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Employability Expectations and Hiring Trends of High School Graduates by Dubuque County Manufacturers

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Abstract

Little research has been done to show skill requirements and employability trends for high school graduates in a specific local industrial sector, such as manufacturing. It was in an effort to better equip Dubuque's students with the skills they need for employability and success in the workplace, that this research has answered the question: What are the employability expectations and hiring trends of high school graduates by Dubuque County manufacturers?

EMPLOYABILITY EXPECTATIONS AND HIRING TRENDS OF HIGH SCHOOL GRADUATES BY DUBUQUE COUNTY MANUFACTURERS

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by

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CHAPTER I.

INTRODUCTION

In the field of education, there has been much discussion relating to the skills that high school graduates need to be successful upon graduation. There has been some disagreement as to the types of skills needed for employability. Many educators believed academic and technical skills are the most important skills according to employers. Yet, several research projects conducted have found otherwise.

Beginning in the late 1980s, three major research studies were conducted exploring the required skills people would need in the workplace. The major studies: Workplace Basics: The Skills Employers Want (Carnevale, Gainer, and Meltzer, 1988), The Secretary's Commission on Achieving Necessary Skills Report (SCANS, 1990), and a research project titled Workforce 2000 (Hudson Institute, 1987) resulted in very similar findings. These research studies were similar in that they concluded that workers would need to be equipped with increased skill levels in order to be successful in the future workforce of America. Among the many reported required skills were the ability to communicate, the ability to work with others in teams, and the ability to learn.

Workforce 2000, SCANS, and Workplace Basics are at the forefront of discussion as they relate to technology education teachers. These studies were very broad in scope, and incorporated data from employers of all sectors of industry across the country. The results of these studies were widely published. The similarities among the findings of these studies caught the attention of both the educational community and the business world.

As indicated in the Iowa Administrative Code (IAC, 1994), technology education teachers are asked to help students become technologically literate and to equip students with necessary skills to cope with, live in, work in, and contribute to a highly technological society. Specifically, technology education teachers in Dubuque, Iowa have been asked, in part, to equip students with skills to enter the field of manufacturing in and around Dubuque, Iowa. The skills referred to in the previously mentioned research suggested that skills are not limited to academic and/or technical skills. According to this research, there is a need to emphasize skills other than academic and/or technical skills, which are also required by employers, including those employers in the manufacturing industry.

Statement of the Problem

Little research has been done to show skill requirements and employability trends for high school graduates in a specific local industrial sector, such as manufacturing. It was in an effort to better equip Dubuque's students with the skills they need for employability and success in the workplace, that this research has answered the question: What are the employability expectations and hiring trends of high school graduates by Dubuque County manufacturers?

Assumptions of the Study

There were three assumptions to this study. The first assumption was that a certain population of students graduating from Dubuque high schools would enter the manufacturing field. The second assumption was that workers would need different skills to be employable in the future. The final assumption was that foundation

skills/qualities and competencies from the SCANS Report were a representative set of skills employers may require of high school graduates.

Research Questions

In an attempt to understand the skill requirements for high school graduates and the hiring trends of Dubuque County manufacturers, there were six questions that were answered as the result of this study:

1. How do Dubuque County manufacturers currently rank the importance of the foundation skills and qualities identified by SCANS?
2. How do Dubuque County manufacturers predict they'll rank the importance of the foundation skills and qualities identified by SCANS in the year 2005?
3. How do Dubuque County manufacturers currently rank the importance of the competencies identified by the SCANS Report?
4. How do Dubuque County manufacturers predict they'll rank the importance of the competencies identified by the SCANS Report in the year 2005?
5. Are Dubuque County manufacturer's currently hiring high school graduates?
6. Are Dubuque County manufacturer's projected to hire high school graduates in the next year, the next five years, and in the next ten years?

Delimitations

This study was delimited in three specific ways (a) to the manufacturers (b) in the Dubuque County of Iowa, (c) that employ 20 or more individuals.

Definition of Terms

The following terms were defined to clarify their use in the context of this study:

- Competencies: Skills identified as necessary by the SCANS Report for success in the workplace.

- Foundations: Skills and qualities identified as necessary by the SCANS Report that underlie SCANS competencies.
- Manufacturer: A company in the business of utilizing tools, processes, and machines that transform materials or substances into new products.
- Qualities: An individual's characteristics or attributes.
- Skill: An individual's ability or proficiency.
- Teams: A group of individuals working together for a common purpose, who must rely on each other to achieve mutually defined results (Capezio, 1996).
- Technology Education: An educational program that helps people develop an understanding and competence in designing, producing, and using technology products and systems, and in assessing the appropriateness of technological actions (Wright, Israel, and Lauda, 1993).

CHAPTER II.

REVIEW OF RELATED LITERATURE

The skills workers are predicted to need, are identified by the three studies titled Workforce 2000, Workplace Basics: The Skills Employers Want, and The Secretary's Commission on Achieving Necessary Skills (SCANS). These studies suggest high school graduates need to be equipped with basic skills making them employable in the changing American workforce (Hudson Institute, 1987; Carnevale, et. al, 1990; and SCANS, 1991). The following is a brief synopsis of each of these studies and their respective findings.

In 1987, the study titled Workforce 2000 was conducted and published by the Hudson Institute - - a study of the changes that were taking place in the American workforce. Nearly 80,000 copies of this study were sold. The Hudson Institute is credited with bringing the "skills gap" to the national agenda by making several predictions about our workforce. One prediction being that the level of skill required of workers would need to increase. They predicted there would be fewer jobs available to people that could not read, write, calculate (math), or follow direction.

Workplace Basics: The Skills Employers Want, was published by Carnevale, Gainer, and Meltzer. This document is a summary of workplace skills research jointly conducted by the American Society for Training and Development (ASTD) and the U.S. Department of Labor. ASTD, contracted by the U.S. Department of Labor, carried out the research into workplace skills. Carnevale, employed by the ASTD and part of the research team, stated in this summary that the workplace was changing and so were the

skills that employees must have in order to change with it. More specifically, Workplace Basics concluded that workers not only need the basic skills of reading, writing and computation, but a range of skills including the ability to learn, communicate, think creatively, solve problems, set goals, work in teams, and display organizational skills in order to be effective in the workplace.

The Secretary's Commission on Achieving Necessary Skills (SCANS) conducted research in 1990 to examine workplace requirements and to predict whether or not the present and future workforce was capable of meeting those requirements. The SCANS Report found that workplaces require workers who have a solid foundation of skills in basic literacy and computational skills, in thinking skills that can put their knowledge to work, and in the personal qualities that make these workers dedicated and trustworthy employees. However, SCANS research has shown this foundation alone to not be enough. The workplace also requires competencies such as the ability to manage resources, to work well with others and in teams, to acquire and use information, to master complex systems, and to work with a variety of the available technologies. The foundation of skills and qualities coupled with the competencies, collectively form "workplace know-how." Unfortunately, most schools do not teach to the types of skills or competencies that result in high school graduates who have "workplace know-how."

More specifically, the five competency areas identified in the SCANS Report, which are vital to workplace success include: (a) Resources - - the ability to identify, organize, plan, and allocate resources, (b) Interpersonal - - the ability to work with others, (c) Information - - the ability to acquire and use information, (d) Systems - - the ability to

understand complex inter-relationships, (e) Technology - - the ability to work with a variety of technologies. In addition to these five competencies, the SCANS Report identified three foundations associated with the five competencies. This foundation consists of skills and qualities needed to succeed in the workplace, and serve as a foundation upon which to build additional skills. These skills underlie the competencies outlined in the SCANS Report. The three foundations are Basic Skills, Thinking Skills, and Personal Qualities.

Looking at the three foundations in greater detail, the Basic Skills include reading, writing, arithmetic/mathematics, listening, and speaking. Thinking Skills include: creative thinking, decision making, problem solving, seeing things in the mind's eye (interpretation of information), knowing how to learn, and reasoning. Personal Qualities include responsibility, self-esteem, sociability, self-management, and integrity/honesty (SCANS, 1990).

SCANS went even further, and defined each skill under each foundation. Under the Basic Skill Foundation: (a) Reading - interprets written information in manuals, graphs and schedules, (b) Writing - able to communicate thoughts, ideas, information and messages in writing, (c) Arithmetic/Math - performs basic computations as well as uses a variety of math techniques to solve problems, (d) Listening - receives, interprets and responds to verbal messages and cues, (e) Speaking - organizes ideas and communicates orally.

There are six skills listed in the Thinking Skills Foundation. In this foundation: (a) Creative Thinking - generates new ideas, (b) Decision Making - specifies goals,

constraints, generates alternatives, considers risks, and evaluates and chooses best alternative, (c) Problem Solving - recognizes problems and devises and implements plan of action, and (d) Seeing Things In the Mind's Eye (Interpretation of Information) – organizes and processes symbols, pictures, graphs, objects and other information, (e) Knows How to Learn - uses efficient learning techniques to acquire and apply new knowledge and skills, (f) Reasoning - discovers a rule or relationship and applies it when solving a problem.

And finally, there are five qualities listed for the Personal Qualities foundation. Included in this foundation are: (a) Integrity/Honesty - chooses ethical courses of action, (b) Responsibility - exerts a high level of effort and perseveres towards goal attainment, (c) Self-Esteem - believes in own self-worth and maintains a positive view of self, (d) Sociability - demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings, (e) Self-Management - assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.

As a result of the findings, SCANS defined the skills needed for employment, proposed acceptable skill levels, made suggestions as to effective methods of assessing these proficiencies, and developed a strategy to get the findings to America's schools and businesses. Since the release of the SCANS Report, several programs have been introduced to implement the recommendations. Tech Prep was initiated, with programs in Texas, Indiana, and Ohio designed around the SCANS competencies. Several state and local efforts were made across the country with the intent of strengthening the connections between school and work. Examples of a few of these state and local efforts

are: The Critical Skills Foundation of Wheaton, Illinois, and from Fort Worth Texas: Project C: Communities, Corporations, Classrooms (Lankard, 1995).

A review of this literature has shown that major research projects were conducted concerning the skills needed in the current and future workplace. The findings of these research projects are similar in the agreement that high school graduates need to possess skills and qualities to insure employability and longevity in the workplace. In Iowa, technology education teachers have been asked to help students become technologically literate and to equip students with necessary skills to cope with, live in, work in, and contribute to a highly technological society (IAC, 1994). The skills referenced in the SCANS Report suggest they are not limited to academic or technical skills. According to the research shown, there is a need to emphasize employability skills and qualities desired by employers, including those employers in manufacturing.

Research conducted in at least two states in the United States, has focused on specific industrial sectors such as manufacturing. ENCCARE (the Eastern North Carolina Consortium for Assistance and Research in Education) sponsored a study by Volk and Peel (1994) of the manufacturing firms in the state of North Carolina. The study was titled "Basic Academic and Vocational Skills Required of Employees With Only a High School Diploma." The purpose of the study was to investigate basic academic and technical skill requirements of high school graduates in the state of North Carolina.

The ENCCARE study answered the following questions: "What are the projected hiring trends for individuals with only a high school diploma? What types of skills do

manufacturing firms require of high school graduates?" The data for this research was gathered through means of a survey instrument sent to North Carolina manufacturers who employed more than 500 people (Volk and Peel, 1994).

The findings of the ENCCARE study indicated hiring trends of high school graduates would remain constant in the future. The study found the majority of employees to be high school graduates, and that high school graduates could fill the majority of the positions. The study also found manufacturers in North Carolina ranked interpersonal skills such as working as a member of a team, higher than academic and technical skills.

A similar study was conducted by Borchers and DeLeon (1998) to investigate the current and projected employment tendencies for high school graduates by manufacturers in Texas. A survey instrument was sent to the human resource department of 210 Texas manufacturers that employed more than 500 people. The response rate for this study was 80 useable responses of 210, or 38.10%.

The findings of the Texas study were similar to the findings of the ENCCARE study in that (a) manufacturers reported that most of their employees were high school graduates, (b) most of their jobs could be accomplished by high school graduates, and that (c) manufacturers predicted hiring of high school graduates would remain consistent in the future. Group interaction (i.e. ability to work well in teams), employability (i.e. punctuality, reliability), and personal development (i.e. exhibits self-esteem, works towards advancement) were listed as the most important skills.

