THE PERCEIVED INFLUENCE OF INDUSTRY-SPONSORED CREDENTIALS ON THE RECRUITMENT PROCESS IN THE INFORMATION TECHNOLOGY INDUSTRY: EMPLOYER AND EMPLOYEE PERSPECTIVES

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ABSTRACT

The increase in the number of industry-sponsored credential programs raises many questions for career and technical education. This study investigated the perceived influence of industry-sponsored credentials on the recruitment process in the information technology (IT) field. Influence is examined from the perspective of Human Resource (HR) executives and their current IT employees to explore employer and employee differences in the role industry sponsored credentials and traditional education qualifications play in the recruiting process. Surveys were administered to HR executives and IT employees in a sample of large U.S. firms. Results indicated that there were no statistically significant differences between employers and IT employees regarding the perceived influence of industry-sponsored credentials on recruitment. However, significant differences were found in the perceived influence of such credentials on the recruitment process when comparing IT employees with credentials and those without. The results are discussed in terms of their implications for researchers, career and technology education policy makers, and educators.

INTRODUCTION

Worker credentialing and certification have become increasingly important issues in the delivery of secondary and postsecondary career and technical education (CTE). Since the early 1990s, industry credentials and certification have increased in visibility with a substantial jump in the number of credentials available and the number of people seeking certification (Carter, 2005). Industry-sponsored credentials and certification are now well established in a diverse range of fields and occupations including information technology (IT), automotive service, building trades, health care, and hospitality. The increase in the number of certifications offered and their growing attraction to both employers and

employees have created a "parallel universe of postsecondary credentials" (Adelman, 2000, p.1) operating alongside, and sometimes competing with, more traditional postsecondary education qualifications.

A clarification of the terms *credentials* and *certifications* is needed since these terms are often subject to multiple interpretations. For this study, a credential was defined as "a designation, mark, or stamp given to a person, organization, or program that has satisfied a set of standards" (Hale, 2000, p. xx). Certification is "a form of credential awarded by an employer, a vendor, or an association or independent agency" (Hale, 2000, p. xx) requiring "passage of an exam benchmarked to predetermined occupation or professional standards" (Carnevale & Desrochers, 2001, p. 19).

With increasing workplace demands for skills and knowledge validated by certifications and credentials, community and technical colleges are uniquely positioned to prepare individuals to meet the work needs of a complex, diverse, and increasingly global society (Carnevale & Desrochers, 2001). Credential and certificate programs fit with one of the existing missions of two-year postsecondary institutions, which is to provide individuals with access to job opportunities by offering a variety of qualifications recognized and valued by the job market. The movement toward skills certification presents a major opportunity for community colleges (Zeiss, 1999). However, community and technical colleges are also being challenged as rapid changes occur in employment requirements and the job market. An example of this challenge is illustrated by industry-sponsored credentials in the IT area where professional associations, IT companies, and for-profit training providers threaten to bypass traditional education and training systems in developing and administering credential and qualification programs demanded by employers (Adelman, 2000).

Industry-sponsored credentials are recognized as faster, cheaper, and more focused than traditional postsecondary qualifications, such as the associate degree, and consequently, credentials have become "the continuing education currency of choice" for many professionals (Argetsinger, 2001, p. E7). Yet, many questions arise around the issue of how occupation specific credentials compare with the more traditional educational qualifications such as the two-year and four-year degrees. According to Carnevale and Desrochers (2001), a changing economy and job market places a higher value on knowledge and applied skills. Industry-sponsored credentials are good examples of qualifications that are tailor-made for specific skills required in specific employment settings. However, it is not known how individuals who obtain certification on explicit skill sets compare with those who have qualifications that are more traditional in the same job market.

Perhaps no other industry has experienced the level of interest in industry-sponsored credentials and certification programs as the IT industry, which now has well over 200 industry-sponsored credentials and certificates (Carter, 2005). Despite the large number of trends that impact the IT industry, the increasing number of IT industry-sponsored credentials is one of the most significant (Barley, 1999). Certification is well suited to the dynamic nature of the IT industry because certification systems tend to operate outside traditional structures usually associated with education credentials, while being capable of responding quickly to new methods and technologies (Wright, 1997). IT industry-sponsored credential programs (such as CompTIA A+, Microsoft Certified Systems Engineer, Cisco Certified Internetwork Expert, and Certified Novell Engineer)

have the advantage of enabling people to quickly learn a clearly defined set of competencies.

