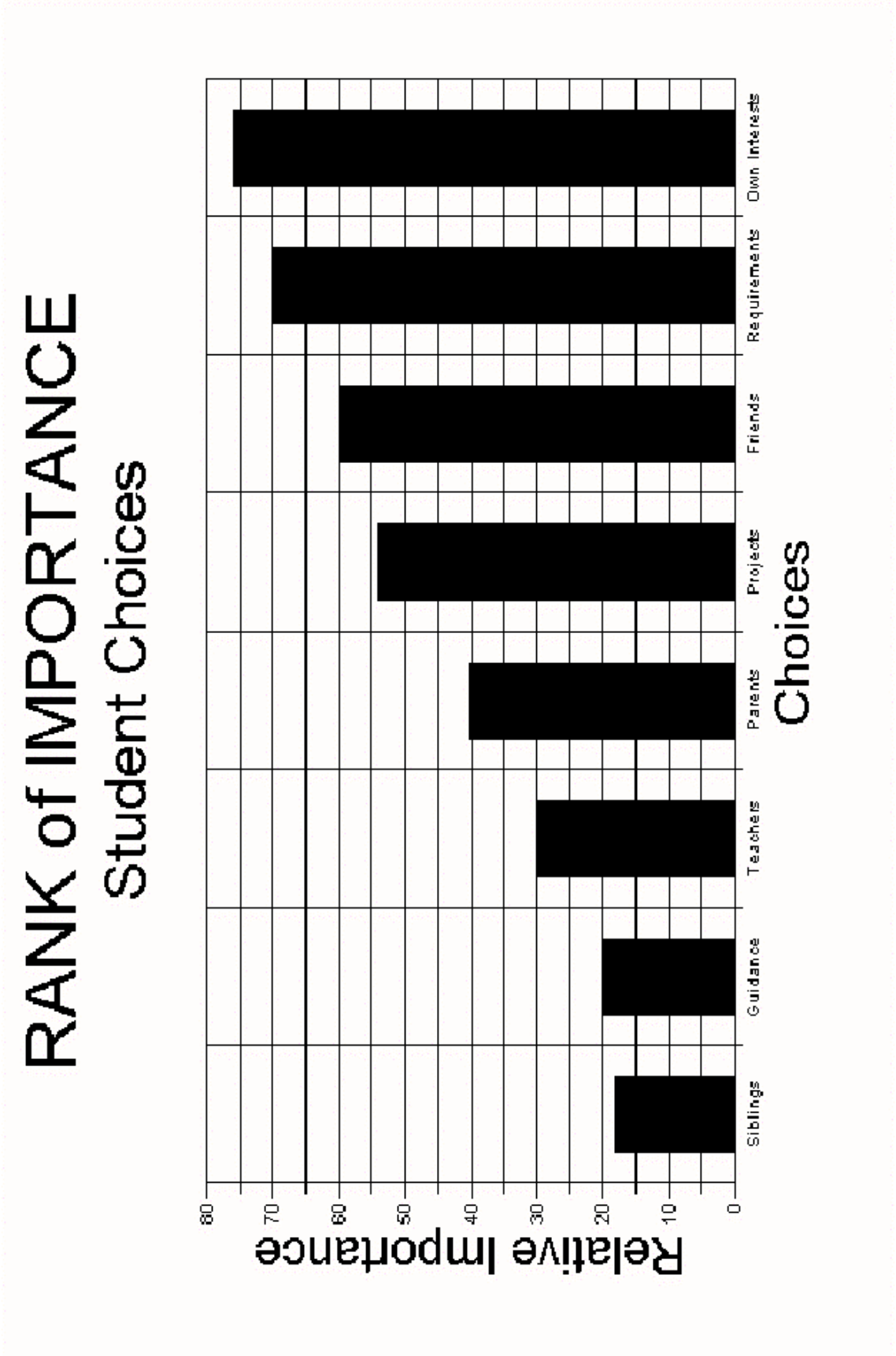
Results

Introduction

Three instruments were used to compile the data. A pilot instrument was administered to one freshman class. An improved instrument was administered to two different freshman classes. A third instrument was given to two sophomore classes.