The skills desired of employees were more basic in nature and less technical. However, this is not an indicator that Texas manufacturers are not concerned with academic and/or technical skills. It was suggested in this study, that, because of a lack of these basic skills, employers are interested in employees that possess a foundation of basic skills that would allow them to learn specific job skills - - employees that know how to learn. This may lead employers to hire employees who are able to work well with others, take direction, and value education and training - - basically flexible employees (Borchers and DeLeon, 1998).

CHAPTER III.

METHODS

Design

To gather information in an attempt to answer the question "What are the desired Employability Expectations and Hiring Trends of High School Graduates by Dubuque County Manufacturers?", a two-part, self-administered, survey instrument was developed (Appendix B). The first section of this instrument included a series of questions designed to assess the current perceived value of each of the foundation skills/qualities and competencies determined by the SCANS report to be necessary for success in the workplace, as well as the predicted value of these skills. The second section of the instrument requested information from the employer regarding employee populations, current tendencies in hiring of high school graduates, and predictions of future hiring of high school graduates. The survey instrument was reviewed by individuals who are responsible for hiring, to insure it is reasonable to request information in such a manner. Internal validity is to be verified by construct validity – the researcher's advisor reviewed the survey instrument.

The Greater Dubuque Development Corporation (GDDC) reported a total of 120 manufacturers in Dubuque County (GDDC, 1999). This study was delimited to manufacturers that employ 20 or more individuals. There were 65 manufacturers in Dubuque County that met this delimitation (Appendix C). Because of the relatively small number of manufacturers in Dubuque County, the survey instrument was distributed to all 65 Dubuque County manufacturers that employ twenty or more individuals. Although

the GDDC has identified 13 separate manufacturing arenas, there was no effort to control for a specific type of manufacturer, since information sought in this research was broad and general in nature, and not specific to any particular manufacturing industry.

The survey instrument was mailed to the highest level of management, as listed by the GDDC, for each of the identified manufacturers, with a stamped, addressed envelope supplied for return. A cover letter explaining the purpose of the study, mailed with the instrument, encouraged response (Appendix A). Two weeks following the first mailing of the instrument, a follow-up instrument was mailed to those who had not responded in round one. After collecting all responses, findings were compiled, response rate reported and statistical information determined.

Procedures

1. Developed survey instrument that will answer the research questions.
2. Developed cover letter for survey instrument.
3. Had people who do hiring read instrument and asked for their reactions to items on instrument.
4. Had advisor review letter and instrument for construct validity.
5. Researched and created a list of all Dubuque County manufacturers that employ 20 or more individuals.
6. Mailed cover letter and survey to each of the Dubuque County manufacturers that employ 20 or more individuals.
7. Collected first round responses.
8. After two weeks, mailed out second round of surveys to those who did not respond.
9. Collected second round responses.

10. Determined response rate.

11. Compiled findings.

12. Presented frequencies for each characteristic listed on instrument.
    (e.g. "x" employers reported reading to be the most important foundation skill)

13. Presented frequencies for each competency listed on the instrument.
    (e.g. "x" employers reported the interpersonal competency to be the most important competency.)

14. Determined rank order of foundation skill importance to manufacturers through use of frequencies.

15. Determined rank order of competency importance to manufacturers through use of frequencies.

16. Reported the number of employees that are high school graduates through use of percentages.
    (e.g. manufacturers that employ x individuals reported that "x" % of their employees are high school graduates.)

17. Reported on the number of positions that can be filled by high school graduates through the use of percentages.
    (e.g. manufacturers that employ x individuals reported that "x" % of positions can be done by high school graduates.)

18. Reported hiring trend data by percentages. (e.g. "x" % of manufacturers reported hiring high school graduates in the past year, "x" % report that they will hire high school graduates in the next year, 5 years, 10 years, "x" % of manufacturers report that hiring of high school graduates will increase, decrease, or remain the same in the next year, five years, ten years.)

19. Prepared final report, containing findings, conclusions, and recommendations.

FINDINGS

Current Employment Practices

Sixty-five respondents were sent the survey instrument. Of the sixty-five respondents 30 responded for a response rate of 46%. A portion of the survey instrument focused on the employee population as it related to high school graduates. Respondents were asked to report the number of current employees that were high school graduates, how many positions in the organization could be filled by high school graduates, and whether or not the organization had hired any high school graduates in the last year.

The data showed 70% of the manufacturers reported that between 76% and 100% of the current employees were high school graduates, and 23% reported that between 51% and 75% of their current employees were high school graduates (Table 1). Data revealed that 93% of the manufacturers surveyed indicated that more than half of their employees held only a high school diploma.

TABLE 1. The Number of Current Employees that are High School Graduates

Percentage of Employees that are High School Graduates	**Percentage**
0% to 10%	0%
11% to 25%	3%
26% to 50%	3%
51% to 75%	23%
76% to 100%	70%

In terms of positions that can be filled by high school graduates, 87% of respondents felt that high school graduates could fill 50% or more of their current

positions (Table 2). Furthermore, 77% of manufacturers surveyed indicated that they had hired high school graduates in the past year (Table 3).

TABLE 2. The Number of Positions That Could be Filled By High School Graduates

No. of Positions that Can be Filed by High School Graduates	Percentage
0% to 10%	3%
11% to 25%	3%
26% to 50%	7%
51% to 75%	37%
76% to 100%	50%

TABLE 3. Current Hiring Trend of High School Graduates

Question	Frequency of Yes Response	Frequency of No Response
Have you hired high school graduates in the past year?	77%	23%

Predicted Hiring Trends for High School Graduates

The rest of the questions in this section referred to the future hiring tendencies of manufacturers. The respondents were asked to predict whether or not they would be hiring high school graduates in the next year, if hiring trends of high school graduates would change in the next year, and finally, whether the hiring of high school graduates would either increase, decrease, or remain the same for the next year, the next five years, and the next ten years.

Additional data was gathered to determine any predicted change in hiring trends for high school graduates. Respondents were asked to indicate whether or not they

anticipated hiring of high school graduates in the next year. Ninety-three percent of the respondents believed that they would be hiring high school graduates in the next year (Table 4).

TABLE 4. Predicted Hiring of High School Graduates in the Next Year

Question	Frequency of Yes Response	Frequency of No Response
Do you foresee hiring high school graduates in the next year?	93%	7%

Respondents were then asked to indicate whether or not there were anticipated changes in hiring trends in the future, specifically five year and 10 year time periods. For the next five-year period, 73% of the respondents indicated that there would be no change in hiring trends. For the next ten years, 53% of the responding manufacturers reported that there would not be a change in hiring trends of high school graduates (Table 5).

TABLE 5. Predicted Hiring Trend of High School Graduates

Question Do you foresee the hiring trend of high school graduates to change in the next ...	Frequency of Yes Response	Frequency of No Response
...next five years?	26%	73%
...next ten years?	47%	53%

Next, manufacturers were asked whether or not they predicted the hiring of high school graduates to increase, decrease, or remain the same in the next year, next five years, and next ten year periods. Seventy percent of the responding manufacturers indicated that that the hiring practices for high school graduates would remain the same

in the following year. Forty-three percent believe that the hiring of high school graduates would remain the same in the next five years, while 40% believe that the hiring of high school graduates would remain the same in the next ten years (Table 6).

TABLE 6. Predicted Hiring Trend of High School Graduates

Question Do you foresee the hiring of high school graduates to increase, decrease, or remain the same in the...	**Frequency of the Increase Response**	**Frequency of the Decrease Response**	**Frequency of the Remain the Same Response**
...next year?	20%	10%	70%
...next five years?	30%	27%	43%
...next ten years?	27%	.33%	40%

Employability and the Skills/Qualities Desired of High School Graduates

A different portion of the survey instrument sought information related to SCANS foundation skills and qualities, and SCANS competencies. There were 16 foundation skills and qualities listed on the instrument. Respondents were asked to rank each skill or quality based on the current perceived importance in the workplace of each. Respondents were then asked to rank each skill or quality on the predicted importance of each. A frequency was tabulated for each foundation skill or quality listed on the instrument. Of the responses received, only 80% were useable for this section of reporting.

Currently, the most important foundation skills/qualities desired include Listening (33%), Integrity/Honesty (21%), and Responsibility (21%), which were reported most frequently to be the most important skills/qualities (Table 7). Reading (17%) followed by Integrity/Honesty (13%) were reported most frequently to be the second most important

skills or qualities (Table 8). Listening was reported most frequently as the third most important skill/foundation, followed by a tie between Integrity/Honesty, Interpretation of Information, and Reasoning (Table 9).

