

## The Competitive Advantage of Online versus Traditional Education

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*This paper examined attitudes concerning the effectiveness of distance learning, and determined the impact these perceptions had on selection decisions. Results partially supported the hypotheses, demonstrating that individuals believed distance education was of lower quality than traditional classes, and this perception impacted their hiring decisions.*

Keywords: Distance Education, Employee Selection

The past decade was witness to the revitalization of distance education as the world of academia met the World Wide Web. More specifically, a recent study by the National Center for Education Statistics (NCES) showed that between the time periods of 1994 to 1998, the number of distance education programs increased by 72% (U.S. Department of Education, 1999). The study also found that an additional 20% of the institutions surveyed by the NCES planned to establish distance learning programs and on-line degrees within the next three years, and that an estimated 1.6 million students were enrolled in distance education courses in 1997-98. Furthermore, on-line universities (i.e., University of Phoenix; Western Governors University) are growing in popularity with adults looking to further their education. Despite the attrition often found in distance learning settings, enrollment in the University of Phoenix's online-MBA program grew 51% in 2001 (Mangan, 2001). The willingness of educators and students to embrace e-learning means it is easier to obtain a degree without setting foot on campus (Caudron, 2001).

Distance education, typically defined as structured learning in which the instructor and student are separated by time and space, uses the latest technology to bridge the gap between participants in education. (Ham, 1995; McIsaac & Gunawardena, 1996). Despite the rapid growth in technology-mediated learning to meet increased student demand, the quality of higher learning via distance education has been called into question. Specifically, there is a common perception among the public that distance learning is not as effective as traditional face-to-face education (Dede, 1996; Harrison, 2001). However, according to empirical evidence, there is no significant difference between traditional and technology-mediated learning (Arbaugh, 2000; Verduin & Clark, 1991). For instance, Russell (2002a) listed 365 distance education studies that found little difference in the quality of education received through distance learning versus classroom learning. That is, students taking distance learning courses performed as well as students taking courses via traditional methods (e.g., Gagne & Shepherd, 2001). Thus, Russell (2002b) argued that negative perceptions concerning distance learning are unfounded.

Nevertheless, researchers and practitioners agree that the successful implementation of any technology depends on factors related to the users' attitudes and opinions (Webster & Hackley, 1997). Accordingly, several researchers (O'Malley & McCraw, 1999; Shea, Motiwalla, & Lewis, 2001) have examined perceptions of distance learning and the various behaviors related to these perceptions such as not enrolling in distance education courses or verbally objecting to the implementation of such programs. For example, Anakwe and Kessler (2001) found that students who held favorable perceptions of Internet-based courses were more likely to enroll in distance education programs than students who held unfavorable perceptions. Dooley and Murphrey (2000) also showed that the rate of adoption of distance education technologies was influenced by administrators' beliefs about the advantages of distance education, the degree to which the programs were perceived as compatible with the students' needs, and perceptions about the difficulty of the technology.

While several studies have examined college students' perceptions (e.g., O'Malley & McCraw, 1999), few have assessed employers' perceptions regarding distance learning. Gray (2001) surveyed 247 employers from different companies about their hiring practices and all but a handful said they had not considered hiring an MBA with an on-line degree. However, Gray (2001) argued that there is a major difference between "had not considered" and "would not consider." Furthermore, of the handful of employers that considered hiring MBA's with on-line degrees, several stated that they preferred students with degrees earned by distance learning because it shows that these students are self-starters. Because this study only assessed whether employers considered hiring students with on-line degrees, the relationship between perceptions of on-line degrees and actual selection decisions was

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unknown. This examination is also important in that, to the researchers' knowledge, no previous research attempt has been made to examine both employers' and students' perceptions of on-line learning and to assess whether these perceptions bear any weight when evaluating candidates and making selection decisions for a specific job.

Therefore, the main purpose of this study is to add to the current stream of distance learning literature by examining perceptions of distance learning and to assess whether these perceptions bear any weight when making selection decisions. Without the support of employers, the value of degrees earned online (i.e., obtaining a job or promotion) is limited. We believe that employers' perceptions impact the practical utility of the degree. In particular, despite some evidence that distance education may be equivalent to or more effective than classroom instruction, leading to improved satisfaction with courses, greater learning, and increased transfer of materials learned (Russell, 2002b), these factors will not adequately impact hiring decisions if individuals in the workplace have not adopted this as "reality". Thus, it is essential to assess perceptions of distance learning and willingness to hire individuals with online degrees.