Pilot Study

The ranking of influencing factors in the pilot study revealed the necessity of offering students the opportunity to name their influencing factors (Appendix A). The pilot study was given to fourteen students, but two student's data sets were unusable. They were not usable because the students chose to write comments that their most influencing factors were not on the sheet as a choice so they added them in on their own. Conceding, the type of instrument used in the pilot study would be easier for students to put more emphasis in ranking the influencing factors. The pilot study results described the student's own interests, together with requirements, and friends, guide course selection. Projects and parents have some influence, whereas, teachers, guidance counselors, and sibling's influence is considerably less. The Rank of Importance graph that follows gives a good visual of the results.


RANK of IMPORTANCE
Student Choices
Relative Importance
0
10
20
30
40
50
60
70
80
Siblings
Guidance
Teachers
Parents
Projects
Friends
Requirements
Own Interests
Choices

The top five influential factors for entering freshman are: projects, personal interests, new fun experiences, lab/activities related class, and parents. This represents 68% of what is helping shape the students' decisions (Appendix B).

Influencing factor impact changes from freshman course selection to sophomore course selection. As they select and/or review their courses for the following year, the most influential factors are personal, teachers, projects, career, and parents. These five factors represent 70% of the impact upon the student course selection process. The related Freshmen and Sophomore Influences table data is derived from the freshman and sophomore Course Selection Influences data (See Appendix C).

FRESHMAN INFLUENCES

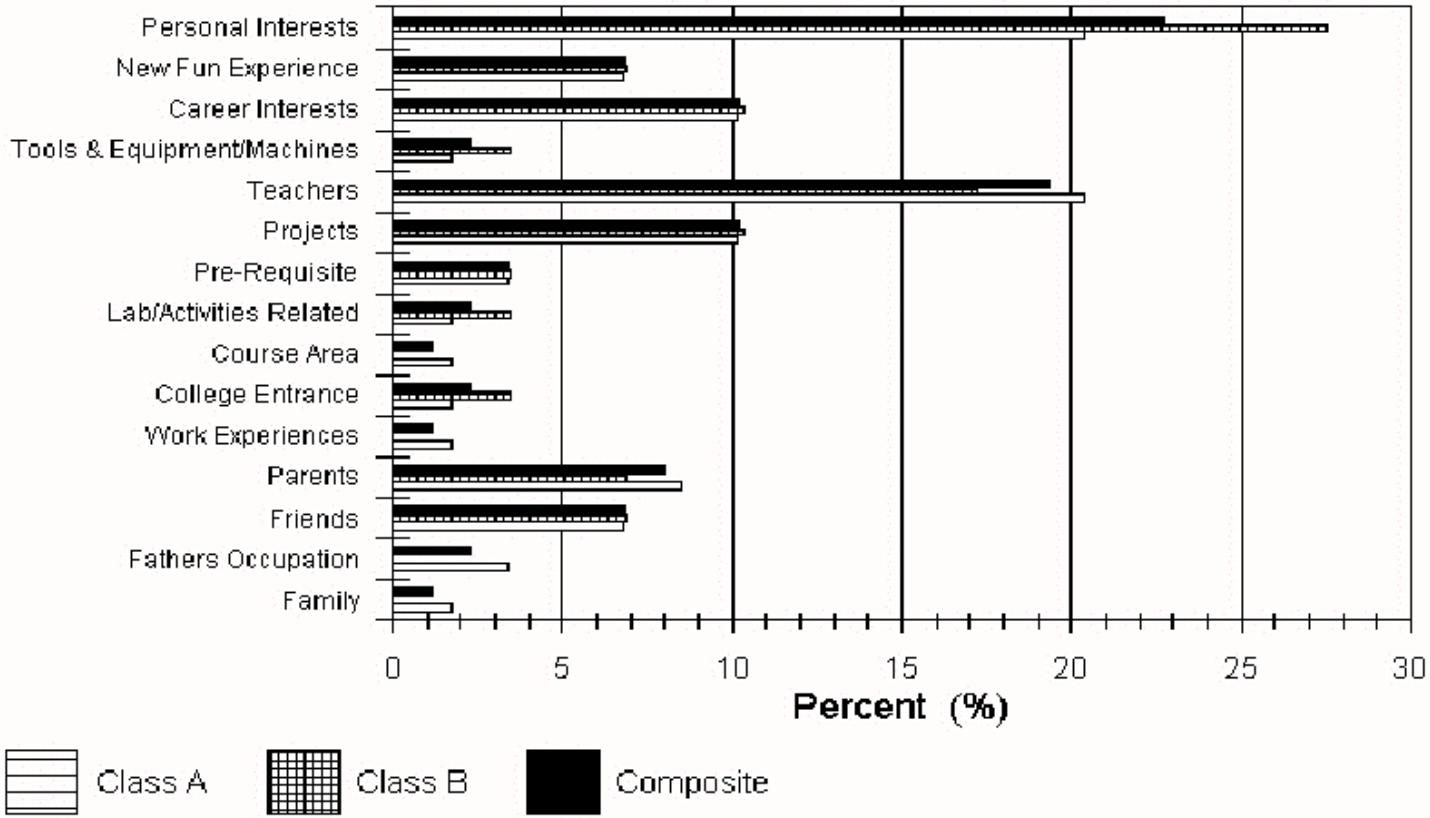
Influencing Factor	Composite Percent
Projects	18.33
Personal Interests	14.44
New Fun Experience	13.33
Lab/Activities Related	11.11
Parents	10.56
Friends	7.78
Tools & Equipment	5.56
Brother	5.00
Career Interests	3.33
Past Experiences	3.33
Pre-Requisite Class	2.78
H. S. Vocational Requirements	1.11
Father's Occupation	1.11
TV	0.56
Opposite Sex	0.56
School Brochure/Orientation	0.56
Teachers	0.56

