

VII. Research by the Rank-and-File

Come On In: Making Sheet Metal Apprenticeship Attractive in Rural Areas

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Abstract

Commute distance to class, fewer local work options, isolation from other members, unfamiliarity, and other factors can make the commitment to apprenticeship and industry association less attractive in rural areas.

In the interest of preparing for union sheet metal industry growth, this paper explores effective ways to arrange for and encourage sheet metal apprentice training and work in outlying areas. The intent is to allow apprenticeship to help in rural signatory job development, rather than be seen as a roadblock, due to unfamiliarity and arrangements difficult for those in distant areas to meet.

Survey analysis shows industry preference for apprentice work evaluations by the direct supervisor, changing work processes as minimum hours in each type are achieved. Employers, apprentices, and instructors were all overwhelmingly in favor of concentrated weeks of daytime related classes for apprentices in distant areas. Job development was valued just as important as recruiting candidates.

Recommendations made are based on increased emphasis on communication and evaluation of the apprentices in distant areas, implementation of concentrated weeks of daytime training for distant apprentices, and use of local community centers supportive of apprenticeship goals to enhance local connections and outreach.

Introduction

In the interest of preparing for union sheet metal industry growth, this paper explores effective ways to arrange for and encourage sheet metal apprentice training and work in outlying areas. Factors are identified that can make the commitment to sheet metal apprenticeship and industry association less attractive in rural areas. Ideas and opinions are researched to produce suggestions intended to let apprenticeship serve to organize and benefit apprentices and their rural employers, as intended, instead of becoming a deterrent through arrangements that make success difficult for apprentices in distant areas.

Commute distance to class, especially to evening classes, can become an extra burden on the apprentice in a distant area. Apprentice work in a distant area may or may not be a well-rounded experience. Isolation from other sheet metal workers is much more significant for the apprentice than the experienced worker, who can rely on previous learning and communications to work alone as a professional. The apprentice, on the other hand, is by definition to be learning the trade from others. Lack of association with other sheet metal workers can reduce learning, successes, and confidence, all of which are important to career development.

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If conditions for sheet metal apprentices in distant areas can be arranged to minimize the challenges particular to those areas, perhaps then we can encourage the development of such apprenticeships rather than pushing candidates and potential employers to seek “other options.”

Literature Review

Success often depends on how well an approach fits the situation. The U.S. Department of Housing and Urban Development, in its publication *How to Design and Deliver an Effective Job Readiness Training Program*, suggested 13 steps to accomplish that goal, including “Identify and evaluate employment strengths and barriers of the target population” (U.S. Department of Housing and Urban Development 1999). In a discussion of contributions of Malcolm Knowles, a central figure in U.S. adult education in the second half of the 20th century, Mark Smith noted “one of the central planks of his [Knowles] philosophy; that adult education must be free to respond to need, wherever it is discovered” (Smith 2002). Thus, an understanding of the need is essential if an appropriate educational response is to be determined.

Apprenticeship today involves a combination of paid on-the-job work experience and related coursework, progressing in steps toward completion and “journeyman” status. At a minimum, participants are the apprentice, a trainer knowledgeable in the trade, and an employer linked with a customer base to realize practical value and financial support.

Modern apprenticeships often involve much more organization. For example, the Shelley-Maloney Act of 1939 established within California labor law a “California Apprenticeship Council” and “Division of Apprenticeship Standards” as statewide apprenticeship agencies, as well as providing for management of local apprenticeship programs by joint or unilateral apprenticeship committees with apprentice and employer representation (Shelley-Maloney Act 1939). Many other states have similar state apprenticeship laws, and all states are also covered by the federal 1937 “Fitzgerald Act” provisions for operations of apprenticeship programs, forming a basis for recognized apprenticeship requirements and oversight.

The related and supplemental instruction coursework is arranged through a local education agency, usually a high school or community college, and, in quality programs, includes a broad enough background in theory and techniques to allow, as stated by Nick Boreham, “employees to under take a wider range of tasks and to respond more quickly and effectively to new work demands” (Boreham 2002). While government requirements are relatively well established, sometimes fluctuations have to do more with political changes than improvements in program quality (Boreham 2002, Sherlock 2006).