#### *Perceptions of Distance Education*

Since the beginning of distance education, every form of mass communication technology (e.g., film, radio, television, and the Internet) has been used to transmit instruction and education from afar (Clark, 1994). Clark (2001) maintained that "each of these 'new' media have experienced similar problems providing credible evidence of solid educational success" (p.1). Furthermore, as technology changes, advocates of the latest and greatest teaching medium have a tendency to assume that their "new" technology is unique (Clark, 1995). Regrettably, advocates of on-line learning have failed to learn from past mistakes and have fallen into the same trap as earlier advocates of "new" technology. Like their predecessors, supporters of Internet-based learning are having difficulties in persuading the public that distance learning via the Internet is equivalent to face-to-face learning. As previously noted, Dede (1996) and Harrison (2001) found evidence that the public's general perceptions of distance education are unfavorable and related to negative perceptions about technology.

Recent studies have shown that interest in technology (Massoud, 1991), computer-related confidence (Rosin & Weil, 1995), and computer-related self-efficacy (Zhang, 1998) influence an individual's attitudes, perceptions, and beliefs about technology. For instance, Zhang (1998) demonstrated that computer self-efficacy (i.e., students' perceptions of their computer skills) was related to attitudes toward computer usefulness. Also, Davis (1989) found that perceived technology usefulness was positively associated with use and intention to use technology. Similarly, Anakwe and Kessler (2001) found that the perception of technology usefulness was related to intention to enroll in on-line courses. Consequently, they argued that, "the distance learner must believe that distance technologies are useful if they are to positively evaluate the potential of distance learning to them" (p.4). Thus, it is hypothesized (H1) that perceived technology usefulness will be related to perceptions of distance learning and on-line degrees.

Anakwe and Kessler (2001) also found a student's intention to enroll in distance learning courses to be related to technology familiarity. The authors assessed familiarity by asking participants to report the average number of hours they spend on various media during a typical workday (e.g., World Wide Web, e-mail, and chat rooms). Additionally, Jackson, Chow, and Leitch (1997) found that prior use of technology was an important determinant of intentions to use technology. Therefore, it is hypothesized (H2) that the number of hours spent using technology in a week will be related to perceptions of distance learning and on-line degrees.

#### *Perceptions of Academic Qualifications and Selection Decisions*

Cognitive researchers are quick to point out that individuals perceptions are reality. Thus, if an individual perceives that an on-line degree is not comparable to traditional face-to-face learning, then for that individual his or her perception is "truth". According to Fishbein and Ajzen (1975, p.5), "human beings are usually quite rational and make systematic use of the information available to them". As noted by Ashford and Cummings (1993), individuals selectively attend to information that supports their hypotheses. In addition, the most immediate cause of behavior is an individual's intention to engage in or refrain from the behavior (Ajzen & Fishbein, 1980), and intentions are partially determined by an individual's attitude toward the behavior. Therefore, individuals who perceive distance learning as ineffective may attend only to information that supports their beliefs, and a negative perception toward a phenomenon such as distance education may predispose a person to act negatively toward that phenomenon (Pinder, 1998).

According to a meta-analysis conducted by Olian, Schwab, and Haberfeld (1988), academic qualifications account for 35% of the variance in selection decisions. Furthermore, Singer and Bruhns (1991) found that both work experience and academic qualifications impacted hiring decisions. Although their results indicated that the effect of academic qualifications was relatively larger than that of work experiences for students, the manager sample showed work experience had a greater effect than academic qualifications.

For decision makers, biographical data (e.g., academic qualifications, work experience) in the form of resumes and application blanks are the most commonly used information in personnel selection (Ash, Johnson, Levine, &

McDaniel, 1989). Research has shown that recruiters make distinctions regarding the importance of items among biographical data, and differences in the data can influence judgments of employment suitability (Brown & Campion, 1994). For an employer who has unfavorable perceptions of online degrees, academic qualifications should be a salient factor influencing hiring decisions. Therefore, it is hypothesized (H3) that individuals who hold negative perceptions regarding on-line degrees will be more likely to reject a candidate who earned his or her degree from an on-line university.

## Method

### *Participants and Procedure*

Two hundred one students (56 % males and 44% females) attending a large southeastern university and 26 recruiters (60% males and 40% females) attending a university career fair participated in this study. The average student age was 21 years ranging from 18 to 25 years of age. The average employer age was 32 years ranging from 20 to 59 years of age. The student sample consisted of individuals currently pursuing a major in Business with many concentrating in human resources or general business (24%) and currently working in various entry-level managerial positions. Some HRD literature suggests that managers make more accurate selection decisions than other individuals lacking experience in hiring individuals (Gaugler, Rosenthal, Thornton, and Bentson, 1987). However, Weiner and Schneiderman (1974) and Mullins (1982) found that few differences exist between experienced samples and inexperienced samples with respect to interview ratings and hiring decisions. Consequently, both samples were examined.