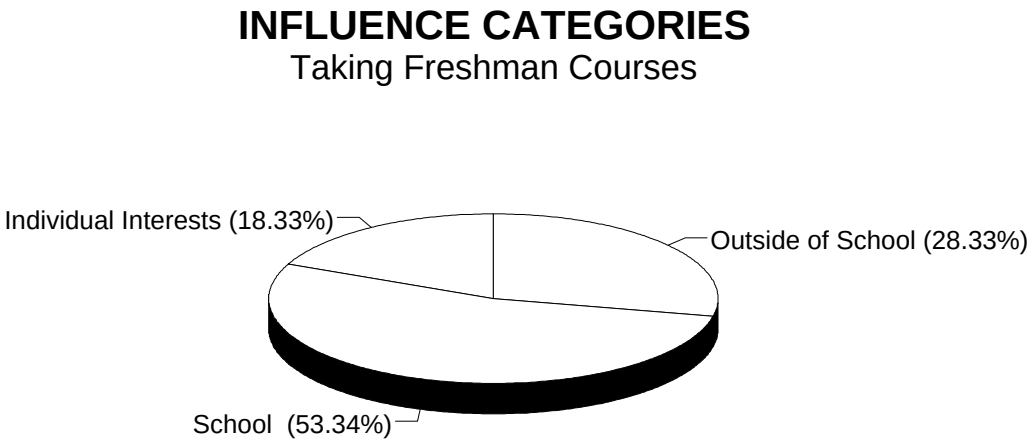
SOPHOMORE INFLUENCES

Influencing Factor	Composite Percent
Personal Interests	22.73
Teachers	19.32
Projects	10.23
Career Interests	10.23
Parents	7.95
Friends	6.82
New Fun Experience	6.82
Pre-Requisite	3.41
College Entrance	2.27
Father's Occupation	2.27
Lab/Activities Related	2.27
Tools & Equipment/Machines	2.27
Course Area	1.14
Work Experiences	1.14
Family	1.14