It is important to recognize that certification extends far beyond companies and organizations that create and maintain credential programs. Tittel (2001) described the size of the multi-billion dollar per year *certification aftermarket* of testing centers, IT training companies, publishing companies, practice test vendors, certification authorities, online mentoring, and resource providers. The worldwide market for IT certification training and testing has grown from US$2.5 billion per year in 1999 to an estimated $5 billion per year in 2005 (IDC, 2005). Secondary and postsecondary career and technical education is now recognized as playing a greater role in offering and delivering occupational certification and, consequently, is increasingly influenced by industry-sponsored credential and certification providers (Carnevale & Desrochers, 2001).

Credentials and industry-sponsored certifications are contributing to the creation of alternate career paths for individuals in the IT industry. The explosion in IT job opportunities since the mid 1990s, which has slowed but not diminished in recent years, highlights how the training and career paths of IT workers today are quite different from those of the past (Hilton, 2001). The linear progression of high school diploma to college degree to IT employment is being replaced by alternative postsecondary vocational credentials including industry sponsored certification (Kerckhoff & Bell, 1998). Organizations with IT human resource needs seek pools of human capital where skill competency increasingly outweighs issues of whether employees are drawn from traditional education and training settings. In this scenario, credentials offered by industry or specific vendors are providing organizations with human resources having documented IT skill sets that are immediately applicable to the needs of businesses. Yet, the impact of IT credentials in the recruitment process is largely unknown. This study addresses this issue.

THEORETICAL FRAMEWORK

Existing theory provides a strong conceptual framework for examining the role of industry-sponsored credentials in recruitment for IT positions. Qualifications and credentials have long served as signals for organizations. Signaling theory, originally developed in economics, suggests that employers require information (observable characteristics and attributes of an individual) about potential employees to determine the job positions and salaries offered to the employee (Spence, 1972). Some observable attributes of individuals are unalterable (e.g., age, gender) while others are subject to change usually at the initiative of the individual (e.g., education). Spence (1972) referred to these alterable attributes as *signals*.

Since employers have incomplete information about the knowledge, skills, and abilities of applicants, they use qualifications and credentials as signals for making inferences about missing information in determining the likely suitability and performance of prospective employees (Barber, 1998). The value that organizations place on different qualifications can also act as a signal to applicants. For example, organizational preferences for either externally validated assessment of skills (IT industry-sponsored credentials) or more traditional two- or four-year college qualifications provide applicants with information about what it would be like to be a member of that organization and what type of skills and knowledge it values (Greening & Turban, 2000).

The signaling value and preference of employers toward formal qualifications, certification, and previous experience in the IT industry is not clear. Cegielski (2004) reported that some IT firms acknowledge that industry-sponsored certification is less important than job-related experience. However, other evidence has shown that certification is a requirement not replaced by experience for career advancement in the IT industry (Vaas, 2002). A study published by CompTIA (The Computing Technology Industry Association, 2001) found that 41% of 878 responding IT executives noted that IT certification played an increasingly important role in recruitment. Others have suggested that some employers recruiting IT employees simply look for the appearance of well-known acronyms of industry-sponsored credentials, assuming that their presence on a resume implies well-defined skill levels (Kuncicky & Wynn, 1998). As such, industry-sponsored IT credentials may serve both a functional and symbolic role in recruitment (Segalla, Sauquet, & Turati, 2001).

The focus of industry-sponsored IT credentials on tightly defined workplace standards, with less emphasis on more general education, has raised organizational concerns that employees who only hold certifications lack the broad knowledge base needed to advance new knowledge in the IT industry. Initially, IT industry credential and certification programs were aimed at providing specific skills for individuals already supporting software and hardware systems produced by major vendors in the industry (Koziniec & Dixon, 2001). However, concern has been expressed that employees with one or more credentials or certifications from a single vendor potentially lack the integration skills increasingly needed in the IT industry. In addition, industry-sponsored certification may also be seen as a potential disadvantage because it makes it difficult for employees to understand and connect new products to existing operations, resulting in workers who feel frustrated and less engaged in new innovations. Others who question the value of certification, some of which are easily obtained, argue that employers tend to overestimate the value of these certificates to subsequent job performance (Connolly & Yager, 2000).