Table 7. Skills and Qualities Currently Ranked #1 – Most Important

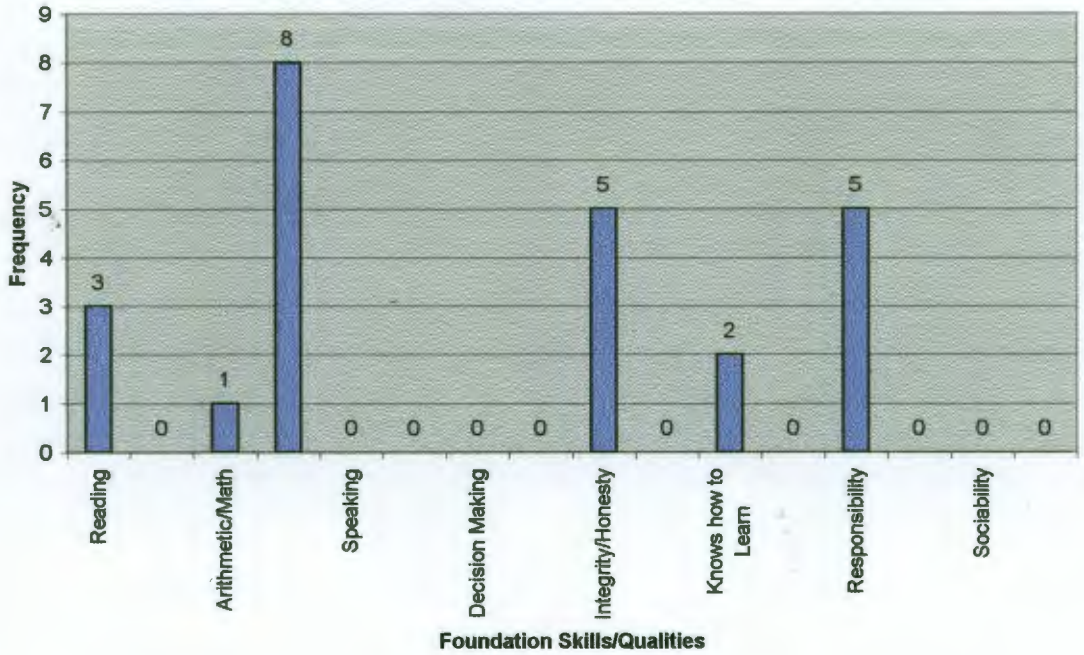


Table 8. Skills and Qualities Currently Ranked #2 – Second Most Important

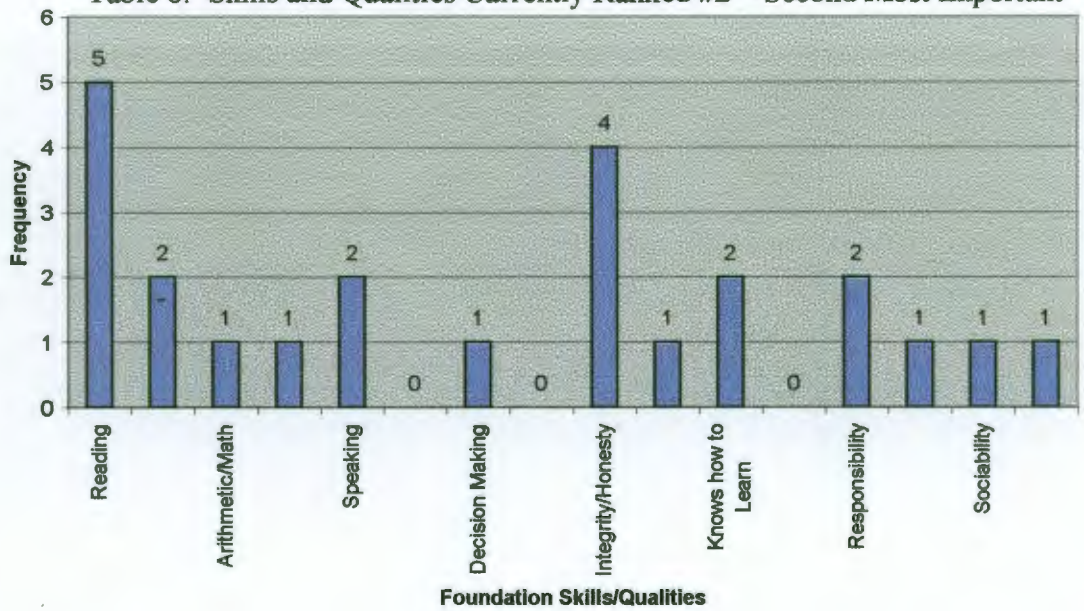
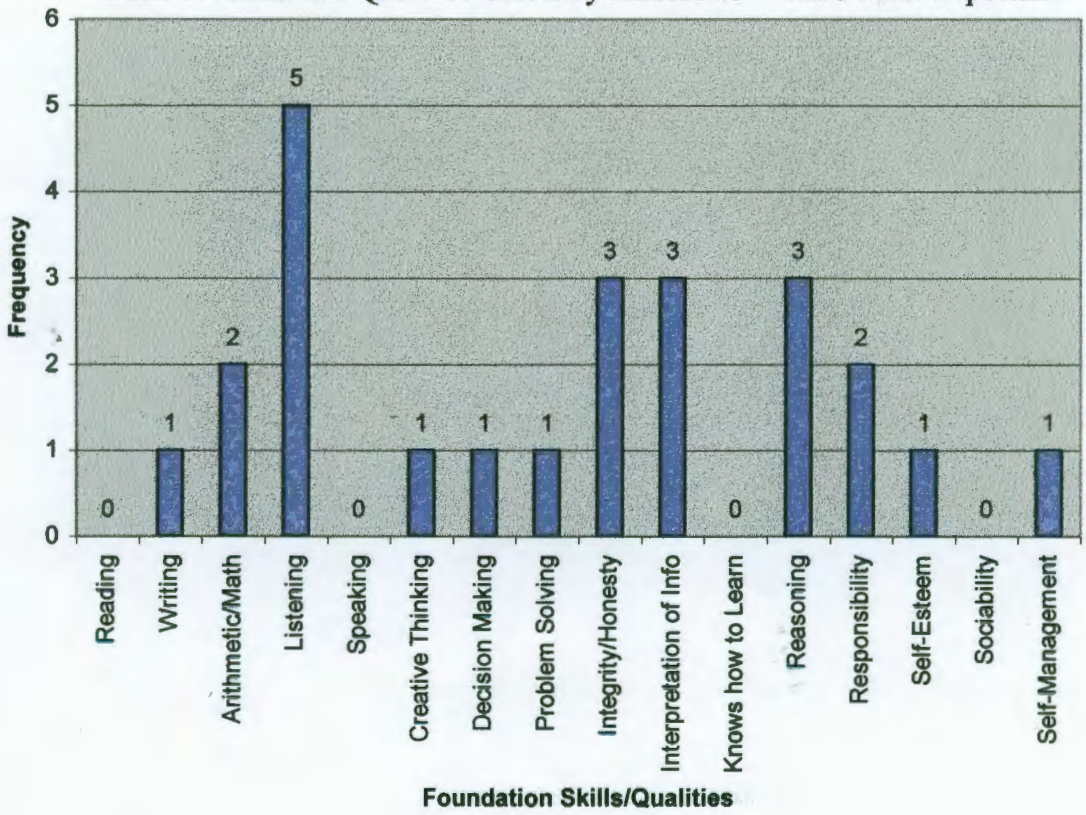


Table 9. Skills and Qualities Currently Ranked #3 – Third Most Important



Currently, the foundation skills and qualities that rank least important include in 14th place, Sociability, which was listed by 25% of respondents, and followed by both Creative thinking (16%) and Decision Making (16%) as the least desired skills/qualities (Table 10). In 15th place, Speaking was the most frequently reported skill/quality (25%), followed by 16% of respondents ranking Self Esteem in 15th place (Table 11). And in 16th place, ranking as the least important skills and qualities, Sociability (21%) was listed most frequently as least important, followed by Creative Thinking (16%) and (16%) Writing Skills (Table 12).

Table 10. Skills and Qualities Currently Ranked # 14 – Less Important

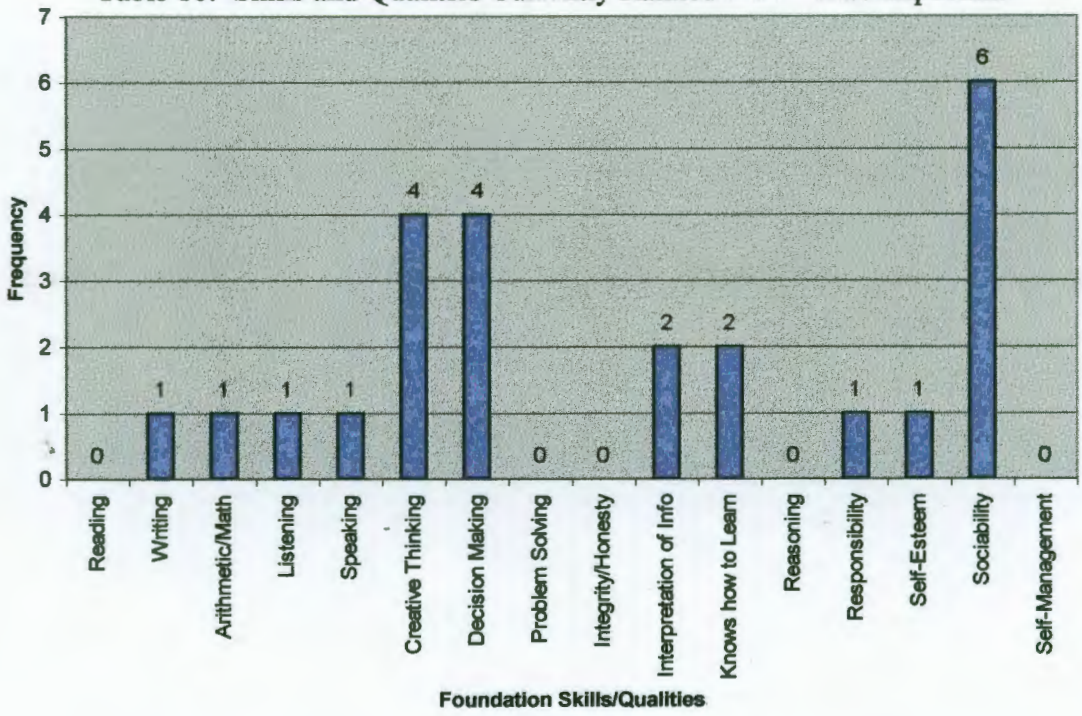


Table 11. Skills and Qualities Currently Ranked #15 – Less Important

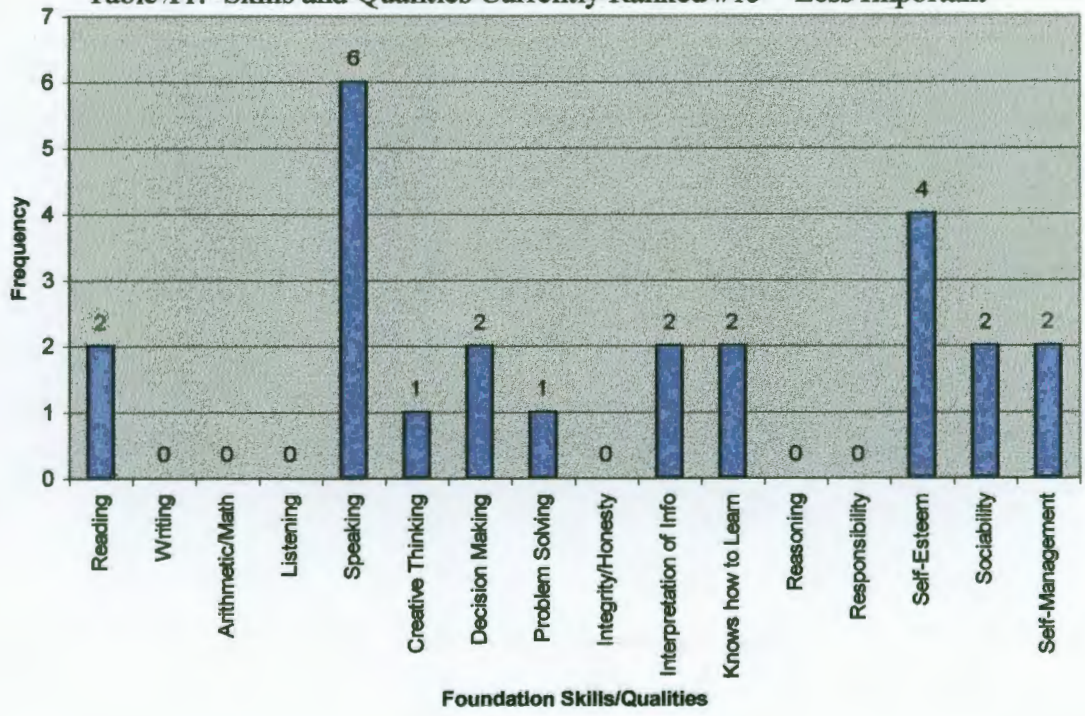
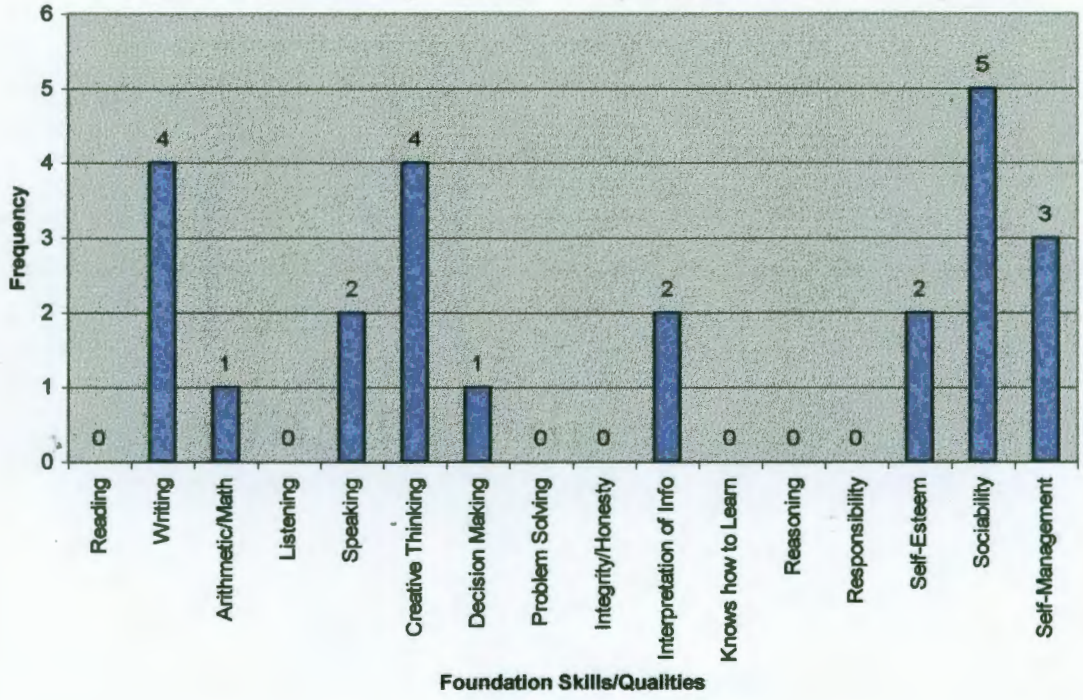


Table 12. Skills and Qualities Currently Ranked #16 – Least Important



Considering the year 2005, the foundation skills/qualities predicted to be most important are somewhat similar to the current desired skills/qualities. Listening (33%), Integrity/Honesty (25%), and Responsibility (21%) were reported most frequently to be the most important skills/qualities (Table 13). Integrity/Honesty (17%) and by Knowing How to Learn (17%) were reported most frequently to be the second most important skills or qualities (Table 14). Listening (25%) and Responsibility (13%) were ranked most frequently as the predicted, third most import skills/qualities (Table 15).