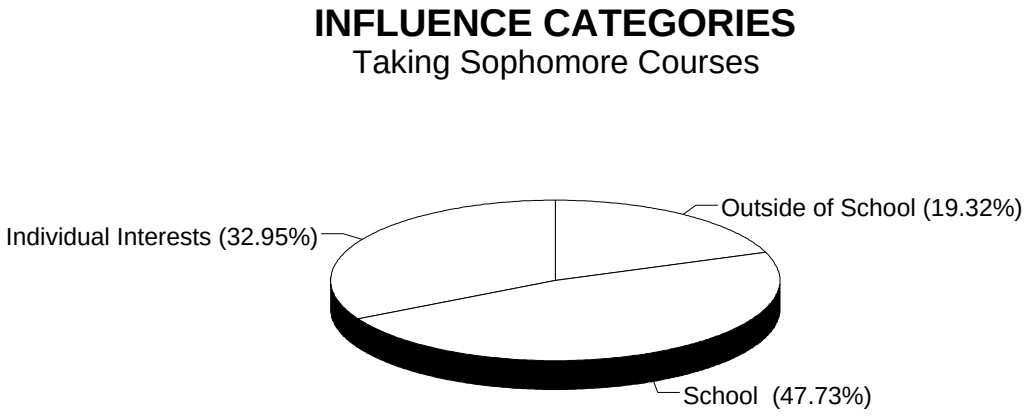
COURSE SELECTION INFLUENCES

Taking Sophomore Courses





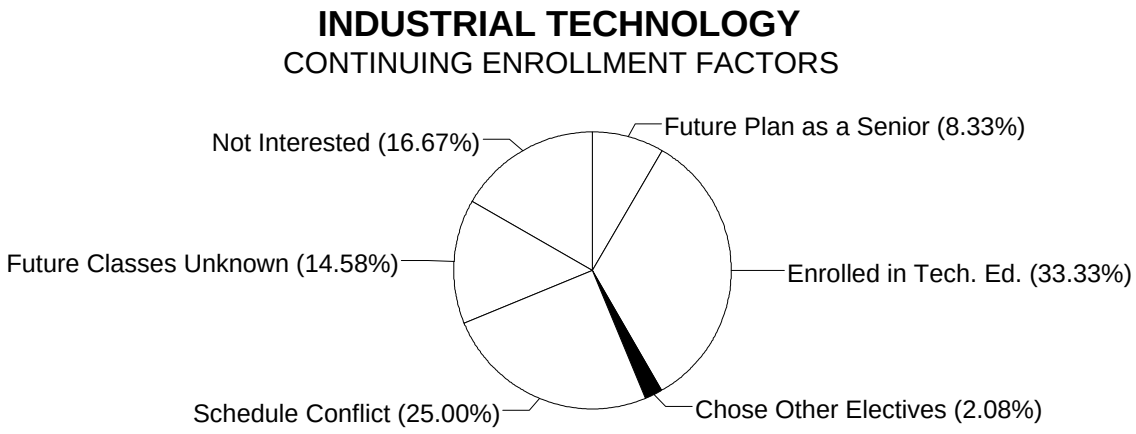
When categorizing the influencing factors into three areas it becomes apparent that school influencing factors play the greatest role in determining the courses a student enrolls. Personal and outside of school influencing factors summed make up the other half of the determining course selection factors.



Individual interests begin to play a much larger role in course selection as the student progresses through school and gains experience.

Continuing Enrollment

As sophomores register to get courses for their junior year, 33% sign up for at least one Technical Education course. Eight percent (8%) decide to enroll as seniors. Twenty five percent (25%) of the students are unable to continue enrollment in Technical Education courses because of schedule conflicts.



This graph's data was derived from Appendix D.

Chapter 5

Conclusions

Based upon the incoming freshman survey, there were several factors identified that influence the selection of Industrial Technology Education courses. The top five influential factors are projects, personal interests, new/fun experiences, related laboratory activities, and parents.

For those freshmen that continue to take Industrial Technology Education courses, the top five influential factors are personal interests, teachers, projects, career interest, and parents. The common factors between these two surveys are projects, personal interests and parents.

