QUALITY, VALUE, AND ACCEPTANCE OF ONLINE DEGREES AS PERCEIVED BY DEGREE-HOLDERS AND EMPLOYERS: A REVIEW OF THE LITERATURE

by

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A Research Paper Submitted to the School of Computing Faculty of Middle Georgia State University in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF SCIENCE IN INFORMATION TECHNOLOGY

MACON, GEORGIA

2023

Quality, value, and acceptance of online degrees as perceived by degree-holders and employers: A review of the literature

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Abstract

Crisis necessitates society to renew itself, frequently in a disruptive manner. The recent pandemic is accelerating the transformative modalities of learning, working, and relating with one another, both abruptly and radically. This paper examines the area of online education and attempts to show the effects of how institutions of higher education are experiencing dramatic transformations driven by the necessity to digitalize higher education while continuing to produce well-qualified graduates acceptable to hiring authorities and employers, despite the historic rejection of those candidates with distance degrees. This paper studies the published research and synthesizes the results to better understand the perceptions of online degrees as they relate to hiring or promotion decisions, with an emphasis on the technology disciplines and industries. This paper studies if there exists, or will exist, on employer perceptions of candidates' employability, a significant negative effect based on the modality of education. It evaluates the evolving perceptions resulting from the increasing mainstream, traditional institutions entering the market, and the immense transformation resulting from the pandemic. Graduates' perceptions of the value and quality are examined to inform institutions' future program designs. This paper also aims to establish the validity of the review by detailing the method, design, data collection, and data analysis processes.

Keywords: CS/IS/IT, employability, face-to-face, hybrid, modality, terminal degree,

Introduction

This literature review examines available research studying the perceptions of distance/online graduate degrees by employers, hiring authorities, or gatekeepers relative to degrees awarded following a traditional/face-to-face learning format. These perceptions can affect the potential employment opportunities for students and institutions. An interdisciplinary approach is employed to determine both employers' and students' perspectives regarding the quality and acceptability of degrees earned through distance learning/online studies, inasmuch as no solitary disciplinary perspective would adequately address this question. While the literature is divided, it does become evident that the perception may be evolving to a higher level of acceptance as more accredited universities have, and are, participating in the online learning modality. Finally, implications for future study are discussed.

There are abundant research studies and journal articles published, concentrating on distance and online education, across the globe, inclusive of, but not limited to, Australia, Brazil, Canada, China, India, Italy, Malaysia, New Zealand, Spain, Turkey, the United Kingdom, and the United States. Numerous studies have been commenced across the globe to ascertain the employability of online degree holders. Many of these studies have been limited to specific geographies as evidenced by (Adams & DeFleur, 2006; Baltzer, Lazaros, & Flowers, 2007; Blum, Dodd, & Goh, 2000; Guendoo, 2008; Roberto & Johnson, 2019; and Seibold, 2007 covering, specifically, the United States, and (Bahir, 2014) and (Zornes, 2012) focusing on Canada, while (Mustafa, 2013) studied Saudi Arabia. Similarly, many have been restricted to specific fields, including (Applegate, 2020); (Baltzer, Lazaros, & Flowers, 2007); (Hussain & Mirza, 2016) and (Mustafa, 2013) focusing on Academia, (Adams, DeFleur, & Heald, 2007) and (Preston, 2014) covering

specifically Healthcare; and (Blum & Goh, 2000) focused on the Hospitality Industry. However, studies about the hiring preferences in Information Technology disciplines are somewhat more scarce. This study aims to help improve knowledge by compiling research on this subject.

Problem statement

Employability might be loosely defined as a demonstrable array of abilities, attitudes, knowledge, skills, and work behaviors sufficient to prove successful in the labor market. As education advances toward less traditional delivery methods of instruction, will employer perception of candidates' employability diminish? For example, will employers perceive the employability of those candidates with a hybrid, degree earned through a combination of online and traditional coursework, or online degrees as being less than the employability of those applicants possessing face-to-face, traditional degrees? Similarly, do employers consider the employability of candidates with degrees earned online as less than those with a hybrid degree? Additionally, how do graduates perceive the modality and the results of attaining their degrees? The world has changed, and COVID turned everyone into online learners; has the COVID pandemic changed perspectives?

Purpose of the study

The two predominant considerations for every study or article are: *What are the conclusions of the relevant literature regarding employers' perceptions of degrees earned in distance or online programs and how do such degrees impact the potential employers' assessment of a candidate's employment value*? And: *How did the learner perceive the quality and value of the program they completed?* The particular interest of this paper is the CS/IS/IT field. This study aims to illuminate the impact of one's educational mode on employers' assessments of candidates' qualifications and employability. A secondary objective of this review is to provide useful knowledge to prospective learners and current students of distance programs as well as those institutions offering online degrees of how employers and former students/graduates perceive the value of online degrees and how previous graduates perceive the outcomes of the programs. Moreover, institutions can employ the conclusions to satisfy employers' informational needs. Prospective and current students of these schools can likewise become better educated regarding the perceived credibility of online degrees by hiring authorities.

