This symposium on issues in training consists of three presentations. "Improving Customer Service Training in Korea" (Namhee Kim) reports findings from interviews of customer service employees who identified these customer service issues: training for service recovery is needed; additional service gives a strong impression to customers; good and bad service behaviors are not in the same areas; empowering customer service employees is necessary; training cannot cure all customer service problems; and technology plays a critical role in customer service and employee training. "Organizational Culture and Training Effectiveness" (Kay J. Bunch) examines the link between organizational culture and training effectiveness based on a review of literature related to organizational culture and subcultures, organizational context, transfer of training, and occupational professionalism. "The Intersection of Training and Careers: An Examination of Trends of Vocational and Professional Certification and a Call for Future Research" (Shani D. Carter) examines the increase in the number of skill certifications available, discusses legislative causes of these increases, and notes the current lack of published peer-reviewed analyses of statistical validity of certification exams. All three papers include substantial bibliographies. (YLB)
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Improving Customer Service Training in Korea

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Customer service employees in five Korean companies were interviewed to identify good and bad customer service behaviors, using critical incident technique. The findings were: training for service recovery is needed; additional service gives a strong impression to customers; good and bad service behaviors are not in the same areas; empowering customer service employees is necessary; training cannot cure all customer service problems; and technology plays a critical role in customer service and employee training.

Keywords: Customer Service Training, Critical Incident Technique, Korean HRD

In the past several decades, service industries have grown rapidly and generated a number of new jobs. The importance of managing the relationship with customers has become critical in the service field, and many researchers have explored the complex behaviors between customers and service employees. Although training for front-line service employees has been considered to be critically related to customer satisfaction (Brewer, 1995; Johnson, 1996), there is relatively little research that provides practical implications for customer service training. Questions regarding effective customer service training still remain (Grimm, 1990; Johnson, 1996). Recently, Russ-Eft, Berry, Boone, and Winkle (2000) identified five major customer service competencies: see the “big picture” and how customer service fits into it; establish an authentic human connection with each customer; render timely, accurate and thorough service; value and respond to unique customer needs; and extend a hand to repair and strengthen relationships with customers who are upset or angry. This was conducted with North American organizations.

In Korea, since the 1980s, the concept of customer service has been widely used in many industries, but it has not been vigorously researched from a Human Resource Development (HRD) perspective.

The purpose of this study is to investigate what constitutes good and bad customer service behaviors in Korea. The types of HRD efforts that are needed to improve customer service training in business organizations in Korea will be also discussed.

Research Question

The main research question of this paper is, “how can customer service training in Korea be improved?” Two specific questions are explored: first, what good and bad customer service behaviors occur between customer service employees and customers?; second, what are the implications of the findings for improving customer service training in Korea?

Literature Review

There are different approaches to customer service in the research literature. It seems important to clarify how those approaches are different and what their focuses are.

First, there is an approach to customer service from a service encounter framework that focuses on interpersonal elements between customers and employees (Czepiel, 1990; Lockwood & Jones, 1989; Mill, 1986). Solomon, Surprenant, Czepiel and Gutman (1985) defined service encounters as “face-to-face interactions between a buyer and a seller in a service setting” (p.100). The conceptualization of customer service from the service encounter framework contributes to a better understanding of the social nature of service interactions (Czepiel, 1990).

Second, a great deal of research has dealt with customer service from a customer satisfaction framework (Drew, 1994; Rust & Zahorik, 1993; Woodruff & Gardial, 1996). Customer satisfaction refers to a customer's feeling, whether positive or negative, about the value received as a result of using a particular organization's offering in a specific situation (Woodruff, Schumann, & Gardial, 1993). Based on this framework, constructs, processes and

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outcomes, and evaluation tools for customer satisfaction have been identified (Erevelles & Leavitt, 1992; Lai & Widdows, 1993). Recently, a wide variety of US service firms have implemented service guarantees as the ultimate strategy to ensure customer satisfaction. They set clear service quality standards and have explicit policies to compensate customers when the standards are not met (Hays, 2000).

Third, a service quality framework is a managerial approach to customer service (Kelly & Hoffman, 1997; Parasuraman, Zeithaml, & Berry, 1994). The concepts of customer satisfaction and service quality have often been used together because of their similarity (Cooper, Cooper, & Duhan, 1989). According to Czepiel (1980), customer satisfaction as a marketing issue becomes a service quality issue when we focus on operational management or personnel management. In this regard, the service quality approach relies on judgement. It is viewed to be the overall evaluation of a specific service that results from the comparison of customers’ expectations and actual performance of the firm (Lewis & Booms, 1983).

Fourth, a term, customer loyalty, is widely used as the ultimate goal of service activities. It refers to customers’ willingness to repurchase from a particular firm (Hays, 2000). It is the consequence of customer satisfaction and/or high quality service.

In summary, it is hard to clearly separate the concepts of service encounter, customer satisfaction, service guarantees, service quality, or customer loyalty because they are intimately related although their focus seems different. Even empirical studies often use those concepts with no attempt to distinguish them (Hays, 2000).

Customer Service Training in Korea

The concepts of customer service, satisfaction, or quality have been interchangeably used in customer service literature in Korea, which need to be clearly defined. However, in the training field, the term customer service training is commonly accepted to indicate the educational courses and developmental efforts, which are geared to enhance skills and knowledge for better customer service. For this reason, customer service training is used in this study.

Due to the lack of data in Korea, it is possible only to assume the current status of Korean customer service training, depending upon indirect sources of information. In fact, the annual expenditure or detailed program contents or methods of customer service training is not available. Some survey results can help partly explain customer service training. For example, Ahn and McLean (1993) surveyed 300 Korean companies to research the status of training. It did not include specifically the category of customer service training. Instead, it showed that more than 50% of companies participating in the survey provided interpersonal skills (or human relations), listening skills, problem solving, quality improvement, or stress management to their employees, and it is assumed that these programs might be provided for the purpose of improving customer service. When the Korean Management Association (KMA) (1992) surveyed HRD employees at 1000 large companies in various industries, current key issues in employee education were presented. One of the key issues identified in the survey was sales reinforcement and salesperson development, which is a part of customer service training.

Recently, some customer service studies have been conducted (Choi, 1999; Jang, 1998; Park, 1997; Won, 1997). These studies discussed perceptional differences on service orientation between managers and employees in the hotel industry (Choi, 1999), and investigation of service level of the service employees and perception of customer service training in the tourist industry (Won, 1997). In addition, they compared the perception on customer satisfaction between employees and customers in finance industry (Jang, 1998), as well as a case study of current status of customer satisfaction in a company (Park, 1997).

Methodology

Critical Incident Technique (CIT) was used for data collection of good and bad examples of customer service behaviors. CIT has often been used in marketing and service research since it is useful to collect specific incidents of effective and ineffective behavior of certain areas (Bitner, Booms, & Mohr, 1994; Bitner, Booms, & Tetreault, 1990; Edvardsson, 1992). Therefore, it helps develop the critical requirements of occupational activity (Flaganan, 1954; Ellinger & Watkins, 1998), by capturing interactive behaviors among engaged personnel, and it also provides basic information for effective training in a certain area (Ellinger et al., 1998).

Data Collection

The data were gathered in AchieveGlobal Inc. in 1998 by a researcher who was responsible for gathering data from Korea and used for this study by permission. For samples, the researcher contacted the Korean affiliate of
AchieveGlobal Inc. in order to find business organizations that might be interested in this research. Five companies were referred to, and all were willing to participate in this study. The types of industries of the companies were not considered because this study was not designed for application to one specific industry. Each company recommended five to eight customer service employees who had direct contact with customers in the company to the researcher. The researcher contacted 27 people to explain the research, and 24 agreed to participate.