The combination of projects and personal interests represent an impact of 33% in both surveys. The impact of parents fell from 11% to 8%. The impact of teacher influence climbed from 0.56% to 19%. Considering the top four influential factors from both surveys, results from the freshman study indicated a combined school factor of 44% and an individual factor of 14%. The results from the sophomore study indicated a combined school factor of 30% and an individual factor of 33%. This indicated a definite shift from school factor influence towards personal factor influence.

Although counselor impact was listed on the pilot study, students felt that counselor impact was negligible. Therefore, counselor impact was not listed, nor recognized, as an influential factor.

The Arrowhead Fall 2000 enrollment figures indicated 33% of the incoming freshman would be taking Industrial Technology Education courses, which is similar to the Freshman Class of 1999 figures. The three general areas of influence are:

- those created outside of school, those created by the school, and
- those created by individual interests.

The combination of school and outside of school factors diminished by 15%, the increase going to the individual interest factors. The breakdown of the individual interest factors becomes personal factors, 23% and career factors, 10%. The influential impact of individual factors and outside of school factors switched positions. Even though the individual interest category increased, the school category continued to have the greatest influence.

Based upon the incoming freshmen survey, 53% of the influences come from the school factor. The top three items of the school factor are:

- projects 18%,
- new/fun experiences 13%, and
- lab activities 11%.

The factors of the individual interest component of the Sophomore Influence Categories are:

- career interests 10%, and
- personal interests 23%.

The Continuing Enrollment survey points out the fact that 25% of the students cannot continue taking Industrial Technology Education courses because of course

scheduling conflicts. The magnitude of the complaint identifies this as an extremely important problem, one that needs to be resolved. According to Waukesha County School to Work Partnership High School Graduate Follow-Up Survey of 1996 graduates, 13.5% of the Arrowhead students reported scheduling conflicts did not permit them to enroll in vocational/technical courses of their choice.

The United States wants educational institutions to provide educated people, not just in content knowledge, but able to use that knowledge to solve problems. Technology Education promotes the union of content knowledge with the application of process to extend human capabilities. We must not eliminate one-fourth of the people who are currently interested in Industrial Technology Education coursework, but cannot register because of course conflict. The emphasis upon college baccalaureate degrees is fine as long as we do not mistake education for high skill employment and do not assume commensurate employment upon graduation. Those individuals who have the prerequisite occupational skills and are able to problem solve—combined with a Baccalaureate degree—will have the advantage when competing in the world market.

Recommendations

Several things might be accomplished to increase the number of students that enroll in the Industrial Technology courses:

- Develop a brochure specifically for the incoming freshmen, with a slick design, promoting projects, new fun experiences, lab activities.
- Video presentations of verbal and pictorial project descriptions, made by instructors and previous students, presented in a format that is fun and

exciting, could be used “on the road” as part of a “dog and pony” show, visiting the various K-8 feeder grade schools.

- Tabletop equipment might be displayed, as well as demonstrated, during these same visitations, to “wow” curiosity and eliminate fear and inhibitions, especially for the potential female student.
- Expansion of cable educational programming and the Arrowhead Industrial Technical Education home page needs to be explored.
- Open houses, directed toward parents and students alike, could be used to illustrate the potential of completing the Industrial Technology curriculum. The sophomores need to see and experience that which they may be doing as it relates to their careers.
- Related business tours of local industry as well as talks by industry representatives would reinforce the career interest and personal interest of the more advanced students. A sampling of these same students might be part of the group that tours the grade schools. School/work relationships might be developed with these same industries, providing part time jobs for the students, and prospective employees for the employers.

The problem of students being unable to register for the Industrial Technology course(s) of choice needs to be resolved. Therefore, a study to identify the source of the course registration conflicts, and also to resolve said conflicts needs to be accomplished.

A recommendation for research would be to continue checking the major influence factors through high school and into the next endeavor of the student’s life. Do

the student influences continue towards independence or is there a change? If there is a change do they revert back to similar influences when they were entering high school? Are there possibly different levels of influence factors based upon students going to college compared to those going to work? Are they maybe the same? A second recommendation would be to do the same survey in a smaller school district.