Table 13. Predicted Skills and Qualities Ranking #1 – Most Important

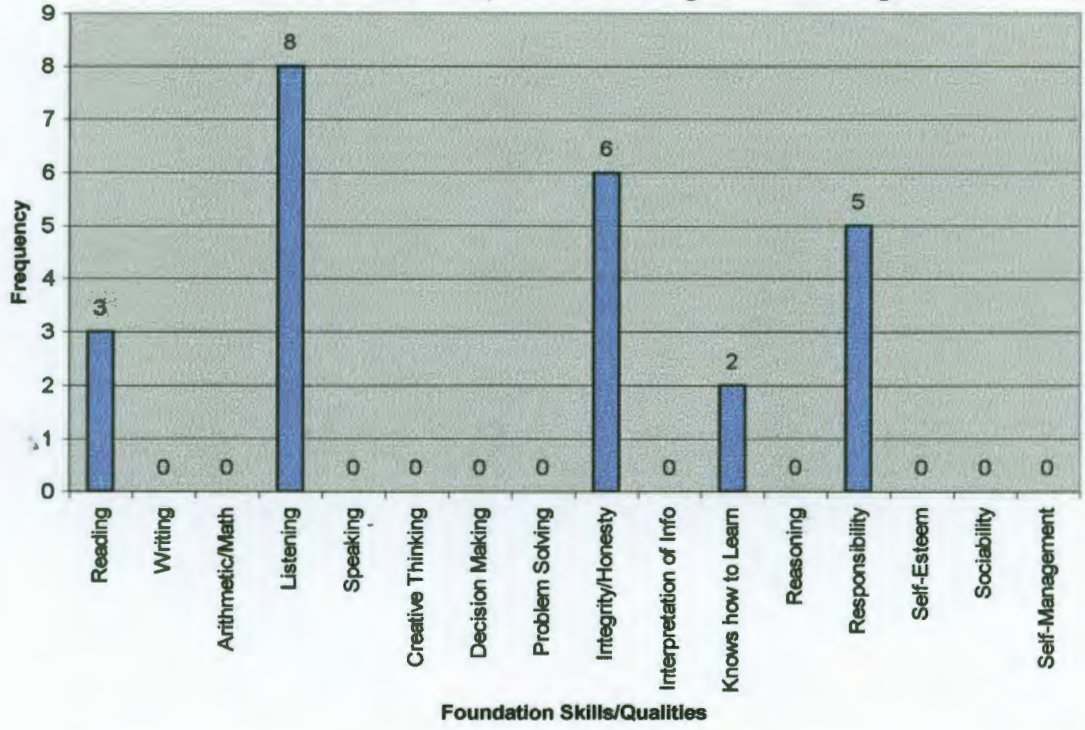


Table 14. Predicted Skills and Qualities Ranking #2 – 2nd Most Important

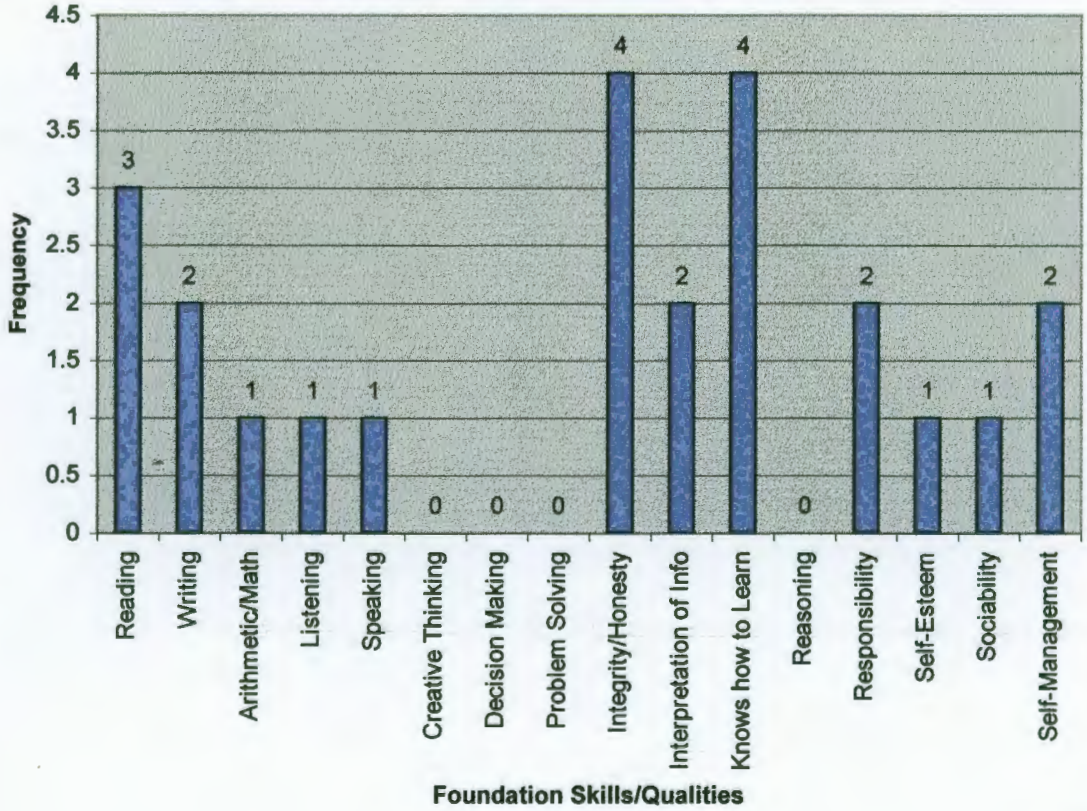
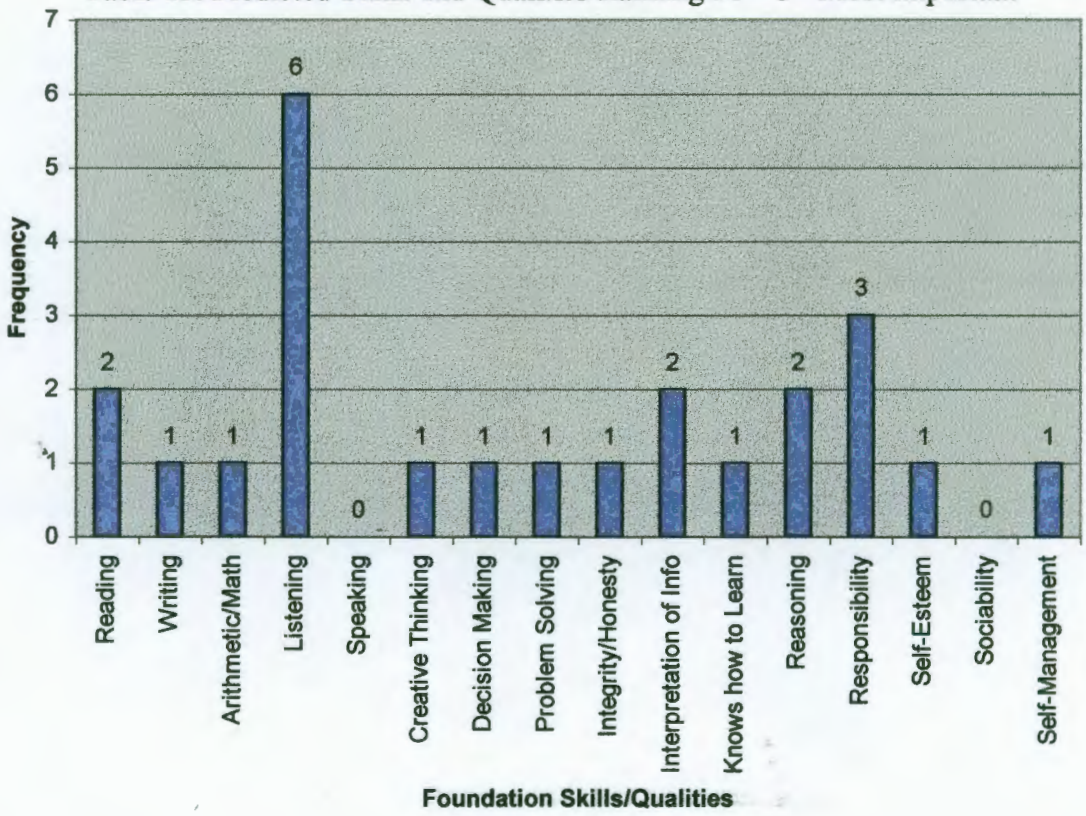


Table 15. Predicted Skills and Qualities Ranking #1 – 3rd Most Important



Ranking of the predicted most important Foundation Skills/Qualities differed very little from the Current ranking (Table 16). There was a slight increase in perceived importance of Integrity/Honesty as one of the most important skills/qualities. The ranking of 2nd and 3rd most important foundation Skills/Qualities showed increases of 50% in both Knowing How to Learn and Self-Management for 2nd place, and a slight increase in Listening skills and Reasoning for 3rd place (Tables 17 and 18).

Declines were seen in Reading and Decision making for 2nd place, and in Arithmetic/Math and Integrity/Honesty for 3rd place. In terms of the predicted least important Foundation Skills/Qualities, there were minimal differences as reflected in Tables 19, 20, and 21.

Table 16. A Comparison of Current and Predicted Ranking of #1 – Most Important Skills and Qualities

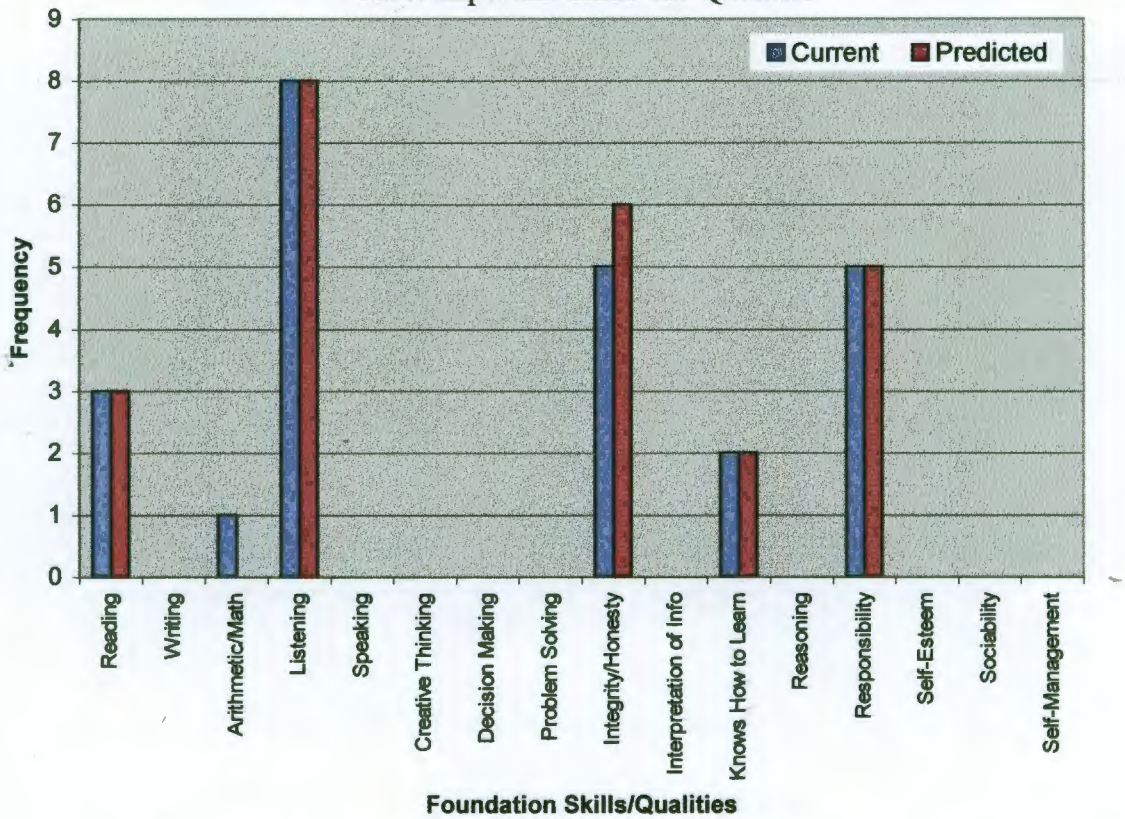


Table 17. A Comparison of Current and Predicted Ranking of #2 – 2nd Most Important Skills and Qualities