Table 1. Summary of the Participating Companies

<table>
<thead>
<tr>
<th>Company</th>
<th>Type of Business</th>
<th>Number of Employees</th>
<th>Primary Customers</th>
<th>Number of Interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Retail</td>
<td>200</td>
<td>Consumers and business</td>
<td>7</td>
</tr>
<tr>
<td>B</td>
<td>Transportation</td>
<td>55</td>
<td>Consumers and business</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Basic manufacturing</td>
<td>3,000</td>
<td>Consumers and business</td>
<td>5</td>
</tr>
<tr>
<td>D</td>
<td>Hi-Tech manufacturing</td>
<td>55</td>
<td>Business</td>
<td>3</td>
</tr>
<tr>
<td>E</td>
<td>Business services</td>
<td>3,800</td>
<td>Business</td>
<td>6</td>
</tr>
</tbody>
</table>

Interviews were conducted by the researcher in Korean over the phone. Each interview lasted around 30 minutes. Examples of the basic questions were:

- Think of a time within the past month when you or someone else provided outstanding service to a customer.
- Think of a time within the past month when you or someone else failed to meet the needs of a customer.

Each question has sub-questions as follows: (a) What did the person do? (b) What was the situation? (c) How did that customer react? (d) What was the result of this behavior? and (e) What was this person's title and position in your organization?

Data Analysis

Analysis of the incidents followed the guidelines introduced by Flanagan (1954), and detailed by Ellinger and Watkins (1998). First, after interviews, the researcher produced transcripts in Korean, which were then translated into English. Second, reported incidents were classified through repeated, careful inspection of the records, then, the broad grouping was made as a result of comparison of similarities. One group of incidents was related to core service and the other was related to additional service. Third, this broad grouping was more refined by repeated sorting and combining process. Finally, several subcategories under two major categories were identified. This clustering process is critical to establish the trustworthiness of resulting data (Bitner, et al., 1985; Grove & Fisk, 1997).

Often, respondents mentioned several behaviors for each incident, suggesting that people tend to view a case as satisfactory or unsatisfactory for several reasons. Therefore, one incident might produce several successful or unsuccessful behaviors in different subcategories. As a result, although the original total was 88 incidents (44 of good examples and 44 of bad examples), 112 behaviors (60 of good behaviors and 52 of bad behaviors) were identified as seen in Table 2.

Results

Group I: Core Services

Group IA: Interpersonal behavior. While the employees are providing basic service to customers, their interpersonal behaviors, such as kindness, politeness, or sincerity provide customers with satisfactory impression. In contrast, rudeness, ignorance, lies, unfriendliness, or impoliteness leaves bad memories with customers.

Group IB: Communication behavior. The employees' communication skills tend to be critical for good customer service (n=12). During the conversation, if the employees are patient, good listeners, or provide enough information, and continue to follow-up, customers feel satisfied with those behaviors. If not, customers remembered their experience as poor service.

Group IC: Seamless service. Accurate, seamless services are welcomed by customers. Flawed, incomplete, and inaccurate services are considered poor.

Group ID: Timeliness. Quick, timely response to customers' questions or requests is reported as favorable. Timeliness is often addressed with other items together. (e.g., timely seamless service, or fast claim solving). Typically, poor service examples related to time issues, including missing a contracted date or time, or
keeping customers waiting.

**Group 1E: Claim or problem solving.** How to respond to customers' claims and how to solve the problems influence the customers' perception about the service. Under the same circumstances, if employees are willing to take care of claims or problems and show attentions to the customers' request, it is very likely to provide them with a memory of excellent service. If employees just avoid the responsibility or defend the company or themselves, it results in a very bad impression. Service recovery appears to be critical in the customer service field.

**Group 1F: Bending or not bending rules.** In each organization, there are some rules and work processes which the employees need to follow. Although the employees are supposed to follow internal guidance, if they bend the rules for customers, the customers favorably remember the experience. In contrast, rigid rule application or irrational work procedure makes customers feel uncomfortable.

Table 2. Frequency of Customer Service Behavior by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Types of Customer Service Behavior</th>
<th>Good</th>
<th>%</th>
<th>Bad</th>
<th>%</th>
<th>Row Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1: Core Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Interpersonal behavior</td>
<td>Good</td>
<td>4</td>
<td>6.7</td>
<td>6</td>
<td>12.0</td>
<td>10</td>
<td>9.1</td>
</tr>
<tr>
<td>B. Communication behavior</td>
<td>Good</td>
<td>12</td>
<td>20.0</td>
<td>7</td>
<td>14.0</td>
<td>19</td>
<td>17.3</td>
</tr>
<tr>
<td>C. Seamless service</td>
<td>Good</td>
<td>3</td>
<td>5.0</td>
<td>7</td>
<td>14.0</td>
<td>10</td>
<td>9.1</td>
</tr>
<tr>
<td>D. Timeliness</td>
<td>Good</td>
<td>6</td>
<td>10.0</td>
<td>7</td>
<td>14.0</td>
<td>13</td>
<td>11.8</td>
</tr>
<tr>
<td>E. Claim or problem solving</td>
<td>Good</td>
<td>5</td>
<td>8.3</td>
<td>5</td>
<td>10.0</td>
<td>10</td>
<td>9.1</td>
</tr>
<tr>
<td>F. Bending or not bending rules</td>
<td>Good</td>
<td>7</td>
<td>11.7</td>
<td>6</td>
<td>12.0</td>
<td>13</td>
<td>11.8</td>
</tr>
<tr>
<td>Subtotal, Group 1</td>
<td></td>
<td>37</td>
<td>61.7</td>
<td>37</td>
<td>74.0</td>
<td>74</td>
<td>67.3</td>
</tr>
<tr>
<td>Group 2: Additional Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Extra effort</td>
<td>Good</td>
<td>20</td>
<td>33.3</td>
<td>4</td>
<td>8.0</td>
<td>24</td>
<td>21.8</td>
</tr>
<tr>
<td>B. Response to extraordinary requests</td>
<td>Good</td>
<td>3</td>
<td>5.0</td>
<td>9</td>
<td>18.0</td>
<td>12</td>
<td>10.9</td>
</tr>
<tr>
<td>Subtotal, Group 2</td>
<td></td>
<td>23</td>
<td>38.3</td>
<td>13</td>
<td>26.0</td>
<td>36</td>
<td>32.7</td>
</tr>
<tr>
<td>Column Total</td>
<td></td>
<td>60</td>
<td>100.0</td>
<td>50</td>
<td>100.0</td>
<td>110</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Group 2A: Extra effort.** Personal extra efforts to help customers is definitely appreciated by customers even if it does not always work (n=20). Working for customers during off-hours, helping customers beyond the employee's duty, and special efforts given to customers were identified in this category. When the employees do not give any help because it is not their job or they are not on duty, customers show dissatisfaction even if the employee has a reasonable reason.

**Group 2B: Response to extraordinary requests.** The employees encounter many uncomfortable situations due to customers' extraordinary, often unreasonable, requests. Even in this case, if the employees try to provide alternative suggestions for the customers, it is more likely that they are satisfied. However, when the customers' complaints are rejected for any reason, they ironically viewed the inability to help as employee or the company's fault.

**Improving Customer Service Training in Korea**

The interviews suggest several directions conducive to improving customer service training in Korea.