Summary

Assuming the aforementioned issues come to a successful fruition, more students will enjoy the educational process. More students will be successful. More students will develop ownership of and pride in their work. More students will find fulfillment in their accomplishments. After the final bell, the student must do something they enjoy and have accomplished proficiency to leave their legacy in life. The cycle begins again among parents, children, and society.

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APPENDIX A

PILOT STUDY DATA

Student	A	B	C	D	E	F	G	H	I	J	K	L	Sum of Individual Ranking Points	Relative Importance
Siblings	8	7	4	8	4	6	8	6	8	7	8	8	82	18
Guidance	7	4	6	7	8	8	7	8	7	6	6	6	80	20
Teachers	5	2	5	5	7	7	5	7	5	8	7	7	70	30
Parents	6	6	7	4	6	5	6	5	3	4	4	4	60	40
Projects	1	3	8	3	5	1	3	3	4	5	5	5	46	54
Friends	2	5	2	6	1	2	4	4	6	3	2	3	40	60
Requirements	4	8	1	1	2	4	2	1	1	2	3	1	30	70
Own Interests	3	1	3	2	3	3	1	2	2	1	1	2	24	76

APPENDIX B

Freshman Course Influence Data

Influencing Factor	Class A	Class A %	Class B	Class B %	Composite	Composite %
Brother	6	4.76	3	5.56	9	5.00
Father's Occupation	2	1.59	0	0.00	2	1.11
Friends	8	6.35	6	11.11	14	7.78
Parents	12	9.52	7	12.96	19	10.56
Past Experiences	5	3.97	1	1.85	6	3.33
TV	1	0.79	0	0.00	1	0.56
H. S. Vocational Requirements	1	0.79	1	1.85	2	1.11
Lab/Activities Related	13	10.32	7	12.96	20	11.11
New Fun Experience	14	11.11	10	18.52	24	13.33
Pre-Requisite Class	4	3.17	1	1.85	5	2.78
Projects	25	19.84	8	14.81	33	18.33
School Brochure/Orientation	1	0.79	0	0.00	1	0.56
Teachers	1	0.79	0	0.00	1	0.56
Tools & Equipment	10	7.94	0	0.00	10	5.56
Career Interests	4	3.17	2	3.70	6	3.33
Opposite Sex	1	0.79	0	0.00	1	0.56
Personal Interests	18	14.29	8	14.81	26	14.44
Totals	**126**		**54**		**180**	

APPENDIX C

Sophomore Course Influence Data

Influencing Factor	Class A	Class A %	Class B	Class B %	Composite	Composite %
Family	1	1.69	0	0.00	1	1.14
Father's Occupation	2	3.39	0	0.00	2	2.27
Friends	4	6.78	2	6.90	6	6.82
Parents	5	8.47	2	6.90	7	7.95
Work Experiences	1	1.69	0	0.00	1	1.14
College Entrance	1	1.69	1	3.45	2	2.27
Course Area	1	1.69	0	0.00	1	1.14
Lab/Activities Related	1	1.69	1	3.45	2	2.27
Pre-Requisite	2	3.39	1	3.45	3	3.41
Projects	6	10.17	3	10.34	9	10.23
Teachers	12	20.34	5	17.24	17	19.32
Tools & Equipment/Machines	1	1.69	1	3.45	2	2.27
Career Interests	6	10.17	3	10.34	9	10.23
New Fun Experience	4	6.78	2	6.90	6	6.82
Personal Interests	12	20.34	8	27.59	20	22.73
Totals	**59**		**29**		**88**	

APPENDIX D

Industrial Technology
Continuing Enrollment Factor Data

Future Plan as a Senior	4		Woods	9
Enrolled in Tech. Ed.	16		Auto	3
Chose Other Electives	1		Drafting	1
Schedule Conflict	12		Metals	3
Future Classes Unknown	7	Enrolled in Tech. Ed.		16
Not Interested	8			

APPENDIX E

Pilot Study

Please rank the following factors in the order of importance to you when you were signing up for Industrial Technology Education courses. Use "1" to identify the most important influential factor, and "8" to identify the least important influential factor.