Existing research suggests that employer preference for IT credentials appears to differ among organizations. In a study of newspaper recruitment advertisements for entry and mid-level IT positions placed between April 1998 and April 1999, Adelman (2000) found that 21% of advertisements required a college degree. By comparison, 12.5% of job advertisements specifically mentioned IT industry-sponsored credentials as the preferred educational qualification. This figure had risen to 14.3% in a follow-up conducted in March 2000 (Adelman, 2000). This growth trend supports Carter (2005) who reported a 231% increase in the number of IT hardware and software certifications available between 2000 and 2003.

The value of industry-sponsored credentials can also be examined from the perspective of employees. Bird (2001) reported that 77% of IT employees surveyed held an IT related certificate with 85% planning to receive at least one additional certification in the coming year. It is fair to suggest that these IT employees would not invest the time and money to earn credentials unless they anticipate some benefit in return. Although, as Anderson, Barrett, and Schwager (2005) noted, IT employees may also view the earning of industry-sponsored credentials and certifications from a self-improvement and assessment of existing skills perspective. Despite potential reliability concerns, various IT related firms report their own research on organizational results when comparing certified to non-certified IT employees. A study by IDC, Incorporated (1999) reported that 92% of responding managers saw their certified IT employees, when compared with non-

certified IT employees, as possessing greater knowledge, demonstrating increased productivity, improving customer support quality, and expressing higher morale and commitment while concurrently requiring less training. There is also some evidence to suggest that certified IT employees receive higher salaries than employees without certification (Gabelhouse, 2000).

The potential disadvantage for individuals earning industry-sponsored IT credentials is that some people, lured into the job market directly from high school or out of postsecondary programs in which an industry-sponsored credential is earned, may find a comparatively high wage job with a short life cycle. A 1998 article in *Forbes* magazine profiled several young adults who had dropped out of high school or college, started IT companies, and now head multi-million dollar per year IT companies. That the author (McMenamin, 1998) titled her article *"The Tyranny of the Diploma"* is reflective of the perceived glamour, freedom, and high earnings available to young people possessing desired technical skills. Yet, early entry into the IT workforce could subsequently limit continued education and training opportunities while also raising questions of workplace readiness (O'Neil, 1997). The result is that some employees who hold industry-sponsored credentials may find that continued career advancement is difficult because they lack the broad range of desired skills and abilities required for today's occupations such as those detailed in the SCANS (1991) report.

PROBLEM STATEMENT

Despite the rise in popularity and potential impact of industry-sponsored credentials on career and technical education, few studies have examined how perceptions may differ between employees and managers who oversee the recruitment function. Recent research has found conflicting support for the popular industry assumption that certified workers are better able to manage organization IT systems and therefore, employers prefer applicants with certifications. Cegielski, Rebman and Reithel (2003) found no significant difference in the capabilities of certified IT network professionals and non-certified network professionals. More recent research limited to information systems network employees found a significant difference in the perceived value of certification between IT and HR professionals with HR professionals valuing certification to a greater degree than the IT professionals in the same firm (Cegielski, 2004). Thus, given the conflicting status of existing research, this study focused on the impact of credentials and certifications on the recruitment process using a broader set of variables related to the recruitment process.

RESEARCH QUESTIONS

The overarching research question guiding this study was: "Do differences exist in employer and employee perceptions on the influence of IT industry-sponsored credentials on recruitment?" This broad question was further refined into two questions: (1) "Do differences exist between HR executives and IT employees regarding their perceptions of the benefits of industry-sponsored credentials on recruitment?", and (2) "Do differences exist in the perceptions of the role of industry-sponsored credentials on recruitment between IT employees with industry-sponsored credentials and IT employees without industry-sponsored credentials?"

METHOD

Data were collected from HR executives and incumbent IT employees to explore differences in their perceptions toward the influence of industry-sponsored credentials on employee recruitment. The study was conducted in two stages. In the first stage, HR executives provided data on organizational policies associated with recruitment at their firm as well as their individual perceptions of the influence of credentials on the recruitment process. In the second stage of the study, a sample of incumbent IT employees from the same firms provided data on their perceptions on the influence of industry-sponsored credentials on recruitment.