**Training for service recovery is needed.** The importance of service recovery was confirmed in this study. In fact, a few researchers who used the same technique and sampled different respondents or industries also emphasized the importance of service recovery (Bitner, et al, 1990: Russ-Eft, et al., 2000). An initial service failure itself does not necessarily cause customers to have unfavorable perceptions. What matters is how to recover from those failures (Bitner, et al., 1990). If it is successfully managed or compensated, they become very pleasant experiences. By contrast, if it is not dealt with appropriately, it could magnify the bad impression. The customers tend to remember employees' responses to the initial failures rather than initial failure itself. In this regard, training
for how to recover service failure seems very helpful in enhancing the level of customer satisfaction. Also, the customer service training should cover techniques of dealing with customers who are upset or angry. For instance, suggesting 'extras' to those customers could be one way of strengthening the relationship as some service employees are doing in America (Russ-Eft, et al., 2000). Or, at the organizational level, the company can set an explicit policy for service guarantees in case the service has failed, then train the employees to ensure the standards of service quality.

Additional service also gives a strong impression. Most frequently addressed good and bad service incidents fell into the additional service category: extra effort and responses to extraordinary requests. It is so easy for employees to be aware of what is important in basic, core service. Therefore, they might do their best to fulfill job requirements, which are mostly related to core service functions. However, unlike their expectations and efforts, the customers tend to be more impressed by additional help provided. Or, the customers are more bothered by the employees' responses to their unusual request. Because loyal customers are likely to be obtained by the employees' additional service, more attention should be given to any additional service functions and customers' behavioral patterns in customer service training programs. According to Russ-Eft, et al.(2000), when service employees can see the 'big picture' and how customer service fits into it, the employees are more likely to extend a hand to help customers.

Satisfaction factors and dissatisfaction factors are different. As found in the results of critical incidents, satisfaction factors and dissatisfaction factors turned out to be in different areas. As good customer service experiences, customer service employees' extra efforts were most often addressed (n=20). The next most often addressed behavior was communication behavior (n=12). However, the poor service examples were mostly related to the response to extraordinary requests (n=9). In the empirical studies of Bitner et al.(1990) and Grove and Fisk (1997), the underlying events and behaviors that lead to satisfactory and dissatisfactory service encounters, were found to be not the same. If satisfaction behaviors and dissatisfaction behaviors are different, although this issue needs deeper investigation, the training strategy should be differentiated according to the purpose of the service training. Enhancing satisfaction levels of customer service cannot necessarily guarantee lowering dissatisfaction levels. For this reason, a clear purpose and focus of training should be determined in advance of designing training programs.

Empowering customer service employees is necessary. When employees bend internal rules to help customers, customers feel grateful and have a good perception of the organization. If they insist on rules without clear explanation, customers tend to complain. During training, what actions are permissible with and without authorities needs to be clarified. Related to this issue, Bitner, et al. (1990) recommended that service employees should be prepared for "Plan B action" if needed. The effort to empower them and give them more flexibility for their decision can help employees' performance in terms of the effectiveness and productivity in their jobs (Albrecht & Zemke, 1985).

Training cannot cure all customer service problems. The interview results show that some systematic obstacles that inhibit good customer service were found. In many cases, work structure and process, service-delivery system as well as technological problems caused ineffective and inefficient customer service (Bitner, et al, 1990). Although employee training can enhance the quality of service in part, it cannot solve all of the problems in customer service. Organizational strategy, including culture change and quality initiatives, should be incorporated into training interventions. According to Harrison (1987), different types of corporate cultures dictate particular service styles. Therefore, an organization wide approach to customer service is more effective (Brewer, 1995; Haywood, 1992; Schneider & Bowen, 1993; Tracey & Tews, 1995). In particular, Tracey and Tews (1995) advocated placing value on people (employees). The organizational strategy needs to be tied to the operational system, which refers to the means and methods chosen to deliver service. Through effective training for employees, the strategy or system can function well and support the organization. The effects of customer service training can be increased when the organizational efforts are extended from customer service training to various service quality initiatives at the organizational level (Cushing, Laughlin, & Dumas, 1987). Therefore, interventions for improving customer service need to include all parts of organizational efforts.

Technology is expected to play a critical role in customer service. Technology development influences timely, accurate service. Service employees and customers both take advantage of the development of technology mainly provided by computers. It becomes easier for them to access any kind of information through the internet or intranet. In an incident, a customer was able to check if his email asking some help was opened by the reader (service providers) through the internet. After he found that his email message had been deleted before it was even opened, he became upset. In this circumstance, La Londe, Cooper and Noordewier (1988) pointed out that accurate and timely information, backed by advanced technology, is one of the most critical factors for effective customer service relationships. Customer complaints can be codified and stored into the database and service employees refer
to those records to solve service problems. Moreover, there can be different types of customer contact technologies according to their job characteristics (Chase & Bowen, 1988). In this regard, IBM’s Human Resource Service Center is known for its successful use of technology and human resource processes to train customer service representatives (Gonzales, Ellis, Riffel, & Yager, 1999). The mostly required technological skills for certain customer service positions should be examined at the organizational level, and then, if the training is needed for employees, an appropriate training plan should be developed.

Implications for HRD

Good customer service does not result in only good reputation. It produces bottom-line payoffs such as sales increase, customer retention or market share (Rust & Zahorik, 1993; Zeithaml, Berry, & Parasuraman; 1996). Schneider and Bowen (1993) showed the importance of managing human resources in service organizations. What kinds of HRD interventions are needed to improve customer service is a critical business issue. Based on the findings of this study, it becomes clear that customer service needs holistic approach. Most appropriate HRD interventions, whether organizational system change, or training, or both, should be adopted depending upon the causes of poor service. Some need organization wide change while some need short-term training sessions. Also, the findings of this study imply the importance of specifying the training purpose or participants prior to program design when training interventions are recommended. According to the purpose, participants and their job characteristics, the training contents, focus, or instructional methods should be differentiated. In addition, it has some practical usefulness in that this is based on actual interactions between customer and service employees, rather than theoretical models. For example, the incidents themselves can be used to produce training materials when they are developed as a case study or simulation scenario. Service behaviors identified in this research, whether positive or negative, can be also used for the purpose of developing evaluation tools for customer service training.

Recommendations for Future Research

First, the research needs to focus on a specific industry, such as the finance or hotel industry, in order to suggest more direct implications to customer service in the specific industry. Second, it might be interesting to investigate cultural differences in customer service behaviors. Jevons and Pidgeon found there are significant differences on service quality in Vietnam and Australia (1999). Also, Winsted (1997) concluded that there are significant cross-cultural differences in service experience between in US and Japan. Especially, international companies or multinational companies can take advantage of this comparative research in that their scope of customer service activity has extended internationally (La Londe, et al., 1988) Third, what kinds of instructional methods in customer service training will be effective can be another research topic. Given the situation that there are virtually no studies available that shows what effective instructional methods are related to customer service training (Grimm, 1990), an effective way to teach the successful behaviors identified in this study should be further explored.

Limitations

This research has some limitations. First, it is based upon a small sample. It is not possible to generalize the results to all Korean organizations. Second, the Korean economic crisis that occurred shortly after data collection may influence customer service training as well. Third, unfortunately, there is no Korean research available to validate the findings of this study by comparing the results. It is now only possible to compare the results with the literature produced in another culture.