Variables and Recommendations

Given the general characteristics of apprenticeship, a closer look can be taken at some variables in arrangements, especially those that become particularly challenging in rural areas, and some suggestions given. A 1968 qualitative review of apprenticeship in North America, with most examples from northern California, discussed several issues regarding apprenticeship arrangements and effectiveness, most of which still have some relevance today (Strauss 1968). George Strauss reviewed the timing of classes, student attitudes, class discipline, instructors, instructional setting, instructional techniques, the relationship between the apprenticeship and the local education agency, and the emphasis of on-the-job versus classroom training.

Strauss’s suggestions included that “greater emphasis be given to homogeneous classes, pre-apprenticeship, manipulative training and final examinations” (Strauss 1968:236). Another review of apprenticeship contemporary with Strauss’s report uses job motivation and learning theories in assessing programs of the day. In the report, Doyle (1967) recommended that

“the apprentice who is given a legitimate problem situation, and who is encouraged to resolve and rectify it according to his skills, aptitude, and experience, and then is adequately rewarded for his behaviour will be much better prepared as a journeyman craftsman” (pp. 9–10).

A more recent variable using current technology is that of “online” training using the Internet. For some topics, online training would seem very helpful for the apprentice in a distant area, but because of the hands-on nature of sheet metal apprentice instruction, it may not be appropriate for a majority of the curriculum. Internet access may also be helpful for communication and documents required by the

apprenticeship office. Some other issues have risen regarding online training. Dylan Tweney acknowledges the Internet as a valuable research tool but says it cannot replace the complete learning experience. However, he suggests it can be used to help tie together communities of students and instructors and to handle some administrative functions more efficiently, allowing colleges to focus on teaching (Tweney 1999).

Sarah Mann discusses alienation that occurs for students in online training courses, arguing that while the Internet provides for a type of communication, it inhibits other types of communication essential for student development. She stresses the mutual understandings that develop between students as an important part of their progression and encourages more focus on supporting dialogue within online courses (Mann 2005). Such alienation could easily develop and be a barrier to a sheet metal apprentice's progress in distant areas. In regard to developing online courses, recommendations for developing online material revolve around keeping it interactive, with the student discovering bits of knowledge and using those to move through the program (Notar, Wilson, and Ross 2002). Thus, the Internet could be helpful for a small amount of the apprenticeship classes in a distant area, using existing math tutoring software or a video or in a research assignment, for example. It could also be valuable for communication, exchange of data, and perhaps to assist with evaluations, depending on Internet access.

Class scheduling is a variable that may draw certain suggestions for apprentices in distant areas. The earlier study of George Strauss suggested distant areas consider the "Ontario system," which had apprentices complete a concentrated class schedule for a whole month during the winter (Strauss 1968). There have been more studies that tend to confirm his suggestion for daytime concentrated class training. Richard P. Benkowski (2005), in a research paper titled *Traditional vs. Concentrated Training*, refers to the work of Howard McClusky while evaluating apprenticeship class scheduling options. According to Roger Hiemstra, McClusky, who is known for his adult education theory of "margin," also had experience and interest in development of rural communities. In 1938 he led the Kellogg Foundation project that helped to establish the university extension service, designed to place universities in rural areas to assist in development.

McClusky's margin theory of adult learning established a relationship of an adult's "margin" for learning being equal to the person's "load" divided by their "power," where load equals the person's self and society demands (family, occupational, social, etc.) and power equals the person's internal and external resources (health, wealth, resiliency, coping skills, personality, etc.). An appropriate "margin" is seen as a prerequisite for learning success (Hiemstra 1981/2002). Benkowski applied margin theory to apprenticeship with the conclusion that concentrated daytime training is much more effective than evening classes for apprentices. Dana Shanower and Gary Fernstrum separately applied the work of other researchers on sleep and fatigue to apprenticeship class scheduling, again concluding daytime training was more effective, outweighing daytime schedule challenges for employers and instructors (Shanower 2003, Fernstrum 2006).