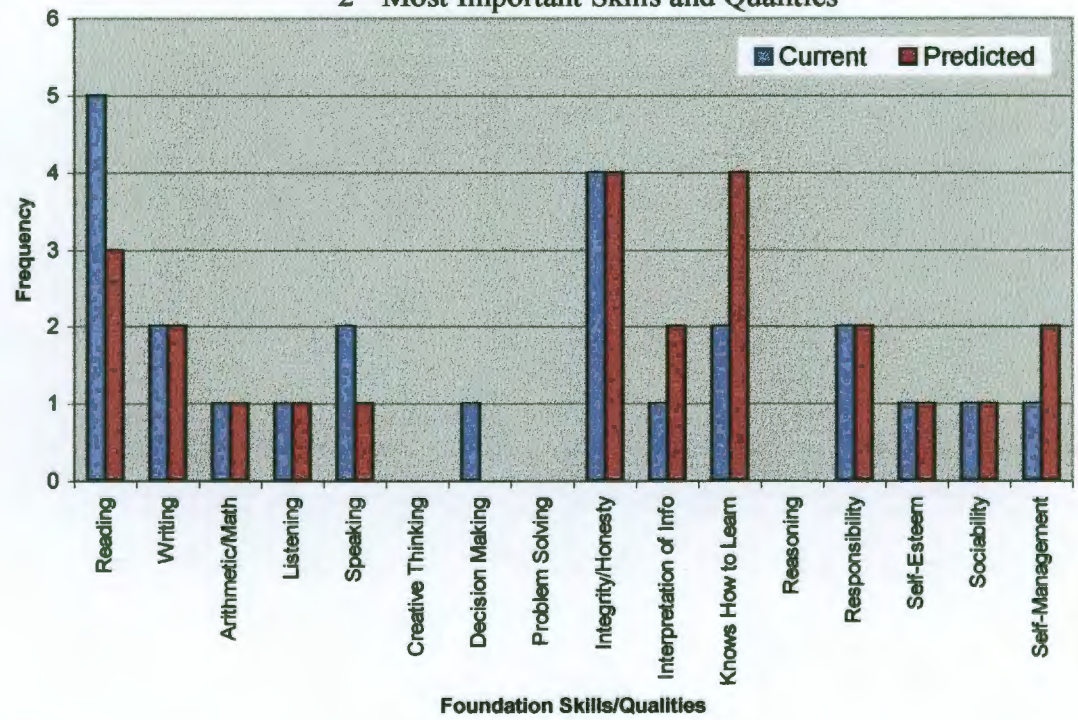


Table 18. A Comparison of Current and Predicted Ranking of #3 – 3rd Most Important Skills and Qualities

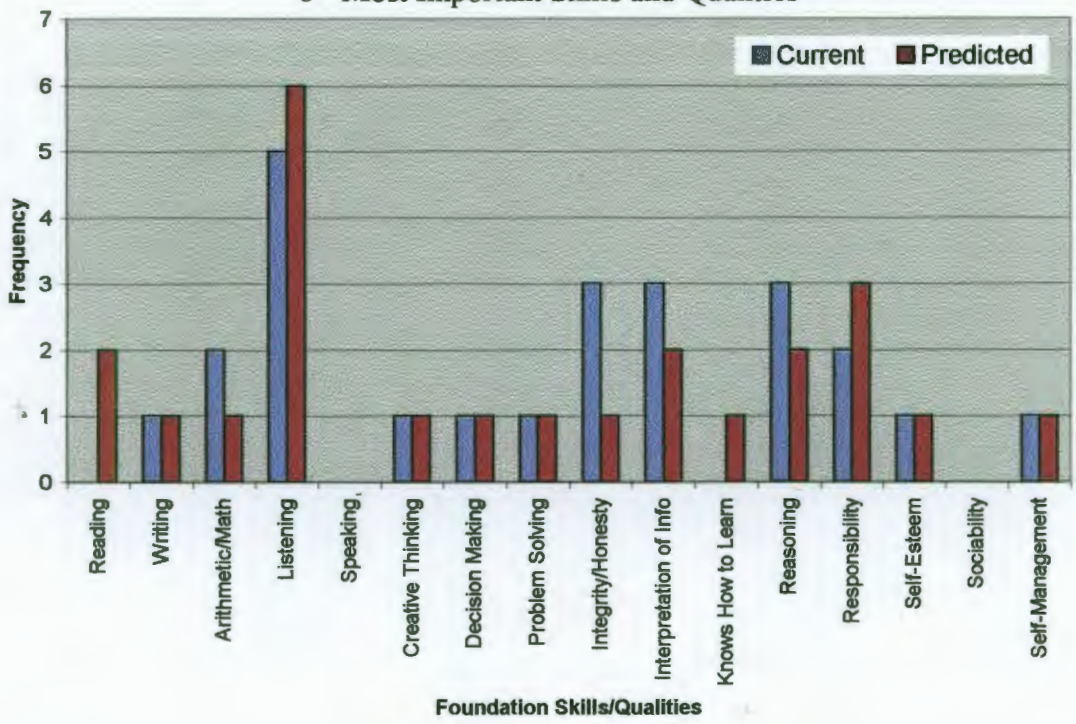


Table 19. A Comparison of Current and Predicted Ranking of #14 – Less Important Skills and Qualities

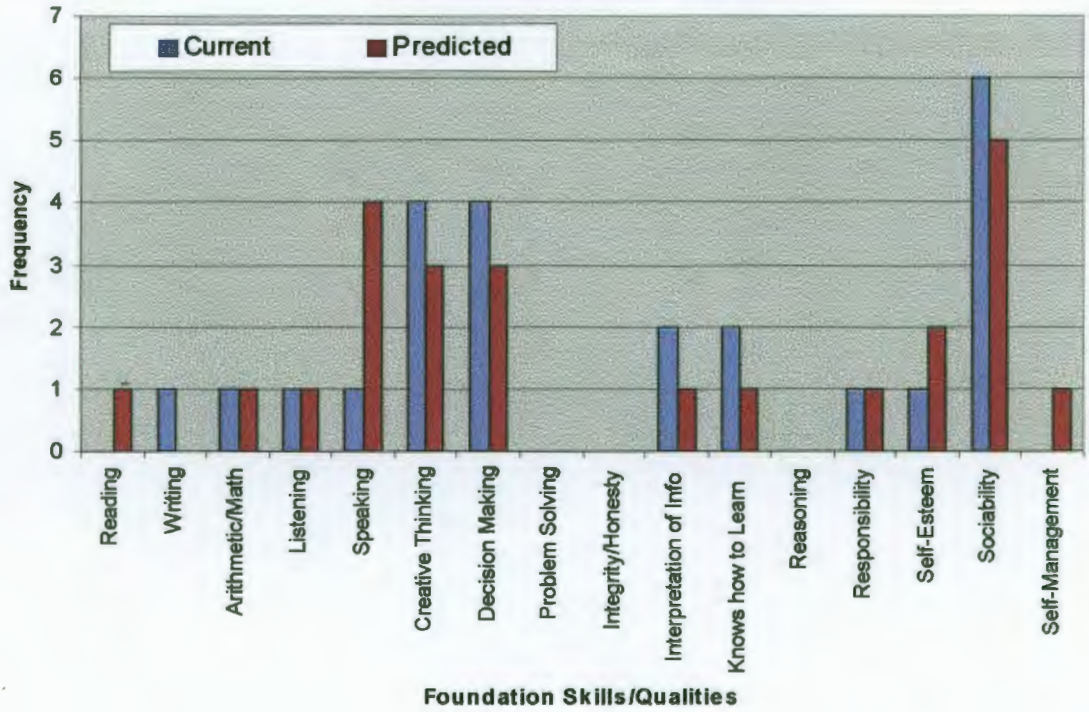


Table 20. A Comparison of Current and Predicted Ranking of #15 – Less Important Skills and Qualities

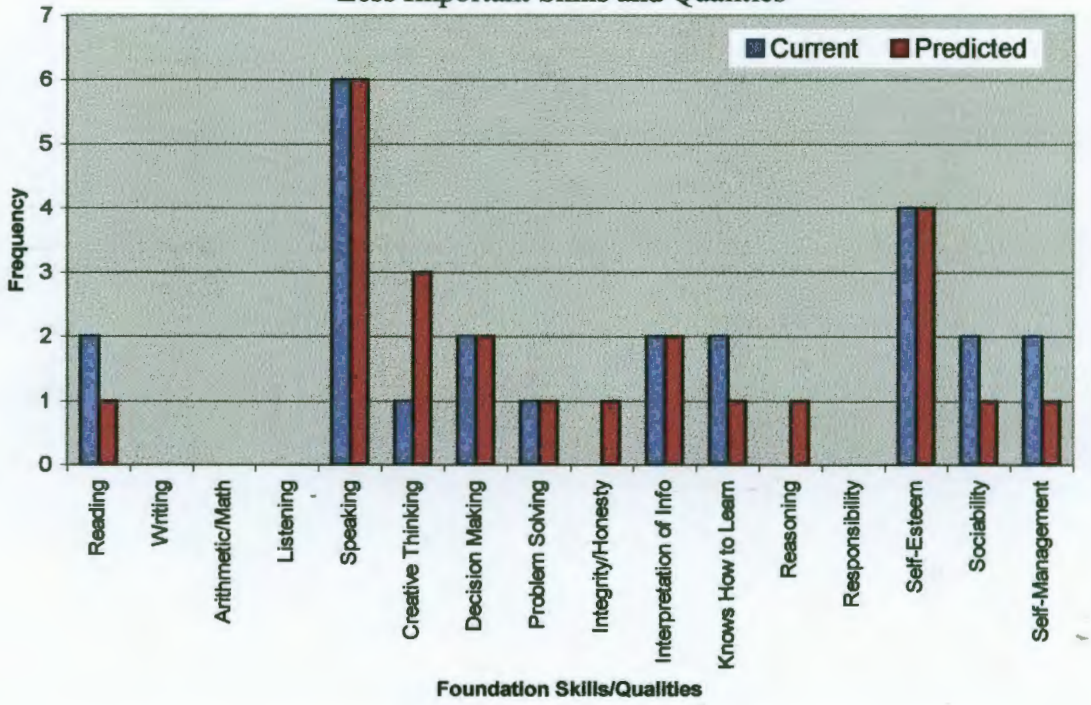
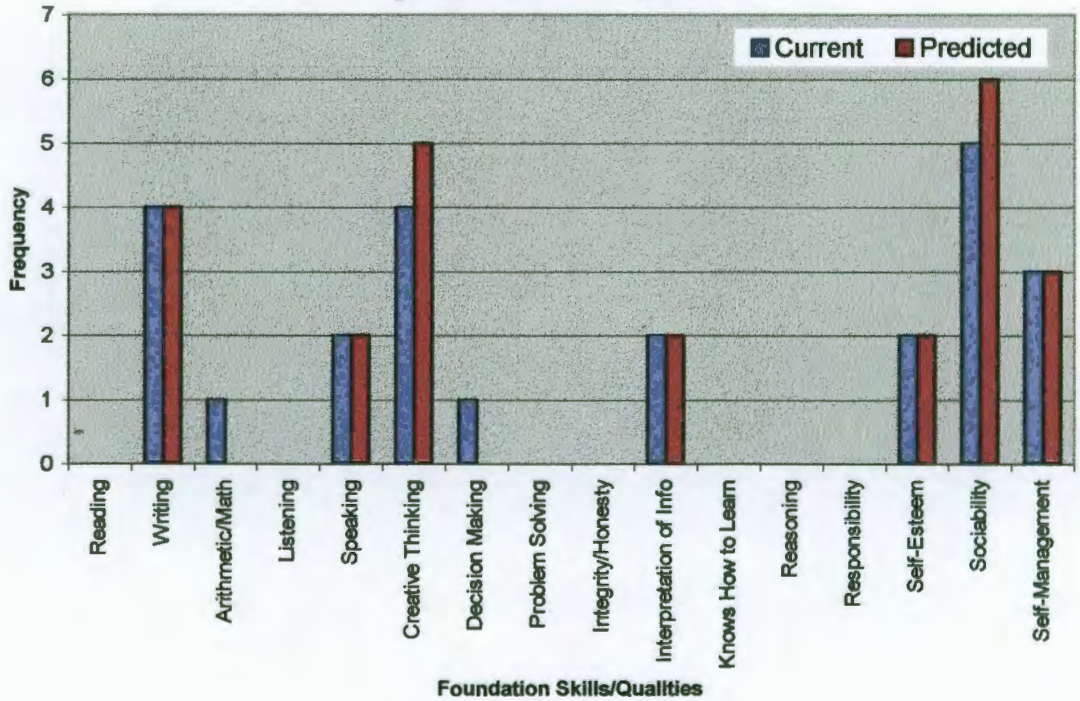