_____	Parents	_____	Guidance
_____	Projects	_____	Own Interests
_____	Teachers	_____	Requirements
_____	Friends	_____	Siblings (Br./Sis.)

Course Selection Influences

Similar questions were posed to freshmen, on the same day, after they registered for sophomore classes.

Incoming Freshman Class

Please identify all the important factors that influenced you when you signed up for Industrial Technology Education classes your freshman year. List them in order, the most important first, and the least important last.

Sophomore Class Registration

Please identify all the important factors that influenced you when you signed up for Industrial Technology Education classes for your sophomore year. List them in order, the most important first, and the least important last.

Continuing Enrollment Questionnaire

Please identify the Industrial Technology Education class that you have signed up for next semester. If you did not sign up for an Industrial Technology Education class next semester, please identify the most important reason for not doing so.

APPENDIX F

ARROWHEAD HIGH SCHOOL
4-YEAR PLANNING WORKSHEET

Name_____Career Goal_____
Post-High School Plans _____
Educational Career Plan
Arrowhead requires a minimum class load of 7/ maximum of 8 classes.

.

Freshmen Schedule

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Sophomore Schedule

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Junior Schedule

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Senior Schedule

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

ARROWHEAD GRADUATION REQUIREMENTS

English	8 credits	Physical Education	3 credits
Social Studies	6	Health	1
Science	6	Vocational Education	2
Mathematics	4	Electives	18 (min)
Fine Arts	2	**Total**	**50**

Total Credits needed for graduation is 50.

Student signature _____

Parent signature _____

Counselor signature _____

APPENDIX G

2000 CURRICULUM GUIDE

ARROWHEAD HIGH SCHOOL GRADUATION REQUIREMENTS

EIGHT (8)	SEMESTERS OF ENGLISH (MUST INCLUDE SPEECH AND ENGLISH 11-1 & 2)	8
SIX (6)	SEMESTERS OF SOCIAL STUDIES (MUST INCLUDE SOCIAL STUDIES 9/ GOVERNMENT AND U.S. HISTORY 1 & 2)	6
SIX (6)	SEMESTERS OF SCIENCE (MUST INCLUDE TWO SEMESTERS OF A NATURAL SCIENCE AND TWO SEMESTERS OF A PHYSICAL SCIENCE	6
FOUR (4)	SEMESTERS OF MATHEMATICS	4
TWO (2)	SEMESTERS OF VOCATIONAL EDUCATION (BUSINESS, FAMILY AND CONSUMER, OR TECHNOLOGY EDUCATION)	2
THREE (3)	SEMESTERS OF PHYSICAL EDUCATION	3
ONE (1)	SEMESTER OF HEALTH	1
TWO (2)	SEMESTERS OF FINE ARTS	2
	ADDITIONAL CREDITS	18
FIFTY (50) CREDITS		50

COURSES GENERALLY RECOGNIZED AS ACADEMIC UNITS FOR COLLEGE ADMISSION PURPOSES WILL BE MARKED WITH AN ASTERISK (*) IN THE COURSE DESCRIPTIONS. THE NUMBER AND DESIGNATION OF ACADEMIC UNITS VARIES FROM COLLEGE TO COLLEGE.

HIGH SCHOOL GRADUATION REQUIREMENTS[a]

Total # of Required Credits (PRIOR)	Total # of Required Credits (NEW)	Effective Date of New Require-ments	Change in Total # of Required Credits (CHANGE)	Requirements[b] in Core Subjects				Gradua-tion Rate (1986)		Achieve-ment Test Data (1987)	Exit Exam		
				Subject[c]	Prior	New	Change	Rate	Rank[d]	Rank[e,f]	Yes	Year	No
WISCONSIN													
Local option	13	1989	13	English Math Science Social Studies CORE OTHER TOTAL	Local option	4 2 2 3 11 2 13		86.3	7	1[e]			X

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