Population

We focused on large firms with stand-alone IT departments. Large organizations have been shown to be more concerned with using objective criteria related to qualifications, academic preparation, and previous work experience in recruiting (Barber, Wesson, Roberson, & Taylor, 1999). Management research commonly uses the number of employees to measure organizational size. For example, studies of training in small businesses commonly use the criterion of less than 500 employees (Sadler-Smith, Sargeant, & Dawson, 1998; Wong, Marshall, Alderman, & Thwaites, 1997). Therefore, we defined a large organization as a for-profit firm based in the United States with 500 or more employees. Organizational size is a major determinant of IT investment and infrastructure to support the IT function (Armstrong & Sambamurthy, 1999). Furthermore, larger rather than smaller organizations are more likely to adopt new information technologies (Pennings, 1988). At the time of data collection for this study, approximately 41.9% of private-sector workers in the US were employed in large firms (Headd, 2000).

Firms were identified from the ReferenceUSA database (2001), which contains more than 12 million listings of organizations either U.S. owned or operating in the United States. All organizations with 500 or more employees were selected resulting in a population of 3,330 firms. Since access to sampling frames of individual IT employees was unavailable, a letter of invitation to participate was sent to the Vice President (or equivalent title for the most senior manager of HR) to all 3,330 firms. A total of 161 executives responded to the invitation with 111 indicating that their firms had policies prohibiting their employees from participating in this type of research. The remaining 50 firms agreed to participate in the study.

A self-administered questionnaire was mailed to these 50 HR executives along with instructions on procedures to recruit their firm's incumbent IT workers for the employee study. The HR executives were requested to forward an e-mail with an embedded link to an independently hosted website containing the IT employee survey. Employee respondents were informed that their organization would know of neither their participation nor their individual responses. At the end of the data collection period, 33 out of 50 HR executives had returned completed questionnaires representing a 66% response rate. Despite this limitation, 245 completed surveys were received from IT employees representing 13 organizations employing 13,326 IT workers. It is impossible to calculate the response rate of IT workers, because it is unknown how many IT employees in each organization received the e-mail invitation from their HR executive who had the responsibility of contacting their IT employees.

Instrument

Two instruments were used in this study. A paper-and-pencil questionnaire was administered to HR executives to determine the existing number of IT employees, the number hired in the past year, the number of current IT vacancies, the characteristics of the firm, and items designed to measure perceptions on the perceived influence of industry-sponsored credentials on the recruitment process. IT employees who participated in the study responded to a self-administered Internet-based questionnaire designed to assess the number and type of credentials and their perceptions on the influence of these credentials on recruitment. Apart from demographic information and firm characteristics, the same questions were asked of both HR executives and IT employees.

Questions on the perceived influence of credentials on the recruitment process were generated from existing literature (Barber, 1998) and examined the potential influence in relation to: (a) the cost of recruitment, (b) the ease of recruitment, (c) the efficiency of the recruitment process, and (d) the ability to identify the level of knowledge, skills, and abilities of applicants. The responses were measured on a 5-point Likert-type scale with only end points labeled, 1 = strongly disagree, 5 = strongly agree. This measurement of the response items was based on a previous study of HR issues in the IT industry (Tu, Ragunathan, & Ragunathan, 2001). The content validity of the instrument was determined with review from an expert panel of five academics and five IT managers.

Data Analysis

Independent sample t-tests were conducted to determine differences in perceptions between HR executives and IT employees, and between IT employees with and without industry-sponsored credentials. In the few instances of missing data, analysis was conducted with the number of completed cases rather than using a case deletion approach.

RESULTS

The following section is divided into five parts: demographics and firm characteristics; importance of credentials to hiring practices; type of qualifications; perceived influence of industry-sponsored credentials on recruitment; and a comparison of IT employees with and without industry-sponsored credentials.

Demographics and Firm Characteristics

The 33 responding HR executives represented firms geographically dispersed across the United States. The average number of IT employees in these firms was 423 employees. The mean number of current IT-related vacancies was 4.8 and the mean number of IT employees hired over the past year was 50.7. According to the HR executives, it takes an average of 7.5 weeks to hire a new IT employee.

In addition to the HR executives, there were 245 IT employee respondents. Almost 90% (89.8%, n = 220) of respondents were male, reflecting but perhaps overstating, the well-documented under-representation of women in the IT industry. The mean number of years of employment in the IT industry was 7.3 years and the mean number of years employed in their current organization was 10.3 years.