Participants reviewed two job descriptions, two resumes, and two cover letters that were created by the authors. The job descriptions described an entry-level financial analyst opening for an undergraduate applicant and an upper-level Director of Talent Development opening for an MBA candidate. Participants were asked to review both the qualifications of an undergraduate and MBA candidate for two reasons: 1) participants were traditional undergraduates, thus they may hold more negative perceptions about students who pursue their bachelor's degree in a manner that differs from their own experience and 2) the majority of students who enroll in distance education programs pursue advanced degrees rather than a bachelor's degree (Daniel, 1995; Shea, Motowill, & Lewis, 1998). All participants received both job descriptions that included a job announcement, candidate requirements, and job responsibilities. Two resumes and cover letters were also constructed for each job including reference to either a traditional or distance institution; however, each individual reviewed only one resume and cover letter per job description. The sole difference between the two resumes and cover letters was the current educational institution (i.e., Bridgewater State College or Bridgewater College of Distance Education; Campbell University or Campbell School of Distance Education). Schools were chosen that would likely be unfamiliar to the participants, so that biases about actual schools would not affect the results, and gender-neutral names (i.e., Chris; Pat) were chosen for the applicants to avoid gender-related effects.

For the student sample, all relevant survey variables were collected in an introductory management class. Each student read both job descriptions (Financial Analyst and director of Talent Development) and was randomly assigned two resumes and cover letters (one for each job description). For the employer sample, all relevant survey variables were collected at the beginning of a job fair. Like the student sample, employers were also given both job descriptions and randomly assigned two resumes and cover letters. A manipulation check ensured that participants recognized the type of institution attended. After reading both sets of job descriptions, respondents completed all measures.

### *Measures*

*Demographic measures.* Students and employers completed demographic items concerning gender, student status, education level, age, job title, major, etc.).

*Hiring decisions.* Respondents' intent to hire the applicant was assessed by a single question (e.g., "Would you hire Chris Michaels for the financial Assistant Job?"). The instructions requested that they circle either "yes" or "no" and then provide rationale for their decision. Participants also specified their perceptions of the quality of education and work experience for each candidate on a Likert scale ranging from 1 (poor) to 5 (excellent).

*Perceived technology usefulness.* Respondents completed the perceived technology usefulness measure developed by Davis (1989). Each participant was asked to rate the usefulness of 10 technologies in everyday life (e.g., Internet, World Wide Web, e-mail, videoconferencing, chat rooms, etc.) from 1 (not at all useful) to 5 (very useful). The items were factor analyzed with a DIRECT OBLIMIN rotation that revealed one underlying factor with a reliability of .74.

*Technological familiarity.* Respondents were asked to indicate the number of hours spent during an average work week engaging in four online activities (e.g., e-mailing, conversing in chat rooms, surfing the Internet,

researching information on the Internet) using responses of “0-5 hours”, “6-10 hours”, “11-15 hours”, “16-20 hours”, or “21+ hours”. The reliability measure for this scale was .73.

*Perceptions of distance learning.* Perceptions of distance learning were measured by asking each participant to rate the effectiveness in education of 10 technologies (e.g., Internet, World Wide Web, e-mail, videoconferencing, chat rooms, etc.) from 1 (not at all effective) to 5 (very effective). The items were subject to a factor analysis using a VARIMAX rotation that revealed three factors (Table 1). The first factor (Fundamental Technology Effectiveness;  $\alpha=.57$ ) measured the effectiveness of technologies commonly used in the classroom that have been available for many years (i.e., telephone). The second factor (Basic Computer Technology Effectiveness;  $\alpha=.71$ ) measured computer technologies frequently used in everyday life (i.e., e-mail). Finally, the third factor (Advanced Computer Technology Effectiveness;  $\alpha=.71$ ) measured less popular computer technologies (i.e., videoconferencing).

Table 1. *Factor Analysis for Perceptions of Distance Learning*

Items	Factor Loadings		
	F1	F2	F3
Fundamental Technology Effectiveness			
1. Telephone	.748		
2. Mail Delivery	.772		
3. Videotape	.536		
4. Audiotape	.411		
Basic Computer Technology Effectiveness			
1. E-mail		.737	
2. Internet		.725	
Advanced Computer Technology Effectiveness			
1. Internet Conferencing			.811
2. Videoconferencing			.773
3. News/Discussion Groups			.593
4. Chat rooms			.570

Additionally, a one-item scale measured perceptions of degrees by asking participants to indicate if a degree earned from an on-line university is equivalent to a degree from a traditional university by selecting: 1 (no, on-line is better), 2 (yes), or 3 (no, traditional is better).