Table 21. A Comparison of Current and Predicted Ranking of #16 – Least Important Skills and Qualities

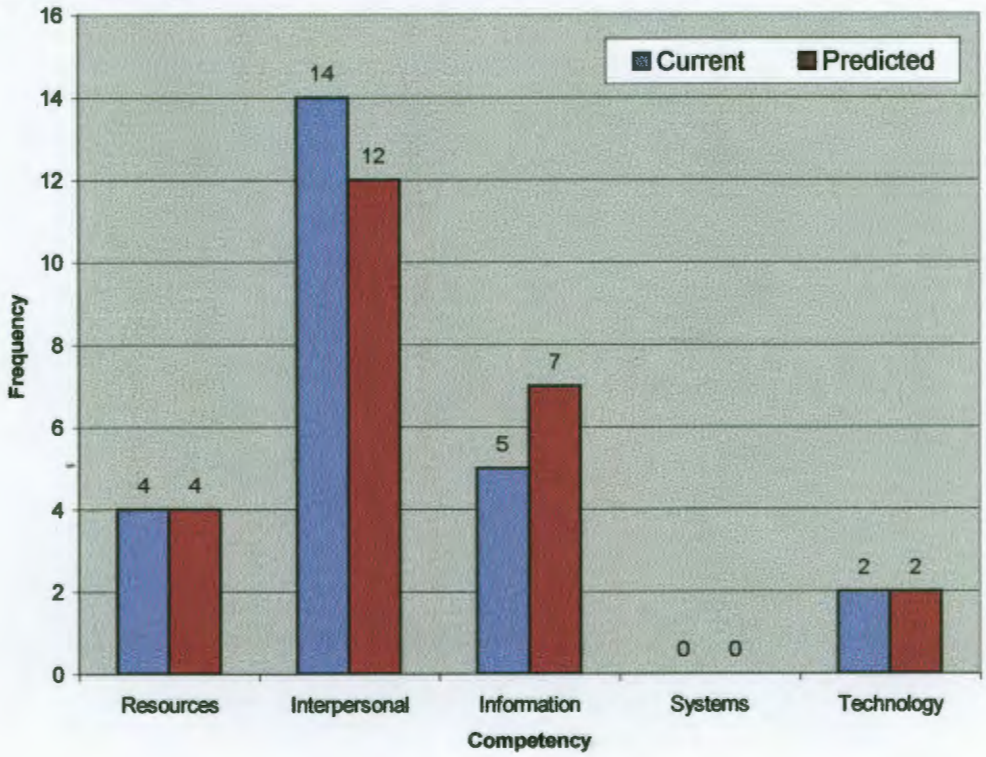


Competency Rankings – Current and Predicted

There were five competencies listed on the instrument. The method of reporting these findings was similar to that of the foundation skills and qualities. Respondents were directed to rank each competency based on the current perceived importance of each competency in the workplace. Respondents were then asked to rank each competency on the predicted importance of each. A frequency was tabulated for each competency listed on the instrument.

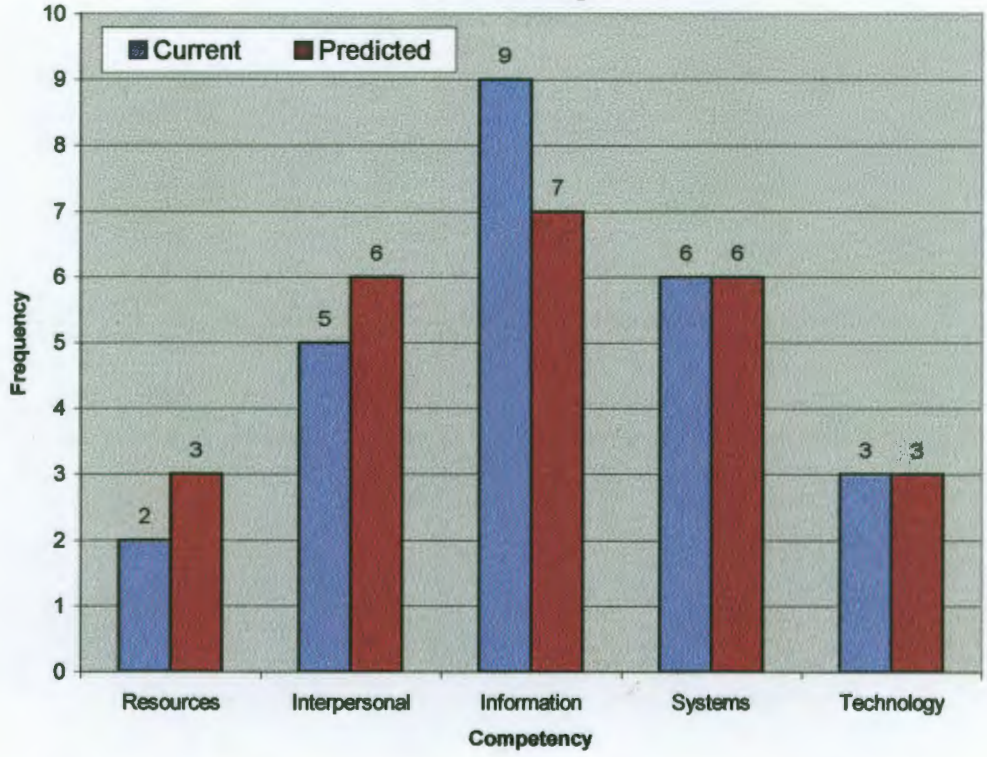
In terms of current perceived importance of competencies, Interpersonal (58%) was reported most frequently as being the most important competency. Data shows that for predicted importance of competencies, Interpersonal (40%) was reported most frequently as being the most important predicted competency (Table 22).

Table 22. Competencies: Current and Predicted Ranking of #1 – Most Important



In terms of current perception, Information (38%) was reported most frequently as being the second most important competency. In terms of predicted importance, Information (23%) was reported most frequently as being the second most important competency. However, there was a 15% decline in the predicted importance of this competency, perhaps indicating that there will be less concern for this competency in the foreseeable future (Table 23).

Table 23. Competencies: Current and Predicted Ranking of #2 – 2nd Most Important



Technology (20%) was reported most frequently as currently being the third most important competency. While Resources (20%) was reported to be the third most important predicted competency (Table 24). Systems and Technology (both 20%) were tied being reported most frequently as the fourth most important competency.

Technology (27%) was reported most frequently as the fourth most important predicted competency (Table 25). And finally, Systems (33%) was reported most frequently as the current least important competency. Systems (30%) was also reported most frequently as the predicted least important competency (Table 26).