For the apprentice in a distant area, as the travel time and expense to attend evening classes increases, distant evening classes become impractical, ineffective, and even unsafe, while the factors pointing to daytime training increase. Several trades use concentrated training for apprentices in distant areas today, and some even provide lodging assistance or allowances for those beyond a specified distance from the training facility.

Other Considerations

Lifelong learning, or continuing education, is more commonplace as technological improvements, cultural changes, and knowledge base increase (Knowles 1975). The apprenticeship program is sometimes involved in continuing education and would hopefully consider arrangements for the "upgrade training" along with apprentice arrangements.

Applicant, "pre-apprenticeship," or "trade preparation" classes are generally offered to make potential workers aware of expectations for them in the industry. Students prepare for the apprenticeship application process and the work environment of the trade. Classes often include apprenticeship application information, trade overviews, basic math and communication skills, and safety awareness, and they emphasize strict attendance. Some students use such classes to decide whether to pursue an apprenticeship. Classes may be sponsored by the apprenticeship program, local education agencies, or community development groups ("Awards" 2006, Strauss 1968). Because such classes are viewed as a service to the community and student, as well as a method to accumulate better-prepared applicants for the apprenticeship, they are viewed as an important link to apprenticeships (Gill and Gill 1994). Such programs also help recruiting, or outreach, as

they are often promoted within the community. Since these programs often are operated, if not funded, by local groups for local clients, and because they enhance local awareness of apprenticeship opportunities and positive community connections to the trades, it would seem best for them to operate in each locale, rather than in a more centralized training arrangement, which has been suggested for the sheet metal apprenticeship itself. On a cautionary note, the integrity of each program should be checked to ensure it is serving as a true link to apprenticeship and realistic career development rather than an arrangement to funnel unsuspecting individuals into dead-end jobs. (I have witnessed both.) Finally, maintenance of the relationship, or connection, is important, and this can take time in visiting and revisiting.

An English study on rural training needs recognized a “rural workforce may in fact be significantly disadvantaged in its access to suitable training” and noted needs not only on the worker level but also for management training by the smaller and self-employed businesses prevalent in rural areas. Local community training centers were suggested to make the connection with training providers and those in need (Bennett and Errington 1990). Local schools, employment offices, labor centers, community centers, and libraries could be locations to facilitate recognized “trade preparation” classes as well as possible management or special upgrade training and could provide Internet access for apprentices in distant areas to communicate with the sheet metal training facility.

Regarding Change: Perceptions and Prior Agreements

Recommendations for training methods and community connections can be derived from the research presented thus far, but what else might be involved in making changes? Why wait until there are enough apprentices to support a local facility (if that will happen) when apprenticeship can already serve as an active employee and industry development program in distant areas? How would the industry embrace recommendations of research, and would there be other suggestions from the industry itself? The answers to these questions involve consideration by others, but what can be researched within the scope of this paper are perceptions about apprenticeship in distant areas, especially perceptions of those within the industry. It would seem appropriate to investigate what the industry thinks about provisions for sheet metal apprenticeship in distant areas.

Methodology

I set out to explore industry opinions on effective arrangements to encourage sheet metal apprenticeship in outlying rural areas, approximately 75 miles or more from an existing training facility in northern California. Data to be collected included industry opinions, so that those could be compared with research and considered as part of any concluding recommendations. There is much to consider in arranging apprentice training. Among the most significant, but *not* included in this study, are wages and working conditions, which cannot be ignored but are held out for others to discuss.