References


Organizational Culture and Training Effectiveness

Kay J. Bunch
Georgia State University

While as much as $200 billion is spent annually on training and development, many interventions fail. There is growing interest in the link between organizational context and human resource development, but organizational culture has been largely ignored. This paper examines the link between organizational culture and training effectiveness based on a review of literature related to organizational culture and subcultures, organizational context, transfer of training, and occupational professionalism.

Keywords: Training Effectiveness, Organizational Culture, HRD Theory

Organizations may spend as much as $200 billion annually on human resource development (HRD) (Carnevale, Gainer, & Villet, 1990; Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995). Yet, it is estimated that much of this investment is squandered on ill-conceived interventions (Baldwin & Ford, 1988; Georgenson, 1982; Tannenbaum & Yukl, 1992). The extent of this failure is unclear since few organizations choose to evaluate training (Saari, Johnson, McLaughlin, and Zimmerle, 1988). However, the literature is replete with reports of ineffective training, especially in trendy areas such as participation (Wagner, 1994), total quality management (Bennett, Lehman, & Forst, 1999), leadership (Conger, 1992), outdoor management development (Badger & Sadler-Smith, 1997), reengineering (Jaffe & Scott, 1998), and diversity (Hemphill, & Haines, 1998). The consequences of this includes the persistent undervaluing of HRD, costly litigation (Eyres, 1998), and growing cynicism about any organizational change (Wanous, Reichers, & Austin, 2000).

A key measure of training effectiveness is transfer of training, defined as the extent to which a trainee "applies the knowledge, skills, and attitudes gained in the training context to the job" (Baldwin & Ford, 1988, p. 63). Even with a perfect design and trainee, zero or negative transfer may occur without organizational support. Several writers have examined the impact of organizational influences on transfer of training (Baldwin & Ford, 1988; Baldwin & Majuka, 1997; Kozlowski & Salas, 1997; Tannenbaum & Yukl, 1992; Tracey, Tannenbaum, & Kavanagh, 1995; Xiao, 1996). However, there is sparse literature on the role of culture in fostering effective HRD interventions. I contend that the willingness of many practitioners to conduct training without regard for an organization's culture and subcultures is both a cause of failure and a reflection of HRD's weakness as a professional subculture. I begin with a discussion of the organizational context of transfer of training, followed by an examination of the link between cultural factors and training. Finally, I argue that as members of a relatively weak profession, many HRD practitioners do not have the knowledge, power, or status to demand the time and resources necessary to design effective training.

Organizational Context

Cascio (1987) asserted that transfer of training is "probably the single most important consideration in training and development programs" (p. 364). Most research on transfer has focused on factors such as learning theory, methods, and trainee characteristics (Baldwin & Ford, 1988; Tracey et al., 1995; Xiao, 1996). Recently, however, there has been a growing awareness of the influence of organizational factors on transfer of training (Baldwin & Ford, 1988; Facteau et al., 1995; Tannenbaum & Yukl, 1992; Tracey et al., 1995; Xiao, 1996).

In a review that spurred considerable interest, Baldwin and Ford (1988) found only seven studies examining the effects of organizational factors on transfer. Similarly, Tannenbaum and Yukl (1992) noted a dearth of research concerning the relationship between the organization and transfer. However, over the past decade, researchers have examined several aspects of the organizational influences, including training incentives (Facteau et al., 1995), training status (Baldwin & Majuka, 1991; Quinones, 1995), supervisory support (Xiao, 1996), supervisor credibility (Clark, Dobbins, & Ladd, 1993), and task constraints (Mathieu, Tannenbaum, & Salas, 1992).

There is growing recognition that climate, broadly defined as individual perceptions of organizational characteristics (Tracey et al., 1995), plays a major role in training effectiveness. Wexley and Latham (1991) posited that

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components of organizational climate such as compensation, opportunity for advancement, supervisory style, organizational goals, and concern for employees are related to transfer of training. Rouillier and Goldstein (1993) assessed the link between eight climate dimensions and posttraining behaviors. The authors tested the model in over 100 units of a fast-food chain and found that workers earned higher performance ratings in settings offering a more positive transfer climate. Using the Rouillier and Goldstein climate questionnaire, Tracey et al. (1995) showed a direct relationship between climate and transfer. Noting the high failure rate of Total Quality training, Bennett et al. (1999) found a link between various climate factors and the transfer of service quality training.

Organizational Culture

Culture has been described as "one of the most powerful and stable forces operating in organizations (Schein, 1996, p. 231). Yet there has been little scholarly analysis of the impact of an organization's culture on HRD (Baldwin & Ford, 1988), although several studies have indicated a relationship between culture and the effectiveness of human resources management (HRM) practices (Aycan, Kanungo, & Sinha, 1999; Ferris, Arthur, Berkson, Kaplan, Harrell-Cook, & Frink, 1998; Kopelman, Brief, & Guzzo, 1990; Moran & Volkwein, 1992; Sheridan, 1992). Definitions of culture vary, but typically include concepts such as shared beliefs, values, and assumptions that are reflected in attitudes and behavior (Kopelman et al., 1990).

The literature related to organizational learning or continuous-learning cultures offer some insight into the link between culture and training effectiveness, although continuous learning is an ambiguous and evolving construct (Crossan, Lane, & White, 1999; Popper & Lipshitz, 2000). In perhaps the only study of the culture-training relationship, Tracey et al. (1995) conceptualized continuous learning culture as including the following characteristics: learning is "taken-for-granted; group and supervisory support for learning is "institutionalized," and the learning culture is manifested in observable ways such as the reward system. Based on the responses of 505 supermarket managers, results showed that management training was more effective when newly learned behaviors conformed to cultural values.

Elements of Culture

In a more generalizable perspective of organizational culture, Rousseau (1990) developed a model depicting culture as the following five layers of elements: artifacts, patterns of behavior, behavioral norms, values, and fundamental assumptions. This is consistent with the view that artifacts and patterns of behavior are observable factors that reflect and perpetuate underlying norms, values and assumptions (Kopelman et al., 1990, Schein, 1990). Each layer has implications for understanding training effectiveness.

Artifacts

At the surface, artifacts are the "physical manifestations and products of cultural activity" (Rousseau, 1988, p. 157). Artifacts provide the most salient features of a culture (Schein, 1990), although their real meaning may be misconstrued. Galang and Ferris (1997) found that symbolic actions had more influence on the power of HR departments to gain organizational resources than unionization, HR performance, or the attitudes of top management. For example, artifacts suggesting strong support for HRD include impressive training facilities, certificates or other overt acknowledgments of training success, graduation ceremonies, participation of important figures such as top executives in HRD functions, and the high hierarchical position of HRD leaders. It seems likely that managing the use of artifacts is essential to training effectiveness.

Patterns of Behavior

Patterns of behavior are observable organizational processes such as decision-making, communication, and new employee socialization that reflects shared norms, beliefs, and assumptions. Individuals often conduct themselves on the basis of "environmental consequences" (Bandura, 1986). Thus, programs that are voluntary or unrewarded may signal the insignificance of training (Baldwin & Magjuka, 1997). Other examples of symbolic behavior include the exclusion of HRD leaders from strategic planning or the firing of trainers during an economic slowdown (Sleezer, 1991).

Behavioral Norms

Behavioral norms are the beliefs of organizational members hold concerning appropriate and inappropriate behavior. Individuals may develop negative beliefs about HRD during early socialization or previous experience (Rouillier & Goldstein, 1993). For example, norms may influence the level of group support for applying newly learned skills or the hostility of supervisors inconvenienced when employees attend training.
Values

Values are the importance given certain aspects of the organization such as quality versus quantity. Based on previous experience, individuals may reject the value of training because they have learned that "increased effort on their part will not result in increased performance" (Peters & O'Connor, 1980, p. 396). Thus, organizational constraints can reinforce beliefs about the value of training. There are numerous examples of HRD interventions such as diversity training (Hemphill, & Haines, 1998) or TQM (Bennett et al., 1999) that fail because training content collides with organizational values.