Table 24. Competencies: Current and Predicted Ranking of #3 – 3rd Most Important

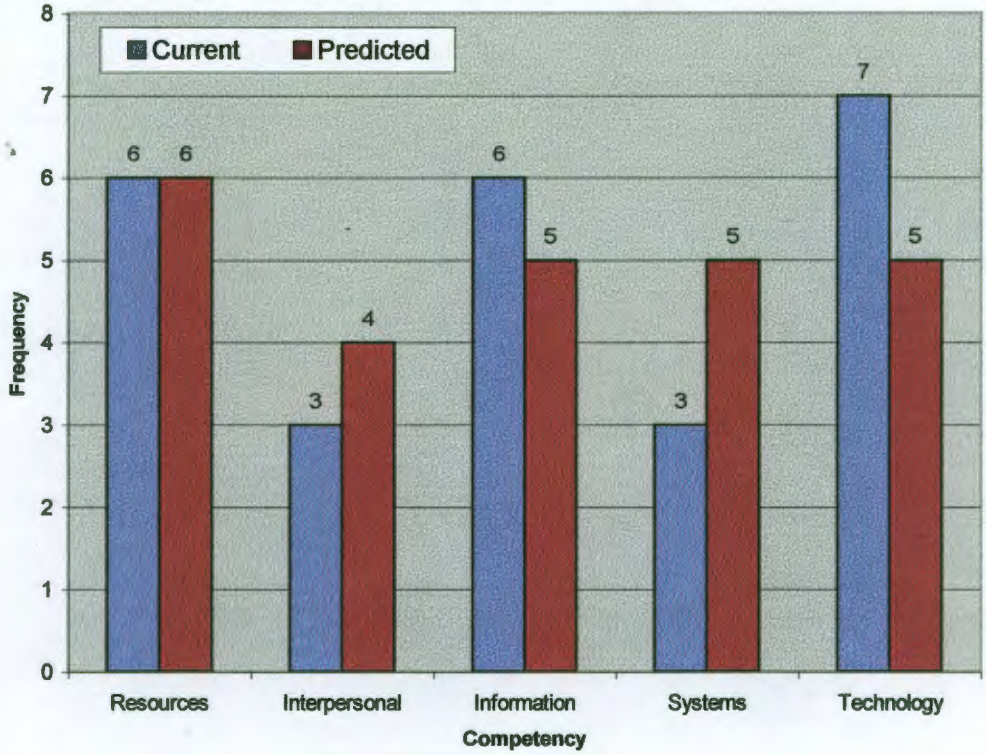


Table 25. Competencies: Current and Predicted Ranking #4 – 4th Most Important

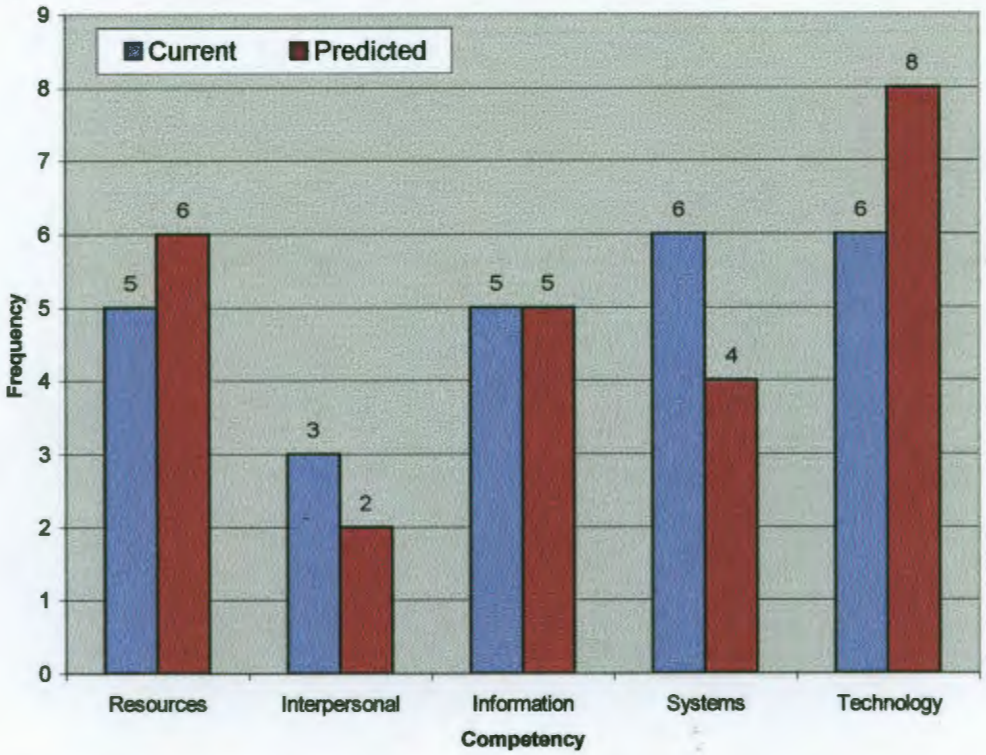
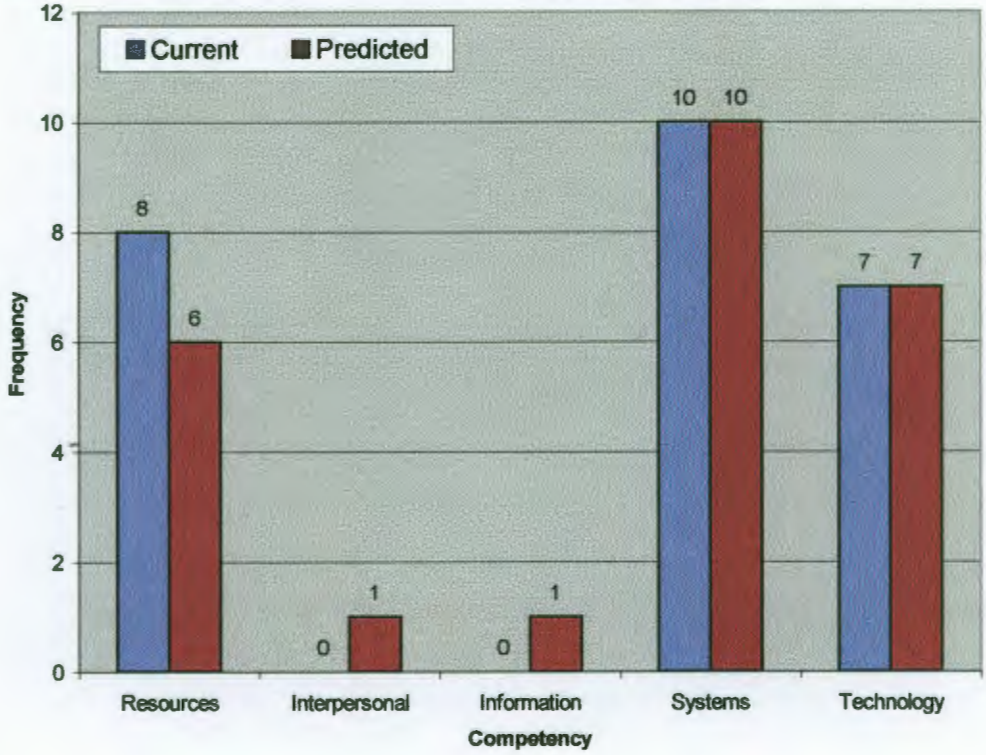


Table 26. Competencies: Current and Predicted Ranking #5 – Least Important



CONCLUSIONS

There has been major research done which has indicated that high school graduates will need to possess higher skill levels in both the academic and technical skills arena. This study was undertaken in part to determine if this held true for Dubuque County manufacturers.

The data suggests that the outlook for high school graduates in Dubuque County is positive. Ninety-three percent of employers reported that high school graduates currently hold more than half of their positions. Furthermore, the 87% of manufacturers indicated that high school graduates could fill 51-100% of their positions. The majority of manufacturers (77%) reported that they had hired high school graduates in the past year, and 93% indicated that they intended on doing so in the next year.

Most of the manufacturers responded that they predicted no change in the hiring tendencies in the next five to ten years. In fact, the majority of manufacturers responded that they felt hiring practices would remain the same in the next year, next five years, and up to ten years.

The skills/qualities reported to be most important by manufacturers in Dubuque County do not parallel those conventionally thought of as most valued – reading, writing, and math. The attributes reported as being the most important are more in the humanistic realm rather than the academic or technical.

In terms of employability and the skills/qualities that employers are looking for, sociability creative thinking, and writing skills are currently the least sought after

skills/qualities. Listening, integrity/honesty, responsibility, and reading skills showed to be currently the most desired skills/qualities.

For the year 2005, manufacturers indicated that Listening, Integrity/Honesty, and Responsibility would remain the most desired skills or qualities. With knowing how to learn following. Predicting little change for the near future, sociability, creative thinking, and writing skills are perceived as being the least desired skills/qualities for the year 2005.

Competency rankings were very similar in terms of current and predicted perceptions. Interpersonal skills being the most sought after competency, and Systems being the least sought after.

Based on the data collected, it would seem that manufacturers in Dubuque County are hiring, and will continue to hire high school graduates. The manufacturers are currently looking for employees that listen, are honest, and responsible. The manufacturers also look for individuals that have excellent interpersonal skills such as the ability to work with others, participate as a member of a team, willing to teach others new skills, exercises leadership, and is able to work in diverse groups. Manufacturers do not think that this desire will change in the foreseeable future.

RECOMMENDATIONS

The findings shown in this study have identified key humanistic attributes that are central to employability in Dubuque County manufacturing firms. These skills/qualities are not the same as those indicated to be of most importance in other major research studies such as SCANS, but are similar to the findings of the ENCARE and Texas manufacturing studies. Administrators, counselors, teachers, and parents should utilize the results of this research to plan and build experiences and curriculum that would nurture employability. The following lists suggestions that would enhance future studies:

1. Other sectors of industry should be included in the study. This would encompass a broader range from which to draw conclusions comparing various sectors to one another.

2. The instrument should be modified to allow respondents opportunity to identify important technical skills.

3. The instrument should request that employers provide a list of job descriptions available to high school graduates.

4. The instrument should inquire as to what the entry level wage range is for each job description.

5. Instead of ranking foundation skills and competencies, a Lickert scale may better represent the information being requested.

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APPENDIX A

Sample Cover Letter

DUBUQUE SENIOR HIGH SCHOOL

MRS. KAREN BLOCKLINGER
ASSISTANT PRINCIPAL

MR. DENNIS SEATON
ASSISTANT PRINCIPAL

1800 CLARKE DRIVE
DUBUQUE, IOWA 52001-4199

MR. LARRY MITCHELL
PRINCIPAL

MR. DONALD KISTLER
ASSISTANT PRINCIPAL

MR. JAMES JARCHOW
ASSISTANT PRINCIPAL

April 12, 1999

Dear «First_Name» «Last_Name»:

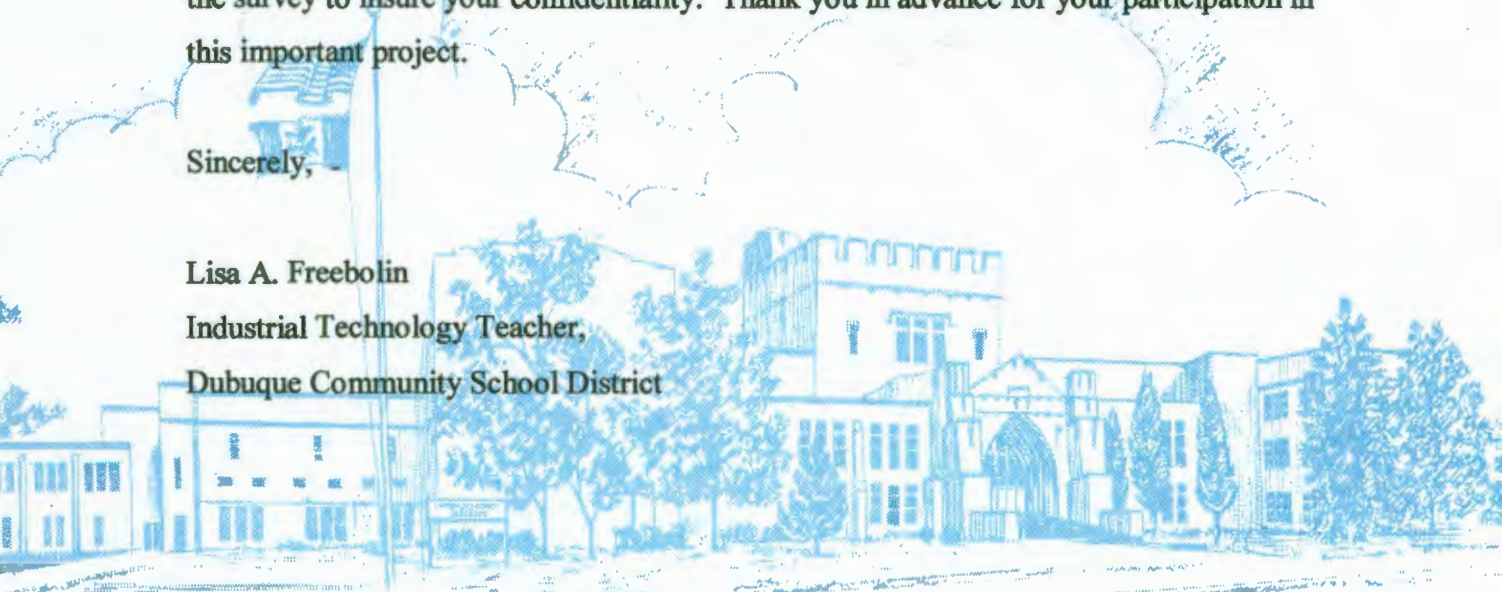
I am an Industrial Technology teacher for the Dubuque Community School District. To better serve our students and meet your needs as employers, we are conducting a survey of Dubuque County manufacturers on your expectations and hiring trends for high school graduates. Your response to this survey will insure an accurate representation of local manufacturers.

Please take the next five minutes to complete the enclosed instrument. Then, return it in the enclosed postage paid envelope. Your answers are completely confidential – there is no need to identify yourself or your organization in any way. (If there is someone other than you that would be in a better position to respond to this survey, feel free to forward this to them.)

The information you provide will be combined with other responses and will be available for your review. Should you wish to receive a summary of the report, simply fill in your name and address, and return the enclosed, stamped postcard separately from the survey to insure your confidentiality. Thank you in advance for your participation in this important project.

Sincerely,

Lisa A. Freebolin
Industrial Technology Teacher,
Dubuque Community School District



APPENDIX B

Sample Survey Instrument

Part One: Employability and the skills/qualities desired of high school graduates.

1. **In terms of present hiring practices, rank the following foundation skills/qualities from 1 to 16, with 1 being the most important skill and 16 the least important skill.**

☐ Reading
(i.e. interprets written information in manuals, graphs and schedules)

☐ Writing
(i.e. able to communicate thoughts, ideas, information and messages in writing)

☐ Arithmetic/Math
(i.e. performs basic computations as well as uses a variety of math techniques to solve problems)

☐ Listening
(i.e. receives, interprets and responds to verbal messages and cues)

☐ Speaking
(i.e. organizes ideas and communicates orally)

☐ Creative Thinking
(i.e. generates new ideas)

☐ Decision Making
(i.e. specifies goals, constraints, generates alternatives, considers risks, and evaluates and chooses best alternative)

☐ Problem Solving
(i.e. recognizes problems and devises and implements plan of action)

☐ Integrity/Honesty
(i.e. chooses ethical courses of action)

☐ Interpretation of information
(i.e. organizes and processes symbols, pictures, graphs, objects and other information)

☐ Knows how to learn
(i.e. uses efficient learning techniques to acquire and apply new knowledge and skills)

☐ Reasoning
(i.e. discovers a rule or relationship and applies it when solving a problem)

☐ Responsibility
(i.e. exerts a high level of effort and perseveres towards goal attainment)

☐ Self-Esteem
(i.e. believes in own self-worth and maintains a positive view of self)

☐ Sociability
(i.e. demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings)

☐ Self-Management
(i.e. assesses self accurately, sets personal goals, monitors progress, and exhibits self-control)

2. **In terms of future hiring practices, consider the year 2005, and rank the following foundation skills/qualities from 1 to 16, with 1 being the most important skill, and 16 the least important skill.**

(*Refer to previous definitions for clarification of terms*)

☐ Reading

☐ Writing

☐ Arithmetic/Math

☐ Listening

☐ Speaking

☐ Creative Thinking

☐ Decision Making

☐ Problem Solving

☐ Integrity/Honesty

☐ Interpretation of information

☐ Knows how to learn

☐ Reasoning

☐ Responsibility

☐ Self-Esteem

☐ Sociability

☐ Self-Management

i. In terms of present hiring practices, rank the following five competencies from 1 to 5, with 1 being the most important competency and 5 the least important.

