Career Orientation Decisions of Rural High School Students: A Case Study

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ABSTRACT

The present research identifies the regional attitudes and understandings of high school students and administrators pertaining to careers in the manufacturing industry. To provide comparative data, representatives from regional manufacturing industry participated in the study as well. The study concludes with recommendations for manufacturing firms and educational institutions to improve recruiting efforts of potential members of the future manufacturing workforce, with an emphasis placed on secondary educational impacts and affiliations. The regional focus of the research is based on a rural region within the Midwestern United States.

INTRODUCTION

Much research has focused on the career decision making process of young people. One of the key issues is the recognition of opportunities by students in traditional “vocational” areas. Although there are high levels of access to career and technical education programs, enrollments in such courses and programs for many is considered low (Karmel, 2007). Research suggests that career and occupational choices are developed as early as childhood (Super, Savickas and Super, 1996). However, these choices are not necessarily based on hard evidence. In fact, Savickas states that an individual’s career “emerges from an active process of making meaning, not discovering preexisting facts” (2005, p. 43).

Further, research suggests that teenagers’ predictions of future occupational attainment are not accurate. In one study, less than half of 9,000 high school graduates had achieved their occupational expectation by age 30. Further, women tended to work in less prestigious occupations than they had expected (Rindfuss, Cooksey and Sutterline, 1999).

One source of youth information and perceptions is that of parents. Further, parental behavior and support are related to career exploration activities of high school students (Kracke, 1997). The active role of parents in the career decision making process is likely to decrease perceived barriers of young people. To this end, research suggests that the perception of barriers may be a major and significant obstacle in optimal career selection (Swanson, Daniels & Tokar, 1996).

The present research sought to take into account youth perspectives, the role of parents, school administration and programs and local industry in investigating student career making decisions on a local level. More specifically, the research focus was a rural region within the Midwestern United States.

PROCEDURES

Because of the unique nature of the present research, the use of qualitative research methods was deemed most appropriate. More specifically, a series of focus groups were organized that attempted to
solicit inputs from students, school administrators and representatives from the regional manufacturing industry.

Participants

High school students comprised the primary group sample for the present research. A total of 32 students from three regional high schools participated in the research. Of those 32, 15 (47%) were male and 17 (53%) were female. The age of students ranged from 16 – 18, with the majority of participants being 18 (47%). The average age of student participants was 17.25. The age distribution is represented in Table 1, below.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>7</td>
<td>22 %</td>
</tr>
<tr>
<td>17</td>
<td>10</td>
<td>31 %</td>
</tr>
<tr>
<td>18</td>
<td>15</td>
<td>47 %</td>
</tr>
</tbody>
</table>

Also relevant to the present research is the class of student participants. Of 32 student participants, half were seniors (16). A complete analysis of student participants by class is presented in Table 2, below.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore</td>
<td>5</td>
<td>17 %</td>
</tr>
<tr>
<td>Junior</td>
<td>11</td>
<td>33 %</td>
</tr>
<tr>
<td>Senior</td>
<td>16</td>
<td>50 %</td>
</tr>
</tbody>
</table>

A single focus group involving a total of four high school administrators was conducted. All four of the participants were male. Two of the participants were high school principles, while the other two were administrators responsible for career and technical education programs across various rural schools and school districts.

A single focus group was conducted involving representatives from area/regional manufacturing firms and organizations. A total of six individuals participated in this focus group. Of the six, five were male and one was female. Three of the six were management personnel within a regional manufacturing firm, two of the six were involved in the human resources elements of local manufacturing organizations and one was a representative of a manufacturing initiative.

METHODS

Qualitative research methods were utilized for the present research. More specifically, there were two stages to the research. Focus groups were conducted with each of the primary stakeholder groups. For student focus groups, the Nominal Group Technique was utilized to identify and categorize perceptions related to the manufacturing industry in the local area/region. For administrator and manufacturing industry representative focus groups, grounded theory was utilized to record and compare perceptions to those of students.