Fundamental Assumptions

The most elusive yet powerful layer of culture is subconscious assumptions. It is difficult to unearth assumptions because even the individuals who hold them are unaware (Rousseau, 1990). Consequently, managers may espouse great support for training yet subvert an employee's attempt to use newly acquired skills.

Subcultures

Scholars (Baldwin & Ford, 1988; Goldstein, 1991; Tannenbaum & Yukl, 1993) and practitioners have lamented the pervasive "nonprofessionalism" (Zemke, 1996) of many in the HRD field. For example, Tannenbaum and Yukl (1992) reported that only 25 percent of organizations surveyed conducted a needs assessment and only 10 percent evaluated training outcomes. Clearly, the prevalence of dubious training makes the prospects for improving the power and status of HRD "bleak" (Camp, Hoyer, Laetz, & Vielhaber, 1992). An obvious question, then, is why do practitioners offer training interventions "without regard to their actual need ... or theoretical basis" (Facteau et al.,1995, p. 2). One answer may be that, as members of a relatively weak subculture, many HRD practitioners do not have the power or status to demand the resources required to design effective training. Organizations are made up of subcultures with differential levels of power, status, and influence (Sackman 1992; Trice & Beyer, 1993) that emerge from interactions centered around various categories including profession, department, hierarchical level, and line or staff function (Cooke & Rousseau, 1988; Rentsch, 1990; Schein, 1990). The following discusses how subcultural differences reflect and perpetuate training ineffectiveness.

Professional

Trice and Beyer (1993) stated "the most highly organized, distinctive, and pervasive sources of subcultures in work organizations are people's occupations" (p. 178). Through exclusivity and extensive socialization, strong occupational cultures inculcate shared values, beliefs, and norms. Strong professions can demand a certain degree of independence and support. Organizations often defer to the will of occupational subcultures, such as accounting, where members owe their first allegiance to their professional code. Few accounts will forgo standard accounting practices just to please the current organization. Furthermore, most organizations do not expect it. Typical characteristics of a strong occupational subculture include a systematic body of knowledge, standardized training and limited membership, enforceable code of ethics, and formation of occupational associations (Trice & Beyer, 1993). Based on an analysis of these factors, it is argued that compared to professions such as medicine, law, engineering, and accounting, HRD is relatively weak. Consequently, HRD practitioners are likely to adopt the beliefs and assumptions of a more dominate culture (Enoch, 1989; Trice & Beyer, 1993).

Systematic Body of Knowledge. True professions are "organized around bodies of knowledge" (Hall, 1975). Jacobs (1993) noted that a member of a profession is seen by others to have "essentially monopolistic control over knowledge" (p. 76) beyond the reach of most laymen. Unfortunately, training practitioners frequently ignore extensive training research in favor of fads and gimmicks (Camp et al., 1991; Ostroff & Ford, 1992; Swanson, 1993). Latham (1988) noted that HRD scholars have conducted excellent research but "practitioners and practitioner journals appear to be unaffected by these advancements" (p. 65). For example, one training executive maintained that "management training is largely a matter of faith" and if employees seem interested in taking a training intervention, "it's probably good" (Hubbard, 1997). Consequently, it is not surprising that Clark et al. (1993) found that "in some organizations, training is perceived as a waste of time and as a way to avoid work" (p. 304).

Code of Ethics. A professional code of ethics is a fundamental artifact of strong professional cultures. Yet, while there have been some attempts to define unethical behavior (Clement, Pinto, Walker, 1978), it is only recently that specific codes of ethics have been proposed (Beegenhenebouwen, 1996; Hatcher & Aragon, 2000). Moreover, adherence to these standards is merely
voluntary. Although it could greatly enhance the profession, adopting the standard that conducting poorly designed training is unethical, even if a decision-maker asks for it (Holton, 1998), is unlikely for most practitioners.

**Standardized Training and Limitation of Membership.** There is yet no standardized program or basic level of knowledge for HRD practitioners (Wexley & Latham, 1991), although there are several excellent university programs. Instead, many HRD practitioners learn on the job where the values and assumptions of the dominant culture rather than the profession guide behavior. Ironically, an HRD degree may be considered an obstacle to effective training. In a debate on the value of HRD degrees, the training manager of a large corporation saw the possession of a degree a potential drawback because, “In the real world, if you need the program tomorrow, you have to skip the analysis” (Kaeter, 1995).

**Formation of Occupational Associations.** Perhaps HRD’s greatest and most promising strength is the existence of the ASTD and the Academy of Human Resource Development (AHRD). These organizations consistently call for and support greater professionalism. The development of a code of ethics is just the latest example of efforts to elevate HRD to the status of a strong profession.

**Departments**

Trice and Beyer (1993) noted that many functional departments have their own culture. Members of these subcultures tend to share values and assumptions that are manifested in behavioral norms unique to each department (Dansereau & Alutto, 1990; Trice, 1993). Conflict and power struggles result when organizational variables are interpreted differently. For example, a company motto such as “Customers come first” may have distinctive meanings for production, accounting, and marketing (Dansereau & Alutto, 1990). There is also evidence that departments may disagree on the design and content of training (Mathieu & Martineau, 1997).

**Hierarchical Levels**

Different hierarchical levels can produce distinct subcultures (Trice & Beyer, 1993). Rothwell and Kazanas (1990) noted that HRD is rarely involved in strategic planning because of “the low status trainers occupy in most organizational hierarchies” (p. 43). HRM managers (to whom HRD often report) are rarely found above the operating level (Fisher, 1989). Cooke and Rousseau (1988) concluded that subcultures at lower levels are more likely to support conflict avoidance, competition, and dependence. This may explain why some practitioners tend to submit to the will of stronger departments. According to Holt (1998), HRD practitioners tend to be preoccupied with “pleasing the customer” instead of what is “theoretically sound” which leads to interventions that are “dumb, ineffective, and sometimes unethical.”

**Line/Staff**

Much has been written about the differences between line and staff (Belasco & Alutto, 1969; Koslowsky, 1990). In many organizations, emphasis on the bottom line is a basic cultural assumption (Weick, 1979) and may explain the tendency for line managers to disregard staff functions (Trice & Beyer, 1993). Line management support is a major factor in realizing training effectiveness (Clark et al., 1993; Xiao, 1996), yet they often question the value of HRD (Camp et al., 1992; Heraty & Morley, 1995; Zenger, 1980).

**Conclusion**

There have been many advances in training research and theory over the past two decades. Yet, many HRD practitioners are either unaware of or unwilling to follow the steps necessary to achieve effective training. Consequently, interventions may be unsuccessful without “considering the deeper patterns embedded in an organization’s culture” (Moran & Volkwein, 1992, p. 43). Ironically, each training failure perpetuates the notion that HRD is marginal. Low expectations beget low expectations, so that attempts to design appropriate solution are thwarted by negative stereotypes. The task is daunting, but developing professionalism is imperative if HRD is to have the status and power required to meet the needs of organizations.

**References**


The Intersection of Training and Careers: An Examination of Trends of Vocational and Professional Certification and a Call for Future Research

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The 1990's saw increased development of skills standards and certification exams. When employers began accepting skill certification in lieu of traditional job training, workers acquired more credentials. The paper examines the increase in the number of skill certifications available, discusses legislative causes of these increases, and notes the current lack of published peer-reviewed analyses of statistical validity of certification exams. The paper presents a call for future research to determine the usefulness of certification.