## Results

In partial support of the first hypothesis, perceived technology usefulness was associated with students' perceptions of distance learning. Specifically, perceived technology usefulness was positively correlated with a student's perception of Fundamental Technology Effectiveness ( $r = .41, p < .01$ ), Basic Computer Technology Effectiveness ( $r = .30, p < .01$ ), and Advanced Computer Technology Effectiveness ( $r = .41, p < .01$ ; See Table 2). Furthermore, perceived technology usefulness was positively correlated with an employer's perception of Advanced Computer Technology Effectiveness ( $r = .53, p < .01$ ; See Table 3). However, perceived technology effectiveness was not significantly associated with a student's perception of on-line degrees and an employer's perceptions of Fundamental Technology Effectiveness, Basic Computer Technology Effectiveness, and on-line degrees (See Table 2 and Table 3). Thus, the first hypothesis was partially supported.

Results also partially supported the second hypothesis that time spent on-line would be related to perceptions of distance learning. For the student sample, the total amount of time spent on-line during a typical week was positively correlated with the Basic Computer Technology Effectiveness subscale ( $r = .16, p < .05$ ; See Table 2) and negatively correlated with perceptions of on-line degrees ( $r = -.18, p < .05$ ). That is, students who spend more time e-mailing, conducting research on the Internet, talking in chat rooms, and surfing the web are also likely to hold positive views of on-line degrees. Time spent on-line was not significantly related to student's perceptions of basic technology and basic computer technology effectiveness, nor was it significantly related to employers' perceptions of Fundamental Technology Effectiveness, Basic Computer Technology Effectiveness, Advanced Computer Technology Effectiveness and on-line degrees (See Table 2 and Table 3).

Table 2. *Correlations, Means, and Standard Deviations Among Study Variables for Student Sample*

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Perceived Technological Usefulness	22.68	4.31	----							
2. Time Spent on Computer	5.69	1.92	.29**	----						
3. Perceptions of On-line Degree	2.89	.35	-.02	-.14*	----					
4. Fundamental Technology Effectiveness	14.94	3.21	.41**	.03	.07	----				
5. Basic Computer Technology Effectiveness	9.03	1.36	.30**	.15*	-.13*	.28**	----			
6. Advanced Computer Technology Effectiveness	10.69	3.50	.40**	.31*	-.05	.22**	.11	----		
7. Hire Undergraduate Student	1.25	.43	-.06	-.13*	-.08	-.14*	.03	-.22**	----	
8. Hire Graduate Student	1.13	.34	-.00	-.10	.04	-.05	.00	-.05	.02	----

Note: \*  $p < .05$ . \*\*  $p < .01$ .  $N = 201$ .

Table 3. *Correlations, Means, and Standard Deviations Among Study Variables for Employer Sample*

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Perceived Technological Usefulness	33.76	6.31	----							
2. Time Spent on Computer	7.91	2.97	.32	----						
3. Perceptions of On-line Degree	2.54	.86	.16	.37	----					
4. Fundamental Technology Effectiveness	15.75	2.63	.21	.11	.11	----				
5. Basic Computer Technology Effectiveness	6.54	2.02	.37	.17	-.17	.26	----			
6. Advanced Computer Technology Effectiveness	13.76	4.29	.53**	-.28	-.27	.49*	.11	----		
7. Hire Undergraduate Student	1.54	.51	.18	.03	.04	.10	.25	.31	----	
8. Hire Graduate Student	1.54	.51	.33	.09	.23	-.03	.06	.27	.38	----

Note: \*  $p < .05$ . \*\*  $p < .01$ .  $N = 26$ .

Finally, the third hypothesis was partially supported by the results. Specifically, employers who reported that on-line degrees were equivalent to degrees earned from a traditional university were more likely to hire a candidate who earned a bachelor degree on-line (hire on-line degree candidate;  $M = 1.80$ ; do not hire on-line candidate;  $M = 3.00$ ;  $t = -3.19$ ;  $p < .01$ ). However, there were no significant differences between employers' who reported that on-line degrees were equivalent to degrees earned from a traditional university and employers' who reported traditional

degrees were better than on-line degrees and the likelihood of hiring a candidate who earned a M.B.A on-line (hire on-line degree candidate;  $M = 2.25$ ; do not hire on-line candidate;  $M = 3.00$ ;  $t = -1.59$ ;  $p = .14$ ). Furthermore, there were no significant differences between employers' perceptions of technology effectiveness and their decisions to hire both the candidate who earned a bachelor degree on-line and the candidate who earned a M.B.A on-line. There were no significant findings for the student sample.