Nominal Group Technique was utilized as a research tool to gather and record data during student and faculty focus groups. Nominal Group Technique (NGT) involves the use of independently generated
answers to questions, which form the basis for group discussion and ranking later in the process (Sample, 1984). NGT was utilized for these groups as a word association to gather general attitudes toward issues, topics or terms such as “career”, “manufacturing”, “education,” “salary”, and “technology.”

Grounded theory is an approach that requires the researcher read (and re-read) a textual database (in this case, transcripts of focus groups with students and instructors) and "discover" or label variables (called categories, concepts and properties) and their interrelationships (Borgatti, 2009). Those categories, issues or themes form the basis for further research with secondary audiences or research participants. In the case of the present research, those secondary groups were area/regional school administrators and area/regional manufacturing representatives. These groups were asked questions that allowed the researcher to confirm, refute, or further investigate concepts and tendencies revealed in focus groups conducted with students and instructors.

- Initial reactions from each constituency (listed above)
- Identification of myths or misperceptions from each constituency about the perceptions of other groups
- Identification of “common ground” perceptions of a majority of stakeholder groups

Findings

Because data was gathered in four distinct stages, findings are reported according to those stages. The following sections represent findings relative to each stage/group of the research process. The findings will be integrated in the section of this report entitled “Summary.”

Area/Regional High School Students

Students participants in the present research indicated interest in several career options. Their interests were wide ranging. Students were initially asked “What are your career plans?” When asked to name their chosen career field, they identified the following:

- Something with political science
- Medical
- Drafting
- Business
- Respiratory therapist
- Psychology
- Undecided
- Law school
- Software developer/gaming
- Mechanical engineering
- Forestry/agriculture
- Welding
- Geologist
- Nursing
- Civic or aerospace engineering
- Physical therapy
- Journalism
- Special education
- Marketing
- Law enforcement
- Mathematics
- Computer engineering
- Teacher
- Coach
- Business management

It should be noted that some of these career paths were identified more than once. Because of the qualitative nature of this research, those numbers were not deemed reliable for reporting. Also of particular note is the fact that the vast majority of students who were asked to identify a career were only able to name a field and not a specific occupation or position within that field.

Students were additionally asked “What do your parents do for a living?” Their responses were also wide ranging and are presented below:

- Education
- Manager/Accountant – “works for Kimball”
- Truck Driver (unsure of type)
- “Works for Masterbrand”
- “Special Education Teacher”
- “Stains wood….works for Kimball”
- “Mechanic”
- “Some type of UPS Manager”
- Self employed – pool sales and installation
The wide range of parental employment indicates that students do have some baseline exposure to a variety of career options. However, given students’ own lack of detail in choosing an occupation, they do not appear to have any overall orientation to the workplace. Further, only three (3) of the 32 participants indicated that they would be interested in pursuing the same career as one or both of their parents. Those students who did not want to pursue their parents’ career field identified the following reasons:

- Long or unreliable hours/low pay (7)
- Lack of interest (8)
- Type of work (7)
- Nature of work (10)

Related to students’ preferred or planned career fields of choice, they tended to focus on white collar and knowledge/information industry professions. Moreover, when asked to identify characteristics of their chosen occupational fields that appealed to them, they identified several key ideas. It should be noted that some students offered multiple characteristics of their chosen field as reasons for selecting it. Grounded theory was used to categorize student responses, and corresponding categories were ranked according to frequency of response, as listed in Table 3, below.