☐ **Resources:** identifies, organizes, plans, and allocates resources such as time, money, material and facilities and human resources.

☐ **Interpersonal:** works with others; participates as a member of a team, teaches others new skills, exercises leadership, negotiates, and works in diverse groups.

☐ **Information:** acquires and uses information; acquires and evaluates information, organizes and maintains information, interprets and communicates information, uses computers to process information.

☐ **Systems:** understands complex interrelationships; understand systems (organizational, social, and technical) and works and operates effectively with them, monitors and corrects performance in systems and improves or designs systems.

☐ **Technology:** works with a variety of technologies; selects technology, applies technology, and maintains and troubleshoots equipment.

j. In terms of future hiring practices, consider the year 2005, and rank the following five competencies from 1 to 5, with 1 being the most important competency and 5 the least important.

☐ **Resources:** identifies, organizes, plans, and allocates resources such as time, money, material and facilities and human resources.

☐ **Interpersonal:** works with others; participates as a member of a team, teaches others new skills, exercises leadership, negotiates, and works in diverse groups.

☐ **Information:** acquires and uses information; acquires and evaluates information, organizes and maintains information, interprets and communicates information, uses computers to process information.

☐ **Systems:** understands complex interrelationships; understand systems (organizational, social, and technical) and works and operates effectively with them, monitors and corrects performance in systems and improves or designs systems.

☐ **Technology:** works with a variety of technologies; selects technology, applies technology, and maintains and troubleshoots equipment.

Part Two: Hiring Trends

1. **How many of the current employees are high school graduates? (circle one)**

   0% to 10% 11% to 25% 26% to 50% 51% to 75% 76 %to 100%

2. **How many positions in your organization can high school graduates fill? (circle one)**

   0% to 10% 11% to 25% 26% to 50% 51% to 75% 76 %to 100%

3. **Have you hired high school graduates in the past year?** _____Yes _____No

4. **Do you foresee the hiring of high school graduates in the next year?** _____Yes _____No

5. **Do you foresee the hiring trend of high school graduates to change**

   in the next five years? *Yes* *No* **In the next ten years?** *Yes* *No*

6. **Do you foresee the hiring of high school graduates to** *increase, decrease, or remain the same* **in the next year?** (please circle one)

7. **Do you foresee the hiring of high school graduates to** *increase, decrease, or remain the same* **in the five years?** (please circle one)

8. **Do you foresee the hiring of high school graduates to** *increase, decrease, or remain the same* **in the ten years?** (please circle one)

Thank you for your time and help! Please return this survey in the enclosed, postage-paid envelope.

If you would like a summary of the results, please use the enclosed postcard; fill in your name and address, and mail **separately** from this form to maintain confidentiality.

APPENDIX C

List of Dubuque Co. Manufacturers Employing 20 or More People

DUBUQUE COUNTY MANUFACTURERS EMPLOYING 20 OR MORE

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
Dubuque Glass Co.	197 Main Street	Dubuque	IA	52001 -7661	Tim	Greenfield	Owner	20
Alter Scrap Processing	180 Harrison Street	Dubuque	IA	52003	Michael	Hopper	Chief Executive	21
Dubuque Brewing & Bottling Company	500 E. 4th Street	Dubuque	IA	52001 -2398	Ron	McCarl	President, General Manger	22
Grove Tools, Inc.	3230 Dodge Street P.O. Box 1306	Dubuque	IA	52001	Robert J.	Smith	President	22
Farber Bag and Supply Company	8733 Kapp Drive	Peosta	IA	52068	Jim	Farber	Chief Executive	22
Eagle Tool Company	P.O. Box 146 400 6th Ave. NW	Dyersville	IA	52040	Mark	Brown	Chief Executive	23
Automotive & Industrial Hardware	2400 Kerper Blvd.	Dubuque	IA	52001	Lyle	Whalen	President	23
Precision Tool & Engineering, Inc.	1500 Radford Rd.	Dubuque	IA	52002	Kevin	Freiburger	Chief Executive	24

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
Bradley Iron Works	2345 Kerper Blvd. P.O. Box 1249	Dubuque	IA	52001	Ronald	Bradley	President	24
American-Iowa Mfg., Inc.	1207 1st Avenue E P.O. Box 757	Cascade	IA	52033	Judith A.	Simon	Chief Executive	25
N. L. F. Protective Products, Inc.	3131 Cedar Cross Court Unit #4	Dubuque	IA	52033	Nick	Frommelt	President	25
Morrison Brothers Company	E. 7th Street	Dubuque	IA	52001 -9998	Mac	Langkamp	General Manager	26
Dubuque Hardwoods	205 e. 6th Street	Dubuque	IA	52001	Robert	Miller	President	27
D. E. Smith & Associates, Inc.	14738 Hwy 20 West	Dubuque	IA	52003 -9222	Dane	Smith	President	30
Dubuque Screw Products, Inc.	460 Huff Street P.O. Box 895	Dubuque	IA	52001	Michael	Scherr	Chief Executive	31
Camoplast Rockland, Limited - Dubuque	8625 Enterprise Drive	Peosta	IA	52068 -0177	Romy	Mercier	Chief Executive	32

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
Henry Filters, Inc.	14738 Hwy. 20 W	Dubuque	IA	52003 -9222	Stephen	McEvans	President	35
Rafoth Sheet Metal	1766 Central Avenue	Dubuque	IA	52001 -3607	Dave	Rafoth	President	36
E. R. Carpenter Company	2525 Kerper Blvd. P.O. Box 1182	Dubuque	IA	52001 -1182	Thomas	Hein	Branch Manager	36
Panels Unlimited	14738 Hwy. 20 West	Dubuque	IA	52003 -9222	Jeff	Smith	President	40
Vessel Systems, Inc.	430 E. 7th Street	Dubuque	IA	52001 -2311	Ken	Heitritter	President and General Manager	40
Zephyr Aluminum Products	555 Huff Street P.O. Box 936	Dubuque	IA	52004	Al	Timmerman	President	42
Oral Arts	4121 Pennsylvania Ave.	Dubuque	IA	52002 -2628	Donald	Merz	President	44
Jim Giese Roofing Company	1015 Century Circle	Dubuque	IA	52002	Jim	Giese	President	50
Addoco, Inc.	12640 Industrial Court	Peosta	IA	52068	Stephan	Rodman	President	50

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
Inland Protein Corporation	525 Julien DBQ Drive P.O. Box 1398	Dubuque	IA	52001	Nix	Lauridsen	Chairman/ CEO	55
SKW Biosystems	2350 Kerper Blvd.	Dubuque	IA	52001	Joe	Reed	Plant Manager	55
Lund Manu-facturing	1000 9th Avenue NW	Farley	IA	52046	Randall	Lund	President/ Owner	60
Spec Cast	428 6th Avenue P.O. Box 368	Dyersville	IA	52040	Dave	Bell	President	60
No-Sag Foam Products	2459 Kerper Blvd.	Dubuque	IA	52001 -2223	Daniel	Uthe	Branch Manager	60
F. H. Uelner Precision Tools and Dies, Inc.	4545 Futuro Court	Dubuque	IA	52001 -2615	Thomas	Uelner	President	60
Unique Balance	2225 Kerper Blvd.	Dubuque	IA	52001	Terry	Shannon	Plant Manager	62
The Adams Company	100 East Fourth Street	Dubuque	IA	52004 -0268	John	Hendry	President and CEO	75

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
Giese Sheet Metal, Inc.	2125 Kerper Blvd.	Dubuque	IA	52001	Charles	Giese	President	81
Jeld-Wen Fiber of Iowa	250 E 8th	Dubuque	IA	52001	Duane	Sickert	General Manager	83
Double L Group	2020 Beltline Road	Dyersville	IA	52040	Norb	Borcherding	President	90
Captive Plastics, Inc.	19101 Kapp Drive	Peosta	IA	52068	John	Raymonds	CEO	94
Vocational Services Center	2455 Kerper Blvd.	Dubuque	IA	52001 -2223	Daniel	Emmert	General Manager	95
The Metrix Company	4400 Chavenelle Road	Dubuque	IA	52001	Donnelle	Fuerste	President	100
Premier Tooling, Inc.	8853 Kapp Drive	Peosta	IA	52068 -0012	Janda	Heister	President	100
Key City Die Casting	8603 Kapp Drive	Peosta	IA	52068	Joe	Drapeau	President	100
Namasco-Steel Warehousing Division	P.O. Box 11	Peosta	IA	52068	John	O'Connor	General Manager	107

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
IMC Nitrogen Company	16675 Hwy 20 West P.O. Box 229	East Dubuque	IL	61025	Paul	Collins	President	127
Lumber Specialties	P.O. Box 38	Dyersville	IA	52040	Roger	Gibbs	CEO	130
Scale Models	P.O. Box 327	Dyersville	IA	52040 -0327	Joseph	Ertl	CEO	130
Dyersville Die Cast	P.O. Box 327	Dyersville	IA	52040	Joseph	Ertl	CEO	130
Mi-T-M Corporation	8650 Enterprise Drive	Peosta	IA	52068	A.J.	Speigel	President	130
Dubuque Stamping and Mfg., Inc.	32nd and Jackson Street	Dubuque	IA	52001 -0798	Dave	Spahn	President	140
Cascade Lumber Co.	Hwy 151 E	Casacade	IA	52033	Ray	Noonan	President	150
Morrison Brothers Company	24th and Elm P.O. Box 238	Dubuque	IA	52001	Charlie	Glab	Chairman	150
Bodine Electric Company	19225 Kapp Drive	Peosta	IA	52068	Tim	Sheehan	Manager	155

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
Webber Metal Products	120 Industrial Park Rd. P.O. Box 248	Dubuque	IA	52033 -0248	James	Webber	President	170
Klauer Manu-facturing	1185 Roosevelt Street Ext. P.O. Box 59	Dubuque	IA	52004 -0059	William	Klauer	President	180
All American Homes	1551 15th Ave. SE P.O. Box 219	Dyersville	IA	52040	Del	Heer	V.P and General Manager	222
Modernfold, Inc.	512 5th Street NW	Dyersville	IA	52040	Daniel	Palmer	Vice President	226
Georgia-Pacific Corporation	2150 Kerper Blvd.	Dubuque	IA	52001	Gerry	Vassen	General Manager	272
Rite-Hite Corporation	4343 Chavenelle Rd. P.O. Box 1200	Dubuque	IA	52001	Lou	Weigand	Facility Manger	300
Frommelt Safety Products	4343 Chavenelle Road	Dubuque	IA	52002 -2654	Cary	Pinkalla	General Manager	360
A.Y. McDonald Manufacturi ng Company	4800 Chavenelle Road	Dubuque	IA	52002	R.D.	McDonald	Chairman and CEO	368

Company	Address 1	City	State	Postal Code	First Name	Last Name	Job Title	No. of Employees
Barnstead-Thermolyne Corporation	2555 Kerper Blvd.	Dubuque	IA	52001	Randy	Hoff	President	432
The Ertl Company	Hwy 136 & 20 P.O. Box 500	Dyersville	IA	52040 -0500	George	Volanakis	President and CEO	540
Eagle Window and Door	375 E. 9th St. P.O. Box 1072	Dubuque	IA	52001	Dale	Tucker	CEO	550
Flexsteel Industries, Inc.	3400 Jackson Street. P.O. Box 877	Dubuque	IA	52001	Jack	Crahan	Chairman	835
Farmland Foods, Inc.	701 E. 16th Street	Dubuque	IA	52001 -4948	Kyle	Whited	Plant Manager	1300
John Deere Dubuque Works	18600 S. John Deere Road	Dubuque	IA	52001	Max	Guinn	CEO	2352