Importance of Credentials to Hiring Practice

Most of the HR executive respondents (84.8%, *n* = 28) reported an increasing number of applicants with industry-sponsored credentials responding to IT job advertisements in their organizations. Employers (HR executives) also indicated that they were beginning to use IT industry-sponsored credentials as the qualification of choice for some of their IT positions. Over two thirds of the employer respondents (66.7%, *n* = 22) revealed that they specify IT certificates/credentials for certain IT positions. The majority of employers (62.5%, *n* = 20) rated IT industry-sponsored credentials as either important or very important to their non-managerial level IT employee-hiring decisions. Less than half the HR executives (42.4%, *n* = 14) either agreed or strongly agreed that their organizations require employees to maintain and update their IT related credentials. Yet, two thirds (66.7%, *n* = 22) provided funding for credentials programs facilitated by an outside vendor.

Type of Qualifications of IT Employees

Among the 245 employee respondents, a two-year associate degree was indicated as the highest level of education by 22.1% (*n* = 54), a four-year college degree by 25.4% (*n* = 62), and a master's degree by 8.6% (n = 21). A high school diploma was the highest level of education for 5.3% of the respondents (*n* = 13), while 38.4% (*n* = 94) had some college education. Almost seventy percent (69.4%, *n* = 170) of employee respondents indicated that they had earned one or more IT industry-sponsored credential. The 245 IT employee respondents in the study held a total of 406 IT industry-sponsored credentials (see Table 1).

Table 1. *Information Technology Employee Certifications by Certification Provider*

Provider of IT Certification	Frequency of Certifications
CompTIA	114
Dell	71
Hewlett Packard	66
Microsoft	50
IBM	21
Novell	20
Institute for Certification of Computing Professionals	7
Oracle	6
Sun Microsystems	3
Certified Internet Webmaster	0
Other, including Baan, Synbase, SAP, Adobe	48
Total	406

Note: These 406 industry-sponsored credentials were held by the 245 IT employee respondents. Some respondents held multiple certifications.

Perceived Influences of IT Industry-sponsored Credentials on Recruitment

To determine if certification had an impact on recruitment, both employer and employee respondents were asked to state their level of agreement with the statement that "industry-sponsored credentials determine the needed knowledge and skills for IT jobs". In addition, the potential influence of credentials on various aspects of the recruitment

process was examined by three questions regarding the cost, ease, and time efficiency of recruitment. These results are reported in Table 2.

Both employers and employees perceived one of the main benefits of industry-sponsored credentials to be the identification of an applicant's job related skills and knowledge. Employees were stronger in their belief that industry-sponsored credentials make the recruitment process easier, cheaper, and more time efficient than their HR executives. However, none of the differences between employers and employees related to recruitment were significant.

Table 2. *Comparison of Perceptions of Human Resources Executives and Information Technology Employees*

Items	Human Resources (HR) Executives	Information Technology (IT) Employees	*t*
	M	*M*	
Recruitment benefits of credentials			
Identify an applicant's skill sets and knowledge more easily	3.82	3.58	-1.28
Make the recruitment process easier	3.45	3.60	0.88
Make recruitment cheaper	3.03	3.30	1.59
Make recruitment more time efficient	3.39	3.50	0.70

Note: The means represent those respondents who either agreed or strongly agreed to the above statements on a five-point scale.

Comparison of IT Employees With and Without Industry-sponsored Credentials

A series of independent samples t-tests were conducted to explore differences between the two IT employee groups—IT employees with no IT industry-sponsored credentials and IT employees with one or more IT credentials, with respect to their perceptions on the role of industry-sponsored IT credentials in influencing recruitment (see Table 3). Following a Bonferroni correction for multiple-comparisons two of the four items examining recruitment process influences were found to be significant; that credentials make the recruitment process cheaper and credentials make the recruitment process more time efficient.

DISCUSSION AND CONCLUSIONS

Employers do note that a growing number of applicants for IT positions have industry-sponsored credentials. The majority of HR executives surveyed also stated that industry-sponsored credentials are important in hiring decisions for non-managerial IT

Table 3. *Independent Samples t-tests*

Item	*n*	*M*	*SD*	*t*	df	*p*
Identify knowledge/skills more easily						
No credentials	75	3.52	1.03	-.65	243	.52
Credentials	170	3.61	1.02			
Makes recruitment easier						
No credentials	75	3.55	1.02	-.72	243	.48
Credentials	169	3.64	.98			
Makes recruitment cheaper						
No credentials	75	3.12	.90	-2.20	243	.01*
Credentials	170	3.42	1.01			
Makes recruitment more time efficient	75	3.24	.97	-3.01	243	.002*
No credentials	170	3.64	.92			
Credentials						

Note: Bonferroni corrected significance level = $p < .0125$.

employees. The growing trend towards industry certification can also be seen in that almost 70% of the 245 employee respondents in this study have at least one IT industry-sponsored credential. The results of this research suggest that IT employees believe that industry-sponsored credentials do influence the recruitment process. More specifically, the finding that employees perceive that credentials reduce the cost of organizational recruiting while also increasing the ease and efficiency of recruitment may reflect one of the prime motivating factors for enrollment in industry-sponsored credentials programs.