Research question

RQ*:* What does the current body of literature say about employer perceptions of online degrees: Does there exist a significant negative impact based upon the modality (meaning the specific way of accessing, completing, or experiencing coursework) of education on employers' perceptions of candidates' employability?

Review of the literature

Online graduate degree programs in technical disciplines embody a rapidly expanding population for higher education institutes. Online courses provide a convenient way for students to earn their degrees without having to attend classes in person. Numerous extremely high-ranking institutions are advancing online graduate degrees (Deming et al., 2015; Kolowich, 2014; Seaman et al., 2018). Many degree programs are conducted completely online, allowing no face-to-face interface with either peer students or faculty. Some institutions provide hybrid programs that conduct many courses online with select cornerstone courses occurring face-to-face, or in an internship environment, such that students still receive significant face-to-face interaction (Knerl, 2020). Much of the literature suggests that employers appear to hire applicants with graduate degrees earned from traditional programs. This bias is sufficient enough to impact

employment choices as credentials earned through distance programs have frequently been denounced as not reliable, thus the predisposition bias is converted into a judgment of the candidates' presumed job performance deficit (Adams & DeFleur, 2005; Adams, Lee, & Cortese, 2012; Connolly & Dippenbrock, 2011; DePriest & Absher, 2013; Flowers & Baltzer, 2006).

Methodology

Research design

This review's methodology entails analyzing published research and studies of employers' perspectives on distance education. The literature included empirical research and literature reviews. This review condenses and presents a comprehensive narrative synthesis, narrative review, or overview, of the literature, otherwise known as a systematic or semi-systematic narrative review. Such a literature review examines published literature, suggesting that the included materials possess a measure of permanency and have possibly been exposed to a peer-review procedure (Grant & Booth, 2009, p.99). This method is described by Cowger & Tritz (2021) as "a common method that is used to better understand a person's experiences or a collective experience". It presents a comprehensive assessment of this relevant subject and illustrates the evolution and history of this issue. For purposes of this study, distance or online learning is operationally construed as "a modality employed in higher education wherein students are not obliged to be in traditional classrooms". The phrases distance learning, online learning, online teaching, online instruction, online education, and online courses, are employed interchangeably throughout the review.

Selection criteria and sources of data

The principal sources of literature were journals and academic papers. Owing to the purpose of researching the evolution of distance learning and its effect on hiring decisions, particularly in our current era, a search of the literature was conducted in three stages. Commencing with Stage I as the foundation of this review, published studies from the 2004-2010 time period was examined. Then, in Stage II, employing the search keywords online learning, employers' perceptions, hiring practices, and online degree programs, empirical research published from 2010 thru the present time was searched. Subsequent to these preliminary discoveries during Stage II, keywords, descriptors, and parameters expanded in Stage III search with the additions of online teaching and courses vs. face-to-face courses, e-learning vs. classroom learning, teaching, and instruction's effect on hiring, online graduate IT degrees, and IT management employment practices.

The principal sources employed for the collection of published works were databases including ContentFirst, EBSCO, Education Full Text, ERIC, GALILEO, GIL, Google Scholar, ResearchGate, and SAGE. Using the search criteria described, a wide array of academic works were selected to resolve our research question: What does the current body of literature have to say about employer perceptions of online degrees: Does there exist a significant negative impact based upon the modality (the specific way of accessing, completing, or experiencing coursework) of education on employers' perceptions of candidates' employability? Each of the articles was selected using a scoring assessment (Appendix A).

Analysis

The analysis employed a qualitative systematic review, a method of evaluating findings from qualitative studies (Grant & Booth, 2009). That is, a rigorous systematic review process was used to collect articles, and then a qualitative approach has been used to assess them (Appendix B). Analysis using meta-analysis was attempted to integrate the results of the involved studies by combining the results of those studies to evaluate and identify arguments, patterns, and relationships appearing in the studies in this research. However, it was ineffective to conduct a meta-analysis of the studies included in the review as they used varying methodologies.

Analysis of pertinent data was subsequently conducted through what Hsieh and Shannon (2005) labeled a conventional content approach; a qualitative methodology very similar to conducting a narrative inquiry (Clandinin, 2013). Per se, this review is not a perfect narrative inquiry according to the specifics set forth by Clandinin. Rather, *a narrative as content analysis* described by Clandinin was employed to conduct analysis, using Hsieh and Shannon's five-step data analysis. Those steps were:

1. Convert text into a narrative, determining analysis and themes,
2. Establish rules for coding,
3. Apply the coding to narrative data
4. Revise as needed, and
5. Verify and select final data.

Salient factors were organized into categories then common themes were identified through thematic coding. The three final broad categories were labeled 'Quality', 'Acceptance', and 'Negative Bias', then, these categories were subdivided into sub-categories, including applied skills, examinations, interaction, interpersonal skills, mentoring, personal history, quality, and work experience. Each sub-category was identified in the three main categories. These were then coded into the three final themes (Stemler, 2000). While gaps do exist in the research, this posed no substantial obstacle as this review demonstrates the evolution of perceptions. One disadvantage to this review is that most of the more contemporary research has cited the same previous studies, including Adams et al., (2005, 2006, 2007, 2012, 2018), Deming et al., (2015), DePriest et al., (2013), and Roberto & Johnson (2019).