Four key issues have been selected for the discussion here:

- Periodic jobsite training and progress evaluations
- Employer participation with work training in various processes
- Related instruction scheduling
- Outreach for recruitment and development of opportunities

Training coordinators, apprentices, employers, and instructors were identified as preferred data sources because of their significant and direct participation in apprenticeship training, from varying perspectives. Sources were selected in a sampling to reflect typical industry ratios. A stratified random sampling was used, in an attempt to include a variety within a representative sample of the industry. (An appendix with sample details is available on request.) Only apprentices in the latter half of their apprenticeships were queried, as they would be more likely to understand the questions and implications of possible arrangements. All apprentices queried were in a five-year apprenticeship program in the sheet metal industry. The region of California north of San Francisco was selected because it contains a variety of training arrangements, larger and smaller employers, and both somewhat developed and rural areas. Four Sheet Metal Joint Apprenticeship and Training Committees (JATCs) from the North Bay, East Bay, and Sacramento-

Stockton areas cover the entire area, and participants under all these JATCs were included. Data for the Sacramento and Stockton areas were collected together because the apprentices attend classes together. The northern California area also encompasses issues and areas discussed in this paper.

A survey was generated using existing literature along with my own experience and the suggestions of other training coordinators regarding the apprenticeship factors being evaluated. To refine the process, a pilot was conducted. Training coordinators participated in the pilot because they deal daily with questions of how to provide training. A few high school and middle school students (7th–10th grade) assisted in pilot reviews to improve readability.

Due to their relatively small numbers and participation in both recommendations presented and survey pilot development, training coordinators were not queried in the final survey of industry opinions. Comments received following the pilot survey were used to make adjustments before sending out the final survey. Participants were advised that their names and contact information would be withheld from reported data. (An appendix with survey and cover letter is available on request.)

A participation rate of 90% was expected for the survey pilot because of prior commitments to participate. A participation rate of 40% was expected for the final survey because of a cover letter and either hand-delivery or self-addressed envelopes provided for participants. Final surveys were distributed to 134 people; 107 were completed and recorded, for an overall final survey participation of about 80%.

Even though the factors evaluated cover important considerations for rural apprenticeship training, the study is naturally limited because all possible factors were not evaluated. Because my past experience might be a bias, options were not developed by me alone, but also from literature suggestions and recommendations of other training coordinators with a variety of experience in training arrangements.

Past experience of the participants may have affected their choices. Selection of participants was done to reflect a variety of past experiences. Choices were explained carefully.

Surveys are sometimes not taken seriously. It was explained in the survey preface that the information was for a research project for a degree program but that it should also be taken seriously because it could lead to important changes for people in the industry. (Boundaries to possible resulting implementations may include permissions and approvals of those involved, collective bargaining agreements, standards, or other local apprenticeship rules, all of which are fixed but changeable over time.)

Data Presentation and Analysis

A stratified random sampling was attempted, with reasonably accurate results, to reveal employer, instructor, and apprentice opinions on possible arrangements for apprenticeship in distant areas. (An appendix on sample development is available on request.) Of the 107 people for whom results were tabulated, 84 reported their company does work in distant areas, 71 reported having worked in distant areas themselves, and 20 had lived in distant areas. Of the 19 employers responding, 15 had completed an apprenticeship in their trade. It was noticeable that most employers and instructors provided optional comments, whereas few apprentices provided the additional insight.

The following data and analysis are organized by the four key issues surveyed.

Periodic Jobsite Training and Progress Evaluations

Evaluation of apprentice progress is essential in providing a quality program. It enables responses to both problems and successes. Methods of evaluating apprentices in distant areas were ranked by preference and suggestions were gathered for the maximum time between evaluations. Responses for each item were averaged to produce the relative ranking overall, as shown in Table 1. The data show a preference for employers to make evaluations of apprentice on-the-job progress, which is common, with oversight by others as needed.

While all preferred an employer evaluation, the employers demonstrated more difference between the methods suggested, preferring employer and coordinator evaluations. (An appendix with actual survey questions is available on request.) Overall, employer and apprentice evaluations seem most preferred.

Regarding the frequency of these same evaluation methods, there was less variation among the responses of employers, instructors, and apprentices. While most suggested an evaluation every 6 months, which is common practice already, the next most popular frequency was every 3 months.