Keywords: Skill Certification, Vocational Education, Technical Training

During the 1990's, industrial shifts away from manufacturing and toward service, especially the expansion of the software and hardware fields, led employers to increase demand for highly skilled workers. In response, private organizations rapidly increased the number and type of skill certifications available. Although there has been an exponential growth in the number of certifications available and in the number of people certified, there has been no systematic tracking of these trends.

The current paper first presents a review of the literature on certification exams, covering: labor supply and demand; legislation; and types of certifications available. The paper then presents findings of available data. Finally, the paper presents a call for future research on the extent of certification and the validity of these exams.

Theoretical Frame

Supply and Demand of Workers and Advanced Training

Employer Demand for Workers with Advanced Training. In the United States, employer demand for highly trained workers continues to increase. This demand for skilled workers is driven by service sector firms that have high percentages of managerial, professional, or technical workers, whose employees must be highly skilled, flexible, and adaptable if the firms are to remain globally competitive (Silvestri, 1997; Bishop, 1996; Carter, 1992). These advanced sectors of the economy continue to expand faster than those sectors that historically have not required employees to use judgement and critical thinking, such as traditional manufacturing firms (Katz, Hwang, & Resnick, 1997). Further, because the industrial mix and technology are changing rapidly, firms also require employees to have the ability to learn, so that employees can obtain new skills necessary to perform effectively in the changing environment (Thurow, 1997).

Supply of Skilled Workers. The increased demand for highly skilled workers has induced changes in the supply of skilled workers. For example, U.S. Governors implemented initiatives to increase the high school graduation rate, which currently stands near 90% (Kaufman, et al., 1999). Further, the percentage of 25 to 34 year olds who have a college degree increased from 24% to 29% during the 1990's (this percentage had remained at 24% throughout the 1980's). In contrast, the percentage of 25 to 34 year olds with only a high school diploma remained at about 60% for the twenty year period (U.S. Census Bureau, 2000). Nevertheless, employer demand for skilled workers continues to exceed the supply of skilled workers, leading high school graduates to seek certification. This skill gap is demonstrated by the increasing wage differentials between college graduates and high school graduates during the 1980's and 1990's (Bishop 1996; Bishop & Carter, 1991).

Methods for Workers to Obtain Advanced Skills. In order to achieve the higher skill levels required today, workers can earn college degrees or can acquire the skills through other means, such as training, independent study, job experience, or continuing education. Whichever route to skill acquisition is chosen, workers need a credential.
to indicate their skill levels to employers. Some workers use a college degree as the credential, and employers can
gauge the skill level of a college graduate based upon the graduate's GPA and the rigor of the college that granted
the degree.

Workers without a college degree can obtain training and use a skill certification as the credential. A skill
certification can be provided by a college, a vocational school, a private training organization, or a certification /
testing organization (Veum, 1993). Prior to the mid 1990's, however, skill certification was used in a limited
number of fields, was rarely discussed in federal publications, and was deemed to be outside the mainstream
educational system (Krenek, 2000).

Effect of Legislation on Supply of Technical and Professional Training

Certification-Related Legislation During the 1990's. On April 18, 1991, President George Bush presented
an education strategy, named "American 2000," to the public (U.S. Congress, 1991). This strategy was debated
and refined during the 103rd and 104th Congresses, and was presented for signature to President William Clinton
sweeping reform at all levels of the educational system in the United States. Congress described the act thus:
H.R. 1804 [is] an act to improve learning and teaching by providing a national framework for
education reform...to promote the development and adoption of a voluntary national system of
skill standards and certifications; and for other purposes. (U.S. Congress, 1994c, p. H2215).

Congress strongly believed educational reform was necessary because of advances in technology,
industrial shifts, and increased competition in the global economy. Congress believed that education should go
beyond basic skills and should prepare workers to use technology and to be competitive with workers overseas
(U.S. Congress, 1994b).

The act also was shaped by the vision of the Secretary of Education and the Secretary of Labor who each
appeared before congressional committees to discuss the need for high quality training programs for people who do
not enroll in a four-year college or university. They pledged to work together to create programs with high
occupational and academic standards (Young, 1993). Their goal was to work with the states, school districts, and
employers to create education that would be "well-grounded in academics but also in the broad occupational areas
that are relevant to real job needs" (Young, 1993, p. 7).

Creation of the National Skills Standards Board. One of the initiatives of Goals 2000 was the
establishment of a board that would focus on skills certification standards. In establishing the National Skills
Standards Board (NSSB), Congress addressed three concerns: (1) workers' skills in the United States should meet
or exceed the skills of workers in other countries; (2) educational institutions in the United States are fiercely
protective of their autonomy; and (3) new standards should not conflict with or weaken existing standards.

Congress required that educational institutions be permitted to maintain their autonomy. The NSSB,
therefore, was to use voluntary partnerships between business, labor, and education to develop skill standards
systems including training and testing (U.S. Congress, 1994b).

In addition, Congress intended to use the NSSB to improve global competitiveness of American workers
while maintaining the status of pre-existing certification programs. The legislation stated that the NSSB should:
ensure that skill standards meet or exceed the highest applicable standards used in other
countries...[and] also the highest applicable standards used in the United States, including the
apprenticeship standards registered under the National Apprenticeship Act....the standards...are not
[to be] used to undercut or dilute any existing standards. (U.S. Congress, 1994a, p. S1146).

The enabling legislation, therefore, called for a system of skills certification standards that would be
voluntary, that would be the highest in the world, and that would not conflict with existing standards. Congress
hoped that workers, employers, and educators would be enthusiastic regarding development of the standards.

Development and Use of Certification Training Programs

Scope of Certification Topics. Numerous certification exams are used to measure a vast array of skills.
These include typist, auto mechanic, airline mechanic, computer programmer, compensation specialist, physician,
and many others. The training levels required by these certifications range from high school education to doctoral
education. Thus, it is currently possible for people of all ability levels to obtain advanced training and to document
some level of expertise in a given field. This wide availability of certification is especially important for workers
who do not attend college, because they can use certification as a means of entry into challenging careers, thereby
increasing their standard of living.

**Difficulties Developing Skills Standards and Certification Exams.** Although employers and workers appreciate the existence of certification standards, these standards are difficult and expensive to develop. The difficulty and expense stem from the fact that certification standards measure *skills* not *knowledge* (Gerber, 1995). That is, although it is difficult to measure a body of *knowledge* with a written test, it is far more difficult to measure a set of *skills* with a written test (Nunnally, 1978). Many skills are best measured through measuring the performance of tasks rather than through measuring the knowledge used in performing those tasks (Carter, 2000; Osburn, 1987).

In addition, it is as difficult to determine which set of skills should be grouped together as standards for a given job as it is to measure those skills in workers (Milkovich & Newman, 1999). Several organizations have experienced difficulty developing job and skill standards. For example, after receiving a grant from the NSSB, the National Retail Federation worked for nearly two years to develop standards for the position of sales associate (Gerber, 1995). Another example can be drawn from the United Kingdom, which found the development of skills standards to be prohibitively expensive (Gerber, 1995). A third example can be drawn from the American Electronics Association (AEA), which represents 3000 U.S.-based technology companies. The AEA received a $279,000 NSSB grant in 1996 to develop a set of standards to help employers and community colleges design training and curriculum. It is unclear whether AEA has made progress toward that goal, although it recently reported to Congress regarding a continued shortage of skilled electrical and computer workers (Hughlett, 1999).