In the early days of IT industry-sponsored credentials, the vast majority of people who earned certifications were professional IT employees already well established in the industry. The recent trend of an increasing number of people earning credentials with little or no prior experience in the IT industry while expecting to find immediate employment and a high salary has potentially damaged the reputation of industry-sponsored credentials. This was supported in the research of Carter (2005) who found the increase in number of certifications offered in the IT industry from 2000 to 2003 outpaced the rate of job growth. In response, organizations and professional associations with existing or developing credential programs are now urged to pay attention to establishing and maintaining reasonable and realistic expectations about the benefits and outcomes of certification (Hale, 2000).

The finding from this study that employees with industry-sponsored credentials perceive credentials as having a greater influence on recruitment as compared to employees without credentials is perhaps to be expected. Although as Cegielski (2004) found, few IT professionals believe that certification is correlated with ability and none believed that certification was a mechanism suitable for justifying recruitment. This may reflect a situation of cognitive dissonance as employees with credentials justify the effort, time, and cost required to earn and maintain their credentials. Further research in this area would be interesting because an attribution effect may be present in which employees with credentials attribute their recruitment and career success to their industry-sponsored credentials at the expense of other potential explanations. Furthermore, industry-

sponsored credentials remain largely unproven in terms of their relationship to performance measures. This study provides an initial look at how both employers and employees view credentials; however, additional research is needed to look at other outcomes of industry-sponsored credentials from the perspectives of both individual employees and their employers.

Research is also needed to examine how the influence of industry-sponsored credentials may vary by type and provider of certification. For example, is career entry and advancement influenced by the provider of credential? In other words, are students who complete a well-grounded curriculum that integrates preparation for earning an IT-industry-sponsored credential better served than students who take an intensive and focused training program that focuses solely on test preparation for credentials? The answer to such questions would benefit CTE providers, especially in light of the growing presence of industry-sponsored credentials in community and technical colleges. This study has focused on industry-sponsored credentials from one industry, yet it must be acknowledged that credentialing and certification are now major issues in education and training for many occupations and professions. Future research is needed to explore the influence of industry-sponsored credentials in other industries.

Limitations

The principal limitation of this study is the low response rate. The low response rate from the IT employee survey can perhaps be partly attributed to the web-based data collection procedure. The still evolving nature of web-based surveys highlighted many issues that are believed to have influenced the number of respondents in this study. The generalizability of the results is therefore limited. Furthermore, the lack of definition of the term IT employee may have caused confusion given the well-documented difficulties in defining the boundaries of occupations within the IT industry (Powell, 1999). The sample was also limited to the degree to which the ReferenceUSA database provided correct information and the extent to which HR executives extended the invitation to participation to their IT employees.

IMPLICATIONS FOR PRACTICE

It is in the long-term interest of the IT industry, students, and employers, as well as CTE professionals, to have a workforce of professionals well prepared to work within the IT industry and to learn new jobs within future configurations of this dynamic career cluster. Certification should play a role at the secondary, postsecondary, and continuing education levels when students are preparing to obtain or change jobs. However, caution must be exercised in the promotion and delivery of educational programs leading to IT credentials and certifications so that students have a clear understanding as to how these qualifications will be perceived by HR executives, IT managers, and future colleagues. Perhaps this knowledge would influence the decision of some to incur the often considerable expenses involved in obtaining and maintaining IT industry certification. In recent times, calls to avoid the over-glamorization of IT careers (Terranova, 2000) and the fallacies of six-figure salaries for applicants with credentials but lacking in experience (Goff, 2001) have added an important balance to the certification literature. The prevalence of industry-sponsored credentials and certification is likely to continue to grow in importance in a variety of occupations providing additional support for CTE professionals to promote the need for lifelong learning within the context of changing career patterns.

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