There were also greater numbers opposed to jobsite visits by the training coordinator and by union business representatives. Perhaps the visits are seen as inaccurate evaluations, not cost effective, or disruptive

TABLE 1
Ranking of Evaluation Methods for Apprentice On-the-Job Training

	Rank by employers	Rank by instructors	Rank by apprentices	Overall rank
Employer evaluation	1.26	2.00	2.13	1.96
Apprentice evaluation	3.00	2.33	2.19	2.35
Coordinator jobsite visit	2.32	2.33	2.70	2.60
Union rep evaluation	3.44	2.33	2.95	3.06

1 = first preference, 4 = last preference, listed in order of overall ranking.

Average rankings shown.

to the jobsite, or perhaps the responses were an indication of things happening at the jobsite that ought to be investigated. The question illustrates the need for reliable communication between the distant areas and the apprenticeship office, if not others.

Employer Participation with Training in Various Work Processes

Closely related to the method of on-the-job evaluation is employer participation with work training in various processes of the trade. Monitoring training in the various work processes is essential; it could be combined with the evaluations and/or approached separately.

The survey asked respondents to rank five approaches to ensure employer training of apprentices in distant areas to become well rounded sheet metal workers (see Table 2).

TABLE 2
Methods to Ensure On-the-Job Training in Various Work Processes

	Rank by employers	Rank by instructors	Rank by apprentices	Overall ranking
Change as minimum hours reached	2.21	3.00	2.49	2.47
Rewards for work process advancement	2.26	3.50	2.64	2.62
Change employer every 6 months	4.26	2.00	2.96	3.14
Change per in-class review	3.26	3.00	3.41	3.36
Change monthly within company	3.00	3.50	3.60	3.49

1 = first preference, 5 = last preference, listed by overall preference ranking. Average rankings shown.

While it seems the employers have an aversion to an employer change every 6 months and others do not feel so strongly, the overall preference is to monitor hours until the minimum is reached and change work processes accordingly. Such a method relies on accurate tracking, which in turn relies on effective correspondence and communication, as discussed with evaluation methods. Notice this method involves a change when a minimum is reached. A process for tracking time and changes is key.

Scheduling of Related Instruction

Scheduling of related instruction for apprentices has been arranged in many ways, ranging from a full month of daytime classes during the winter to a few hours in the evening each week. What is most appropriate depends on the curriculum as well as many other factors, including the issues of distant areas (Strauss 1968, Hiemstra 1981/2002, Fernstrum 2006). In addition, some training could be affected by developments in online training (Tweney 1999; Mann 2002; Notar, Wilson, and Ross 2002).

Survey participants included 14 apprentices currently attending week-long “concentrated” day training sessions, and 68 currently attending evening sessions, although others had experienced different arrangements in the past. Opinions were gathered on class arrangements for effective learning for sheet metal apprentices in distant areas by asking for ranking of six different options. Refer to the results in Table 3, which showed the class schedule of concentrated one-week daytime training to be a popular recommendation of employers and apprentices. Typically apprentices would attend such a concentrated week of class four or five times a year.

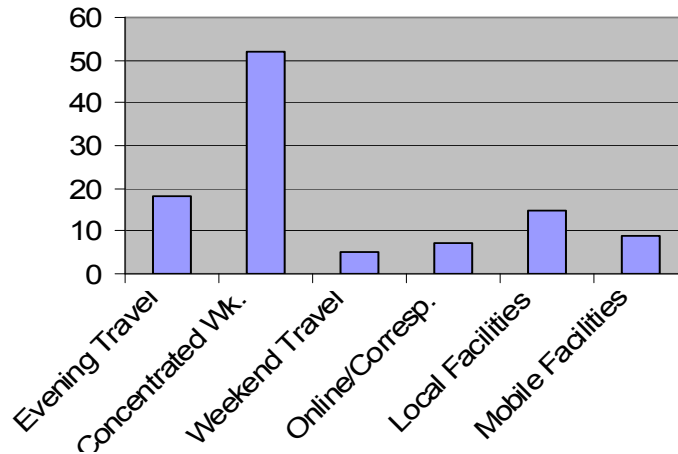
TABLE 3
Opinions Ranking Related Instruction Arrangements for Learning Effectiveness

	Rank by employers	Rank by instructors	Rank by apprentices	Overall ranking
Concentrated week	2.74	2.00	2.25	2.32
Local facilities	3.06	2.83	3.14	3.16
Evening travel	3.39	3.50	3.54	3.51
Mobile facilities	4.28	2.83	3.65	3.71
Weekend travel	2.83	4.67	4.30	4.07
Online/correspondence	4.47	4.17	4.07	4.15

1 = first preference, 6 = last preference, listed by overall preference ranking for apprentices in distant areas. Average rankings shown.