**Growth of Employer and Employee Use of Certification.** Following the passage of Goals 2000, skills training began to gain wider acceptance by employers (Hight, 1998). For example, advances in computer technology have led to a skills shortage, and "employers are increasingly embracing vocational certification, which is also becoming the norm in other industries" (Bellinger, 1996, p. 76). Employers use certified workers to fill positions such as systems and software engineers, systems analysts, programmers, repair technicians, and help desk staffers. This increased use of certification in the computer field is exactly the sort of outcome Congress desired when it ratified Goals 2000. Other areas of employment growth for workers with certification include mechanics, repairers, technicians, machinists, welders, carpenters, electricians, and truck drivers (Krenek, 2000; Veum, 1993).

The growth in certification could help increase diversity in the labor force. This would occur because Whites are more likely to receive on-the-job training than are Blacks and Hispanics, but Blacks and Hispanics are more likely to receive training from business schools and vocational or technical institutes (Veum, 1993). If Blacks and Hispanics continue to receive vocational certification at the same relatively high rate, and if employer acceptance of vocational certification continues, then labor force outcomes for Blacks and Hispanics will be better than they would otherwise be if employer demand for vocational skills did not increase.

**Empirical Findings**

**Available Data on Skills Training and Certification**

**Level of Certification Reported in Federal Publications.** For the last twenty years, economists of the U.S. Department of Labor, Bureau of Labor Statistics (BLS) have published biannual projections of occupational employment in Monthly Labor Review. These projections estimate employment growth in detailed occupations for the following ten years. The projections are based upon assumptions regarding population growth, consumer demand, economic growth, international trade, technology, employer demand for skills, and educational achievement of workers.

Although the projections are based partially upon educational achievement, prior to the projections published in 1997, the BLS did not report data on technical training or vocational education except for that which led to a high school diploma or college degree. The BLS wrote that, "schooling in other than regular schools is counted only if the credits obtained are regarded as transferable to a school in the regular school system," (USDOL-BLS & USDOC-BOC, 1996).

Therefore, prior to the mid 1990's, the extent of technical training and vocational education in the United States was relatively hidden from educators, researchers, and job seekers. For example, the BLS employment projections published during and before November 1993 reported educational attainment as: (1) less than 12 years; (2) high school graduate; (3) some college; and (4) college graduate (Fellerton, 1989; Silvestri & Lukasiewicz, 1991; Silvestri, 1993). Employment projections published in November 1995 contained no data regarding educational attainment (Silvestri, 1995).
From 1997 forward, the BLS increased the number of educational categories and linked each occupation with 1 of 11 different categories of education, training, or work experience required (Herman, 1999, p. 49; Wash, 1996-97). The 11 categories of educational attainment include: (1) first professional degree; (2) doctoral degree; (3) master's degree; (4) work experience, plus a bachelor's or higher degree; (5) bachelor's degree; (6) associate's degree; (7) post-secondary vocational training; (8) work experience in a related occupation; (9) long-term on-the-job training; (10) moderate-term on-the-job training; and (11) short-term on-the-job training (Silvestri, 1997; Braddock, 1999). This recent emphasis by the BLS on increased differentiation between levels of educational achievement may have been due to the passage of the Goals 2000 Act. With the increased demand for skilled workers during the 1990's, came the realization that accurate employment projections could only be made if these workers were identified as a distinct group.

Recent federal data published regarding the number of people with vocational education indicates that the rate of growth is increasing. For example, the BLS estimated that the size of these occupations would grow by 5 percent between 1986-1996, and by the much faster rate of 14 percent between 1998-2008 (Table 1). In addition to the fast growth rate of technical occupations, the absolute number of job openings that require technical training is significant. The BLS estimates that from 1998-2008, there will be 643,000 new jobs for workers with vocational training and 1,168,000 new jobs for workers with long-term on the job training (Table 1).

### Table 1. Projected Employment Changes for Education and Training Categories

<table>
<thead>
<tr>
<th>Education and training category</th>
<th>Total (000's)</th>
<th>Total growth (percent)</th>
<th>Total growth (000's)</th>
<th>Percent of overall job growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, all occupations</td>
<td>140,514</td>
<td>19 14</td>
<td>21,069 20,281</td>
<td>100.0 100.0</td>
</tr>
<tr>
<td>First professional degree</td>
<td>1,908</td>
<td>16 16</td>
<td>201 308</td>
<td>1.0 1.5</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>996</td>
<td>-2 23</td>
<td>-4 232</td>
<td>1.1</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>940</td>
<td>44 19</td>
<td>519 174</td>
<td>2.5 0.9</td>
</tr>
<tr>
<td>Work experience &amp; Bachelor's</td>
<td>9,595</td>
<td>32 18</td>
<td>2,314 1,680</td>
<td>11.0 8.3</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>17,379</td>
<td>29 24</td>
<td>3,624 4,217</td>
<td>17.2 20.8</td>
</tr>
<tr>
<td>Associate degree</td>
<td>4,930</td>
<td>37 31</td>
<td>1,130 1,537</td>
<td>5.4 7.6</td>
</tr>
<tr>
<td>Postsecondary vocational training</td>
<td>4,508</td>
<td>5 14</td>
<td>413 643</td>
<td>2.0 3.2</td>
</tr>
<tr>
<td>Work experience in related job</td>
<td>11,174</td>
<td>19 12</td>
<td>1,203 1,316</td>
<td>5.7 6.5</td>
</tr>
<tr>
<td>Long-term OJT*</td>
<td>13,436</td>
<td>11 9</td>
<td>1,199 1,168</td>
<td>5.7 5.8</td>
</tr>
<tr>
<td>Moderate-term OJT</td>
<td>20,521</td>
<td>11 7</td>
<td>1,889 1,430</td>
<td>9.0 7.1</td>
</tr>
<tr>
<td>Short-term OJT</td>
<td>55,125</td>
<td>20 14</td>
<td>8,581 7,576</td>
<td>40.7 37.4</td>
</tr>
</tbody>
</table>


**Level of Certification Reported by Private Agencies.** A search yielded information regarding the number and types of certifications currently available. During the 1990's, many industry-standard certifications were developed for computer skills, (Beilinger, 1996), and there are currently 64 types of computer related certifications available (Table 2). Other fields for which certification has become important include: mechanics, repairers, technicians, machinists, welders, carpenters, electricians, and truck drivers (58 certifications); human resources (50 certifications); health-related (28 certifications); and miscellaneous (51 certifications; Table 2). The field of certification has grown so large that publishers such as Learning Express have begun to offer test preparation for the exams similar to the test preparation that is offered for the SAT and the GMAT (Charters, 1999).

### Table 2. Number of Certifications Available in Selected Fields of Study

<table>
<thead>
<tr>
<th>Field of Study</th>
<th>Number of Certifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Hardware &amp; Software</td>
<td>64</td>
</tr>
<tr>
<td>Health, Nutrition, &amp; Fitness</td>
<td>28</td>
</tr>
<tr>
<td>Human Resources &amp; Management</td>
<td>50</td>
</tr>
<tr>
<td>Mechanic &amp; Laborer</td>
<td>58</td>
</tr>
<tr>
<td>Misc. Requiring High School Diploma</td>
<td>14</td>
</tr>
<tr>
<td>Misc. Requiring Bachelor's Degree</td>
<td>37</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>251</strong></td>
</tr>
</tbody>
</table>
Table 3 lists the major subject areas of certification and internet addresses of organizations that offer the certification. Many certifying organizations publish information regarding the dates they began offering the exams, but most do not. Nevertheless, through an examination of organizations' web sites, we found that although some certifications were offered as early as 1930 (welding) and 1950 (finance), most were developed during the 1990's. The organizations indicated that they had experienced a rapid increase in the number of people certified per year during the 1990's.