<table>
<thead>
<tr>
<th>Table 3: Reasons for Students Career Choices</th>
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<tbody>
<tr>
<td>Category</td>
</tr>
<tr>
<td>Social element of career</td>
</tr>
<tr>
<td>Ability to help others</td>
</tr>
<tr>
<td>Work environment</td>
</tr>
<tr>
<td>Position/task variation</td>
</tr>
<tr>
<td>Familiarity of position/task</td>
</tr>
<tr>
<td>Pay scale</td>
</tr>
<tr>
<td>Ability to find work</td>
</tr>
<tr>
<td>Position benefits</td>
</tr>
</tbody>
</table>

Students were additionally asked “Where do you get information for career planning?” As with information and rationale for career choices, many students identified several sources of locating career information. Grounded theory was used to categorize student responses, and corresponding categories were ranked according to frequency of response, as listed in Table 4, below.

<table>
<thead>
<tr>
<th>Table 4: Student Sources for Career Planning Information</th>
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<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>Parents/Family members</td>
</tr>
<tr>
<td>Internet</td>
</tr>
<tr>
<td>Teachers/Classes</td>
</tr>
<tr>
<td>Counselors</td>
</tr>
</tbody>
</table>
Finally, students were asked to associate words or phrases that described their feelings about a number of concepts or ideas. These concepts or ideas included the words “career”, “technology”, “manufacturing” and “education.” The following sub-sections briefly describe findings for each of these concepts.

1. Word Association Topic #1 – Career - Students tend to identify the term career with “adult” life, and tended to use terms such as “job”, “work”, “salary” or material possessions (i.e. “car”, “house”, etc.). None of the students named a specific career field. Some student responses did indicate intrinsic oriented topics, such as “sacrifice”, “motivation” or “confidence.” A final group of student responses centered around uncertainty, such as “undecided”, “opportunity”, “unknown.”

2. Word Association Topic #2 – Technology - Students identify technology as a tool to increase convenience. They tended to use terms such as “new things”, “more efficient,” “better electronics”, “less complication” and “help” to describe their feelings about technology. A number of them also indicated specific material goods, such as “cars”, “iPod”, “computers”, “cell phones”, “television”, and “blu-ray player” as terms synonymous with technology. It should be noted that no students equated technology or technological growth to careers, jobs or tasks.

3. Word Association Topic #3 – Education - Students clearly see education as a necessary step toward career attainment. Further, they tend to think of traditional and formal education when confronted with this. Terms such as “school”, “college”, “degree”, “studying” and “classes” overwhelmingly described students’ perspectives of education. It should be noted that no students introduced conceptualized education as synonymous with training, experience or cooperative education/internships.

4. Word Association Topic #4 – Manufacturing - Students overwhelmingly described manufacturing in a negative manner. Among the terms they used to describe manufacturing included “long days”, “hard”, “difficult”, “stressful”, “boring”, “dirty” and “repetition.” While a few students indicated a link between manufacturing and technology, the primary image that described manufacturing tended to focus on a negative perception of the manufacturing industry and sector.

Area/Regional High School Administrators

A single focus group among high school administrators was designed around three primary questions. The questions included a description of their schools or school districts, the career preparation and planning options available to and needed for their student populations and the nature of their relationships with business and industry. Each of these areas is explored in further detail in the following paragraphs.

Schools/School District Profiles

Two high schools and two regional technical/career schools were represented in the focus groups. Although the number of students served by the high schools varied as compared to the career and technical programs, the composition of the student body was very similar. Administrators reported that a
vast majority (ranging from 85% to 99%) of students were Caucasian. Minority groups represented included Hispanic, Asian and African American students.

The schools offered similar career and vocational preparation programs. Collectively, they offered programs in the following disciplines:

- Agriculture
- Transportation
- Culinary arts
- Welding
- Maintenance
- Public safety
- Fire science
- Technical and architectural design
- Health occupations
- Engineering
- Law enforcement
- Building trades
- Computer repair
- Computer networking

The high schools estimated a roughly 90% graduation rate, with attendance rates also between 90-95%. Of their graduates, roughly 80 – 90% typically receive some post-secondary education. Approximately 75% of these are estimated to complete post-secondary education at four-year, baccalaureate granting institutions.