Related training arranged in concentrated weeks of daytime classes was by far the choice of preference. This was the first topic surveyed where those in all positions (employer, instructor, and apprentice) agreed on the first choice. In contrast, one comment about weekend training suggested several weekend sessions would encourage a lot of absenteeism, with all the family and other activities after a week of work. Another comment suggested that some supplemental coursework could be done online, with travel for hands-on training as arranged at a central facility. The concentrated weeks of daytime training choice is also strongly supported by previous research (Shanower 2003, Benkowski 2005, Fernstrum 2006). In fact, it was more evident when the number of first choice indications were counted for each method. The number of first choice ratings for each option are graphed in Figure 1, which plots the number of times an arrangement was chosen as the first choice.

FIGURE 1
Rural Area Related Class Scheduling by First Choice Selections



Week-long concentrated training was the very popular choice for effectiveness in the rural environment. As previously discussed, many of the factors pointing to daytime training for sheet metal apprentices are much more extreme for the apprentice in distant areas.

Another question asked respondents to rate schedule options by cost effectiveness. Table 4 presents opinions about the most cost-effective training.

Concentrated daytime training was rated most effective by a large margin, and by every group. The remaining options were therefore considered either high in cost, low in effectiveness, or both.

Concentrated weeks of daytime training require preparation and planning. Instructors must have a curriculum and lesson plans ready for the week. Materials and equipment needed must be in place. Employers

TABLE 4
Opinions Ranking Related Instruction Arrangements for Cost-Effectiveness

	Rank by employers	Rank by instructors	Rank by apprentices	Overall ranking
Concentrated week	2.32	2.17	2.41	2.38
Local facilities	3.39	4.33	3.17	3.28
Evening travel	3.67	3.00	3.69	3.65
Weekend travel	2.83	4.00	3.99	3.79
Online/correspondence	4.37	4.50	3.72	3.88
Mobile facilities	4.22	3.00	4.01	3.99

1 = first preference, 6 = last preference, listed by overall preference ranking For apprentices in distant areas. Average rankings shown.

must arrange for the apprentice not being at work for a week. Apprentices must arrange their personal schedules and do any preparatory work.

Nevertheless, in the opinions of employers, instructors, and apprentices surveyed and also according to previous research, this is by large margin the method of choice, for both instructional effectiveness and cost efficiency, for apprentices in distant areas.

Outreach for Recruitment and Development of Opportunities

In this study, outreach was discussed later not because of less importance, but because preparation for quality sheet metal training is part of the “commodity” to promote in the outreach. Outreach is making people aware of sheet metal apprenticeship and industry opportunities. Outreach is blending the program and the industry with people’s needs. Outreach is becoming part of the community, in the eyes of the community at large.

Respondents were asked to rank the several recruiting outreach activities in order of their perceived effectiveness. Results, shown in Table 5, show activities common to close-in areas chosen as the more popular ones for rural areas as well.

TABLE 5
Opinions on Effectiveness of Recruiting Activities

	Rank by employers	Rank by instructors	Rank by apprentices	Overall ranking
Distribute literature at schools	1.89	2.00	2.63	2.47
Local career fairs	2.68	2.50	2.80	2.77
Publish website	3.37	2.50	3.51	3.43
Speak with community groups	3.53	4.17	3.51	3.55
Ads to nonsignatory employees	4.26	5.17	3.78	3.94
Ads to nonsignatory managers, employers	5.26	4.17	4.76	4.81

1 = first preference, 6 = last preference, listed by overall preference ranking for apprentices in distant areas. *Average rankings shown.*