Table 3. General Subject Areas of Available Certifications*

<table>
<thead>
<tr>
<th>Subject of Certification</th>
<th># tests</th>
<th>internet address</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Professional Certification Program</td>
<td>19</td>
<td><a href="http://www.ibm.com">www.ibm.com</a></td>
</tr>
<tr>
<td>Oracle</td>
<td>9</td>
<td><a href="http://www.education.oracle.com">www.education.oracle.com</a></td>
</tr>
<tr>
<td>Microsoft</td>
<td>6</td>
<td><a href="http://www.microsoft.com">www.microsoft.com</a> &amp; <a href="http://www.avaonline.org">www.avaonline.org</a></td>
</tr>
<tr>
<td>Telecommunication, Computer, Art, Entertainment</td>
<td>4</td>
<td><a href="http://www.scte.org">www.scte.org</a></td>
</tr>
<tr>
<td>Other Software and Hardware</td>
<td>16</td>
<td><a href="http://www.trainingplanet.com">www.trainingplanet.com</a> &amp; <a href="http://www.learningtree.com">www.learningtree.com</a></td>
</tr>
<tr>
<td>Aircraft Mechanic</td>
<td>2</td>
<td><a href="http://www.nemac.com">www.nemac.com</a></td>
</tr>
<tr>
<td>Automobile and Light Truck Repair</td>
<td>6</td>
<td><a href="http://www.uticorp.com">www.uticorp.com</a></td>
</tr>
<tr>
<td>Automotive Service Excellence (ASE)</td>
<td>11</td>
<td><a href="http://www.asecert.org">www.asecert.org</a></td>
</tr>
<tr>
<td>Auto Glass Technician</td>
<td>1</td>
<td><a href="http://www.glass.org">www.glass.org</a></td>
</tr>
<tr>
<td>Crane Operators</td>
<td>4</td>
<td><a href="http://www.ncco.org">www.ncco.org</a></td>
</tr>
<tr>
<td>Heat, Ventilation, Air Cond., and Refrigeration</td>
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*Excluding those sponsored by the NSSB and the Department of Labor.
Summary of Findings

Increased globalization, continued expansion of the service sector, and continued decline of the manufacturing sector during the 1990's led employers to demand a greater number of highly skilled workers. Employers became willing to accept new types of credentials (i.e., skill certification) in addition to their continued acceptance of college degrees. This increased demand induced several changes affecting the supply of skilled labor. (1) There have been new government initiatives to increase the skill level of the U.S. labor force. (2) There has been increased college attendance of young adults. (3) There has been expanded development of skill certification exams by private organizations. (4) There has been an increased number of workers obtaining skill certification.

There are currently more than 250 skill certifications available. These certifications are voluntary, that is, they are not legally required for entry into an occupation. The vast majority of these certifications were developed during the 1990's.

Despite this exponential growth in certifications, there has been no systematic tracking of the trend. We do not know exactly how many certifications are available or how many people have been certified. Further, we do not know the accuracy of the certification exams for measuring skill sets. In short, although workers eagerly obtain certifications and employers willingly accept certifications as indicators of skill levels, we are left with the question: Is this an acceptable practice?

The following call for future research presents guidelines that can be used to answer this question.

A Call for Future Research

Despite the exponential growth of the availability of certification during the 1990's, several key types of information are unknown. (1) The exact extent to which workers are obtaining certification is unknown. (2) Although there has been an increase in demand for workers with high skills, it is unknown whether workers with certification receive more job offers or higher wages than those received by workers without certification (Herman, 1999; Silvestri, 1997; Braddock, 1999). (3) Whether workers with certification are indeed more highly skilled than are workers without certification is unknown. The following call for future research focuses on the latter two areas.

Validity of Prediction of Labor Market Outcomes

If a particular certification is not legally required for entry into a field, and if the certification nevertheless improves labor market outcomes, then these improved labor market outcomes could be due to: the knowledge, skills, and abilities attained while becoming certified; or the prestige of being certified.

In order to determine whether certification improves labor market outcomes, and whether the improvement is due to increased skills or due to increased prestige, researchers should compare educational and labor market characteristics of workers who have been certified with those of workers who have not been certified. Such a study should survey workers regarding the extent of their education, training, and certification, and regarding their employment and wages over time.

The survey should measure employment variables including: industry; occupation; wages; number of job offers; salaries offered; and job tenure for 1990-1999. The survey also should measure educational outcomes including: degrees earned and school name; certification earned and provider name; continuing education courses attended; on the job training; and self-study type and quantity. Demographic control variables should include: gender; age; ethnicity; geographic region; and national origin. The results of this study will indicate whether workers with certification are indeed more highly skilled than non-certified workers, and the effects of certification on labor market outcomes.

Validity of Measurement of Skills

The wide variety of sources of certifications makes it difficult for employers to gauge the merits of specific certifications, and some employers are wary of accepting certifications as meaningful credentials, while other employers accept all certifications at face value. In order for an organization to determine whether to use a certification test score as a selection device, it must know whether the knowledge, skills, and abilities purportedly measured through the certification are measured accurately (Pearlman, 1997; Schmitt, 1997; U.S. Department of Labor, 1978). Validity information would allow employers to choose between workers more accurately, and would give workers clear explanations of what is required for success in the workplace, and the means to achieve a higher standard of living.
The mechanism to indicate the validity of certifications can be provided through an examination of existing certifications as per the Department of Labor Uniform Guidelines (USDOL, 1978). This examination should consist of an analysis of the validity and reliability of the tests and the credential-granting processes.

Reliability. Researchers should first determine whether the certification exams measure consistently. For written tests, researchers should examine the test-retest reliability to determine whether the exams produce similar results over repeated testings. If there is more than one version of a specific test (as there are for many), researchers also should conduct a parallel forms study to determine whether different versions of the same test produce similar results. For tests that require subjective grading (e.g., interviews or essays), researchers should examine the inter-rater reliability to determine whether the exams produce similar results across raters.

Validity. Following the reliability studies, researchers should determine whether the inferences drawn from the exams are accurate. For example, researchers should examine the content validity of exams to determine whether the importance of subtopics on exams accurately reflects the importance of these subtopics to job content. Researchers also should examine the construct validity of exams to determine whether the exams measure what they purport to measure. For example, does the Certified Payroll Professional exam measure only knowledge of payroll functions or does it also measure other types of human resources knowledge? Finally, researchers should examine the criterion-related validity of the instruments to determine whether test scores accurately predict job performance.

Conclusions

The United States experienced striking changes in its industrial mix, technology, and educational legislation during the 1990's. These changes combined to pressure the U.S. educational system to adopt new models of delivering skills and credentials. One major change in the U.S. educational system was the increased reliance upon, and prestige of, certification. Employers have been increasingly seeking employees with a skill level between a high school diploma and a bachelor's degree, and have been filling this need by hiring workers with certifications. The occupations for which these levels of skill are relevant are projected to continue to grow rapidly during the next decade, making it more important than ever that researchers determine the validity of certifications and the complete effects of certification on labor market outcomes.

References


Hight, J.E. (1998, June). Young worker participation in post-school education and training. Monthly...


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