**Student Career Preparation and Planning**

Administrators identified several career preparation and planning programs that are currently used throughout their schools/regions. These included:

- Internship programs
- Half-day work programs
- Interdisciplinary co-operative education programs
- Young Entrepreneurship Club (summer trial, 2009)
- Career Exploration “in the works”
- Job shadowing program (through English department)
- Guest speakers (academically oriented)
- Field trips to businesses and organizations
- Career surveys and interest inventories
- Completion of ASVAB by high school Juniors
- Completion of Community Service Project by Seniors
- Junior Achievement programs
- Half day career and technical programs
- Health clinical programs
- Student representative to town council
- School newspapers

Additionally, administrators described some of their more traditional career planning and preparation programs. More specifically, their career day and career fair programs seem to have declined, and, in some cases, been discontinued. This was based largely on a lack of participation and representation from businesses. Another example of a program in decline was a cooperative relationship established in the past with an area hospital that invited students to attend an organizational career day.

Some of the obstacles that have limited career and technical programs include the following:

- Staffs in those areas reduced by up to one-third
- Inability of small schools to recruit involved teachers
- Lack of curriculum integration – some students must pick an option that eliminates others
- Budgetary issues
- Time limitations related to 180 day school year
- Inability of schools to allow students to connect ideas to careers
- Balance questions of grade 9 – 12 (fundamentals versus career preparation)
- Overworked counselors (ratio often 1 counselor for 400-500 students)
- Counselor demands – lack of time to research workforce needs
- Disconnect between business, universities and high schools
- Department of Education demands on schools and reporting
Lack of integration between Department of Workforce Development and Department of Education

“Turf battles” between traditional disciplines and career/technical disciplines

**Relationships with Business and Industry**

According to administrators, efforts to establish and maintain advisory groups are a top priority. According to one administrator, “Education tends to reach out, but business and industry is very quick to give up on those efforts.” Another added that firms often have unrealistic expectations and that it is “Not our job to train kids to go to work for a specific company.” The group indicated that the options available to workers were too great for their institutions to be able to train workers.

The career and vocational administrators indicated that their partnerships with business and industry worked very well, and included negotiated partnerships, advisory committees, but that again most of the contact was initiated by those in education.

Administrators related that one of the key problems facing them in establishing relationships with business and industry was a lack of interest from students. As one administrator said, “The good students want more options and those who are performing poorly are not deemed good enough for companies.” The group indicated that those students who performed poorly in many instances had issues with work ethic and maturity.

The group indicated that more partnerships, in a variety of fields, were needed to help provide solid grounding and workplace exploration for their students. The group’s consensus was that students are eager to participate in workplace and career programs, but there were insufficient opportunities for them to do this. Another obstacle identified by the group was that many organizations hesitated to establish programs for students who were not yet graduates.

A final obstacle identified by the group related to business and industry partnerships was that governmental restraints and funding were tied to students pursuing post-secondary education, and not entry into the workplace.

**Area/Regional Manufacturing Industry Representatives**

Representatives from the manufacturing industry were asked to describe the process in which they recruited, selected hired and retained workers. Two distinct approaches emerged through the discussion. The first approach was that of the management personnel that supervised employees. The second was that of administrative personnel.

Management personnel focused on describing the process from interviewing potential candidates through training new hires. Administrative personnel focused on outreach and recruiting efforts of the organizations in order to attract applicants. The following paragraphs are organized according to these two perspectives:

**Management/Supervisory Perceptions**

In describing the interviewing process for new applicants, supervisors typically spent a great deal of time establishing a basic understanding of workplace expectations. These included “workday re-enactments”, general knowledge tests, and then the actual employment interview. Also included in the actual hiring process was a required drug screen for employees to complete. Prior to the interview, the organizations required potential employees to complete various tests at state employment organizations.