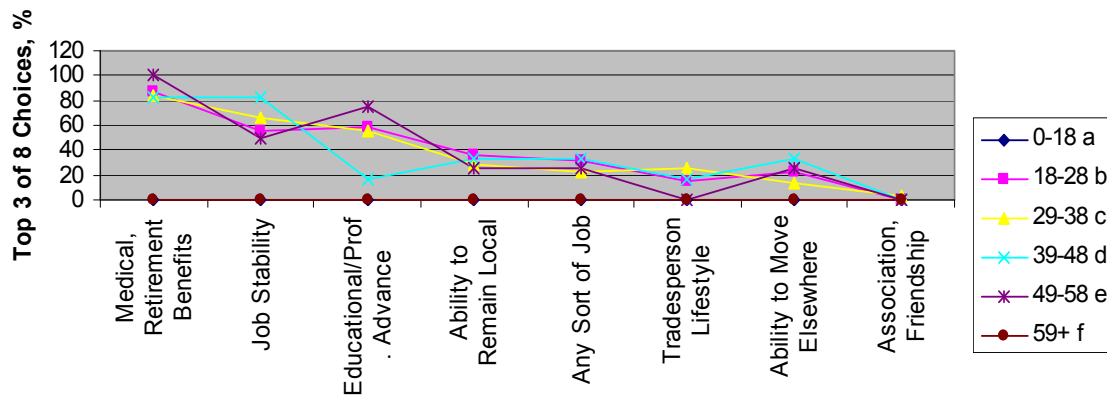
Distribution of apprenticeship information at schools and participation in local career fairs, ranked first and second, are common activities near training centers, but additional resources might be required to extend this to local areas. The third ranked option, to publish a website, may help cost effectiveness and reach. Previously cited information suggested working with a local center (Bennett and Errington 1990). A combined use of these four activities may have a synergistic effect, as one could enhance the other.

Respondents were asked to choose the top three of eight items that candidates might be looking at and which might make the apprenticeship inviting to them. The overall ranking resulted as follows:

1. Medical and retirement benefits
2. Job stability
3. Educational/professional advancement
4. Ability to remain local
5. Any sort of job for income
6. Lifestyle of a tradesperson
7. Ability to move to other areas
8. Association and friendship with others in the industry

To see if there was a different ranking by younger apprentices who might show values closer to those of prospective candidates, the results for apprentices only were sorted by age. The apprentice-only data is graphed by age groups in Figure 2.

FIGURE 2
Apprentice Opinions: Response by Age



While there were some variations, a difference in ranking from the overall ranking was not clear with the apprentice age groups. As with the overall responses, medical and retirement benefits, job stability, and educational and professional advancement were generally ranked above the ability to remain local or to move away and other possible motivations ranked by those surveyed. It was noted of the top three identified, while benefits and advancement are typically relatively secure for apprentices, job stability might be more elusive. Therefore, if more job stability can be provided, it may encourage sheet metal apprenticeship more in distant areas. A suggestion could also be made to emphasize the higher rated items in applicant recruiting efforts. One additional comment was that “people may not know what options are available outside their local area. People in distant areas could possibly be hardworking, strong members if they were more informed about the program.” Perhaps this comment illustrated well the need for recruiting efforts.

Recruiting and development of opportunities for apprentices is very closely tied to the development of work for signatory employers. The survey questioned which was more important and which, if either, should occur first. Results are shown in Figure 3 and Table 6.

Most agreed that outreach to develop employment is as important as recruiting apprenticeship candidates, and it is helpful before recruiting candidates. Regardless of which comes first, the importance of jobs and successful sheet metal apprentices to each other is firmly established.

Public awareness of what signatory sheet metal employers have to offer and employer awareness of what the apprenticeship has to offer can lead to employers' signing on with the program and local agencies' supporting apprenticeship in their job letting. In reality, awareness and confidence develop in many ways simultaneously, and small successes tend to feed larger successes. In one way, the question of how to accomplish employment outreach brings the discussion back full circle to providing for apprenticeship in distant areas, which can enhance small successes that develop relationships and lead to larger successes.