Qualitative analyses of the question asking respondents to indicate reasons for their hiring decisions were conducted to gather additional information about participants' hiring decisions. They showed that 37% of respondents indicated work experience as the primary reason for their decision, whereas only 5% indicated their decision was based on education. The remaining 58% based their decisions on either a combination of education and work experience, resume presentation, or person-job fit. Furthermore, post hoc linear regression analyses using a STEPWISE selection procedure showed that the best predictor of selection decisions was the participants' perception of the candidate's quality of work experience. Specifically, quality of work experience accounted for 35% of the variance ( $p < .01$ ) in a student's decision to hire a candidate with an on-line bachelor degree and 31% of the variance ( $p < .01$ ) in a student's decision to hire a candidate with an on-line M.B.A.

Additional exploratory analyses demonstrated that students were equally as willing to hire a student with an online MBA as a student with a traditional degree,  $F(1,191) = 1.82$ ,  $p = .18$ . However, they were less likely to hire a person with an online undergraduate degree than the same student with a traditional degree,  $F(1,198) = 10.29$ ,  $p < .002$ . There were no significant results for the recruiter sample.

## Discussion

The main focus of this study was to add to the current stream of distance learning literature by examining recruiters' and students' perceptions of distance learning and to assess whether these perceptions affect selection decisions for a specific job. The results of the correlation analyses showed at least partial support for all hypotheses. Specifically, the more useful a student views technology in everyday life the more favorable he or she will perceive the effectiveness of basic technology (e.g., telephones, videotapes, and audiotapes), basic computer technology (e.g., Internet and e-mail) and advanced computer technology (e.g., videoconferencing and Internet conferencing) for educational purposes. Furthermore, the more familiar individuals are with everyday technology the more favorable he or she will perceive the effectiveness of technology in education. Finally, participants with higher perception of an on-line degree are more likely to hire individuals with a distance degree.

Based on the results of this study, Fishbein and Azjen's (1975) model was partially supported. That is, attitudes about distance learning generally impacted individuals' intentions to hire an applicant. Specifically, those with higher perceptions of on-line degrees were more likely to hire both graduate and undergraduate students with a distance learning degree. However, perceptions of an on-line undergraduate degree were more negative than perceptions of an on-line graduate degree. One possible explanation for this finding is that more individuals are pursuing advanced degrees from programs that include on-line learning methods, but there are still a few who pursue their bachelor degrees from an entirely on-line university.

The results of this study, replicated Singer and Bruhns (1991) findings that individuals consider more than a candidate's educational background when making hiring decisions. Post hoc analyses indicated that hiring decisions might be based on the evaluation of both work experience and quality of education. As such, academic qualifications represent only a portion of the variance in selection. Students may have relied on work experience for making hiring decisions since on-line programs are a relatively unknown commodity. That is, the effectiveness of on-line programs, although empirically demonstrated, has not been accepted in the Human Resources community. Thus, students likely consider work experience and education when making hiring decisions. Also, lack of familiarity with the institutions in this study may have led the participants to rely more on work experience and other information beyond education.

Limitations to this study include the reliability of the perceived technology effectiveness subscales and the time spent on-line scale. Additional research should be conducted on these measures. Future research should also include conducting studies using samples of recruiters from a variety of occupations and positions. Researchers should also vary the job types and work experience of the constructed candidates. More specifically, these participants read job descriptions for a Director of Talent Management and a Financial Assistant position. Different results may be found for jobs of varying technical involvement and for individuals with a diversity of work experiences and educational backgrounds. Since participants seemed less likely to discount the on-line graduate degree than the on-line undergraduate degree, additional research should investigate differing perceptions between distance degrees.

Although it has been established that "perception is reality", the impact on hiring decisions has never before been examined. In this study, the type of education obtained, on-line versus traditional, seems to have some impact

on hiring decisions. Partial support was found for the three hypotheses, demonstrating that perceptions of distance education may influence decisions to hire or reject candidates. Consequently, this study has contributed to the human resource development literature, because it is the first study to examine the relationship between perceptions of distance learning and selection decisions. The usefulness of this research will ultimately be based on the extent to which the phenomena are researched further, thereby developing more parsimonious explanations of the relationship between on-line learning and selection decisions. In summary, this study provides some useful findings to add to the small body of distance education research. The results showed that students who graduate from on-line universities might be perceived differently in terms of their quality of education. Consequently, they may face more job market obstacles than the traditional student.

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