Supervisors described previous changes and rationale for those changes in this hiring process. They have also used temporary employment agencies, but tended to get away from that practice because they preferred having more control over the process, and also felt that the quality of worker was improved when this function was handled internally. Over time, the supervisors felt that drug screens were helpful,
but also problematic in that they often eliminated such high numbers of potential employees from consideration.

Supervisors did address external recruiting briefly, indicating that high school job fairs have been used at times, and that these were worthwhile events, but that newspaper advertisements tended to work best. Supervisors described their preferred or typical successful applicant as “good farm boys” with work ethic, but that still would require employer training. Temporary employees tended to yield less quality. They felt that “word of mouth” was effective, but were unsure of how to support that claim.

Supervisors identified a need for additional and more in-depth drug screening, as well as a workplace ethics course. They also pointed out some disconnect between state agencies’ understanding of their needs as compared to their actual needs. They also expressed interest in direct hires and advertising to “cut out the middle man.” Overall, they felt that potential employees needed a better overall understanding of the type of work and workplace demands. Supervisors additionally indicated that they needed more “skilled labor.”

Finally, supervisors indicated a frustration with the overall mindset for “young people” or a lack of general understanding of the workplace, including issues such as regular attendance. Issues that they felt contributed to this included a lack of parents teaching ethics, less structure for children who come from homes with two working parents, other home issues, and also the requirement of teachers to “teach to tests instead of to the workplace.”

Administrative Perceptions

Participants from human resources and one initiative comprised the administrative portion of the focus group. These individuals indicated that competition for quality employees was very tight, even those potential employees that would require remedial training. One of the potential solutions was a “career ladder” for those associated with state agencies. This has been developed to aid in retention efforts, as employees plateau very quickly and seek advancement options. The “career ladder” is promoted through newspaper, radio and promotional flyers, and is also promoted internally through state agencies.

Human resources personnel indicated that principles from regional high schools were working with them, and seemed to enjoy those relationships. One of the obstacles they have had to overcome with those relationships is that there is no established format or venue for that dialogue between industry/business and education. Some of the outreach efforts of businesses include:

- Career days, in which high school students attend work with parents
- J.A.G. (Jobs After Graduation) – a grant that focuses on students not likely to pursue higher education
- Projects for businesses – applied learning situations in which students gain “hands on” experience
- A Hospitality Committee that pairs different industry and business partners, which helps solve the disconnect among industries related to their needs
- Business to business partnerships that allows for shared resources, such as equipment for training financial resources and even shared training and “hands on” learning opportunities

These programs were identified as having mixed success, but largely needing to expand and become more commonplace to reach maximum effectiveness. Other opportunities for outreach and partnerships efforts that should be explored include:

- Chamber of Commerce partnerships (70% – 80% of companies belong to the Chamber)
- Focus on small business opportunities for students
• Programs to promote “being employable” and not a specific career, including issues related to attendance, drugs and personal financial management
• Additional career testing and inventory, which was “not being done by guidance counselors.”

One final idea related to increasing opportunities for outreach programs needs to be developed in more depth. The idea of improving and increasing marketing efforts to teachers, students and parents about future employment opportunities was identified as necessary to moving forward. This included marketing through Parent/Teacher/Student organizations, through teachers, universities, career centers, and using a variety of media to do so (online, print, television, etc.). The goal of such a program should be to change the perception of manufacturing jobs so that this is viewed as a viable career alternative.

A final note related to this group was the idea of funding for internship or training programs. While both administrators and supervisors supported the idea of “hands on” learning, the debate was focused over who should fund such programs. Supervisors indicated a hesitation to contribute any funding to these programs, such as paid internships or part time work/learning opportunities. Administrators questioned if any funding would be available from schools, programs or firms. There was no proposed resolution related to the issue of funding.