FIGURE 3
Opinions on Job Development vs. Recruiting of Apprentice Candidates

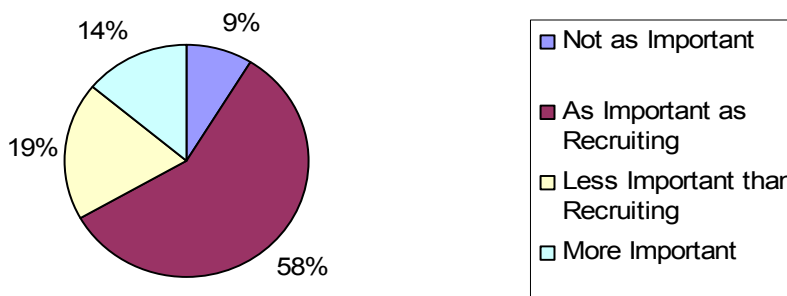


TABLE 6
Timing of Outreach to Develop Employment

	Employer	Instructor	Apprentices	Overall
Before recruiting candidates	81	67	58	64
Only after apprentices available	19	33	42	36

Percent of total responses shown.

Conclusions

This paper involved research on apprenticeship and adult learning as can be applied to the goal of encouraging sheet metal apprenticeship in distant areas. In addition, industry perceptions were surveyed because they are part of the reality of encouraging the apprenticeship. These are the opinions of the industry that will support, or not support, sheet metal apprenticeship in rural areas.

An interesting follow-up study might include research and ranking of outreach and other ideas by potential sheet metal apprentice candidates and possible employers in rural areas. The opinions of those not involved in the program may shed additional light on how the apprenticeship and industry can work better in rural areas.

Recommendations

In consideration of the information presented here, the following recommendations are proposed for implementation, to enhance apprenticeship in rural areas:

- *OJT review:* Make a conscious effort to review progress of the apprentice, using a combination of written evaluations involving the apprentice's direct supervisor as well as upper management and occasional jobsite visits by JATC representatives as needed. Jobsite visits should include opportunities for problem resolution and suggestions, as well as monitoring progression through the various work processes. As minimum hours in a work process are approached, change work processes for a well-rounded experience.
- *Extra communication efforts:* Recognize that it is important for the apprentice in a distant area to associate with other apprentices in learning situations, as this increases motivation and learning opportunities.

Involvement in apprentice contests, orientation sessions, regular classes together, and a variety of on-the-job situations can help facilitate this.

Provide for periodic contact with the JATC office, such as requiring a phone call or e-mail every week. Determine how required forms will be submitted.

- *Concentrated week scheduling for related instruction:* Use concentrated daytime apprentice training schedules, bringing apprentices to established training centers. An example would be to arrange for a full week periodically for related classes to best meet training needs of apprentices in distant areas. Supplement a small amount of the concentrated training with appropriate online training as it develops.
- *Participation with local communities:* Associate the apprentice program with quality trade preparation or “pre-apprenticeship” classes by role of industry advisor and recognition of those who complete classes. Use these connections to help filter and prepare candidates as well as develop local public awareness and support for industry opportunities.

Explore connections with local centers, supportive of the apprenticeship goals, that may provide a local presence and facility for Internet access and general study for apprentices in distant areas. It would encourage local community involvement if such centers also served as locations for trade preparation classes and other local activities. In some areas, cultural assistance and courses in English as a second language may be appropriate and beneficial. Coordinate outreach and preparation class efforts with other trades for efficiency and representation in the community as appropriate.

- *Support employers and policies that encourage jobs for apprentices:* Encourage or provide training for employers, to assist in business operations and development of signatory employment for apprentices. Consider upgrade training for journeypersons, as needed. As apprenticeship arrangements are implemented, promote apprenticeship benefits to potential employers and agencies that may affect apprentice job opportunities in the distant areas. As employment develops, increase recruiting efforts in the local area, emphasizing benefits, professional advancement, and other advantages to applicants.

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