CONCLUSIONS

The findings from the present research represent the views and perceptions regarding manufacturing and industrial careers of various stakeholder groups. This section of the report presents an enumerated list of general conclusions based on these varied perspectives. The conclusions are as follows:
1. Students from area/regional high schools and vocational/technical schools and programs have insufficient access to career exploration activities, especially at an early age. Because of this insufficient access, these students begin career planning at late stages, many times as late as their final year of high school, and are frequently not able to name a specific occupation they will pursue.
2. Area/regional high schools have access to limited funding and resources (including human, financial and capital resources) to provide thorough career exploration and experiential learning activities and initiatives. Further limitations include the resource of time, given governmental regulations and requirements.
3. Business/industry outreach efforts to recruit promote manufacturing career opportunities are currently ineffective. This conclusion is based on the fact that various stakeholder groups such as students, faculty and parents have negative perceptions of the nature and future of manufacturing related careers.
4. Area/regional high school students have greater access to outside informational sources related to careers than ever before. While outside informational sources are available, they still primarily rely on the views, perspectives and experiences of parents, friends and family members.
5. Business/industry and their educational counterparts have varied expectations as to the role that one another should play in workforce development activities. Business/industry tends to view educational institutions in terms of preparing specific types of employees. Educational institutions view efforts from business/industry to become involved in the educational process as insufficient.
6. Attempts to collaborate between business/industry and educational institutions are loosely organized. An overall guiding structure or link between the two parties is not existent. Due to this, several initiatives are begun, but a lack of evaluation efforts leads to quite subjective and arbitrary decisions related to programs being discontinued or extended.
RECOMMENDATIONS

This section of the research is directly linked to the previous section, entitled “Conclusions.” More specifically, each recommendation numerically corresponds with the same number from the previous section of the report. The recommendation will provide guidelines as to how to address each conclusion moving forward. The recommendations are as follows:

1. Representatives from both business/industry and educational institutions must work proactively collaborate in order to increase not only career exploration activities for students, but also to establish clear occupational experiences and career planning for students. These opportunities should begin as early as possible; preferably before students reach middle school status.

2. Funding dilemmas would be improved through sharing of resources – across educational boundaries as well as shared resources among business/industry partners and educational institutions. These resources might include, but not be limited to, shared human resources (counselors, teachers, organizational recruiting personnel, etc.), shared financial resources (such as collaborative grant proposals, scholarship programs, etc.) or shared capital resources (such as training materials, equipment, tools, supplies, etc.). Funding issues might also be resolved through access to federal and state workforce development grants, partnerships with institutions of higher education and other third party sources.

3. Major marketing and public relations campaigns are necessary to alter public perception related to careers in manufacturing and other associated areas. The campaigns should focus on educational requirements of careers, project occupational outlooks (growth or decline), future salary expectations, quality of work, and quality of life considerations. Such campaigns should be carried out via multiple media outlets including, but not limited to, the internet, television, radio and print. Personal communication media such as social networking sites (Facebook, Myspace, Webjam) and podcasting would also be effective ways of reaching the primary target audience (students/future members of the workforce).

4. Due to the impact of family members, friends and parents in students’ career planning decision making, secondary major marketing and public relations campaigns are necessary to inform and persuade these stakeholder groups of the viability and advantages related to careers in the manufacturing sector. These campaigns would utilize more traditional media outlets, such as television, radio and print periodicals.

5. Standardized organizations and associations comprised of representatives from both business/industry and educational institutions should be created, maintained and/or fostered. These organizations must develop not only short term initiatives and plans, but also be expected/required to build long term documents, such as mission, vision and objective statements that yield long term planning in order to establish a “pipeline” of qualified, motivated future employees to area/regional manufacturing organizations.

6. A single area/regional organization should be established for the purpose of organizational and associational oversight. This organization would be responsible for establishing guidelines for individual groups and associations, compliance with national and state guidelines and mandates as well as program planning, implementation and evaluation efforts in the area/region. This organization might also serve as a clearinghouse for federal and state funding opportunities.
REFERENCES