Results

Quality

Roman, Barnett, & Eatough, (2018) classified graduate programs, both doctoral and master's, using learner assessments of quality and aspects including the attaining of practical skills, program culture, and quality of faculty. A review of the raw data indicates that the top 20 programs include no online doctoral programs. Several distance graduate programs were scored throughout the rankings of specific attributes, including program culture for which one distance program ranked in the top 20 while the acquiring of applied skills included two in the top 20. Three hybrid and fully online programs ranked in the roster of best master's programs. Markedly, the research evaluated flexibility, expressed as an *"Opportunity for students to arrange their schedule to fit other facets of their life, and/or take a semester off due to life events"*. Inexplicably, the authors deemed this immaterial in Ph.D. programs.

A review of research pertaining to distance and hybrid study, which includes principally descriptive and qualitative studies, revealed a concurrence that distance learning results are generally the same as traditional learning, though learners with previous experience or training with computers listed higher approval than those without after online programs (Tallent-Runnels et al., 2006). However, studies focusing on course completion data rather than test scores largely exhibit poorer results if classes are conducted completely at a distance. (Baum & McPherson, 2019). Likewise, contemporary controlled, randomized trials of semester-long university courses resulted in poorer test scores from learners in completely online classes than those of comparable learners in face-to-face classes (Tallent-Runnels et al., 2006).

According to Clinefelter, et al., (2019), seventy-one percent of graduate student respondents are enrolled full-time. This parallels historic data suggesting such students seek to complete their programs and graduate in the least practical time. With fifty-nine percent employed full-time and eighteen percent employed part-time, students have to balance employment obligations with the demands of coursework. Thirty-nine percent of online graduate students were actively completing undergraduate courses in the past two academic years. A like number (Thirty-seven percent) were not active students for the past five years at a

minimum. This suggests that as time passes, these learners realize that graduate-level education has the potential to advance their professional position, and a clear indication that graduate students learning online perceive graduate school as a pathway to, at the very least, add to their body of knowledge, and more likely enhance their employability. This study determined that time and motivation are critical elements of online graduate students' salient factors in assessing the quality of their programs. Further, the value to the graduates returned that an impressive eighty-four percent strongly agreed that the program was worth their costs.

Allen and Seaman (2015) reported that at that time online degrees were flourishing, as 71% of public colleges and universities in the United States included them as part of their strategic plans. Online students are statistically older, female, employed, and have greater personal obligations than males (Clinefelter, et al., 2019; O'Shea, et al., 2015). Learners select distance learning for a variety of explanations. Countless learners would not have the ability to engage in studying for degrees, particularly graduate degrees were it not for the alternatives provided by online/distance programs and the usually lesser expense (Deming, et al., 2015). Many learners' primary considerations are employment and earnings potential. Hiring decision-makers' perceptions regarding online graduate degrees is another principal consideration in that degree holders perceive they might need to argue their degrees' quality and value throughout the hiring process to receive equal consideration (Roberto &Johnson, 2019).

Acceptance

Marquardson and Elnoshokaty (2020) addressed the question of which is more desirable by employers in cyber-security: skills, certifications, or degrees. While candidates are able to enhance skills, earn certificates, and complete degrees concurrently, economic and time limitations frequently demand students focus on endeavors best suited to improve their careers.

The particular interest of this paper is the CS/IS/IT field, wherein, according to the National Science Board (2018) information technology (IT) is among the most rapidly expanding programs in both undergraduate and graduate schools, and has among the most online degrees in all STEM (science, technology, engineering, and mathematics) areas. Within these areas, CS/IS/IT encompasses the widest array of master's degree programs that expressly educate students for a specific profession, thus are terminal degrees though this does not inhibit progressing into a Ph.D. program according to Professional Science Master's (2018). While online/ distance graduate degrees in computer science and information technology disciplines are touted as a key higher-educational revolution by the National Science Board (2018), little accord exists concerning the employment prospects for the program graduates. Whether the online programs match students' investment expectations and professional objectives, in particular at the graduate-degree level, is a topic of much contemporary research (Grzeda & Miller, 2009; Yoo & Huang, 2013).

Employment candidates in information technology and computer systems fields are judiciously questioning whether their investment in a graduate degree is a prudent expenditure. In their study, Marquardson and Elnoshokaty (2020) evaluated 11,938 available cyber-security jobs posted on Dice.com to ascertain the desired and required credentials. Their conclusions noted that sixty percent (7,177) of cyber-security vacancies require a degree in a corresponding discipline. Of those, twenty-four percent (2,851) require a master's degree. Twenty-nine percent (3,406) additionally require certain specific certifications. The designated data record illustrated sixty percent of posted vacancies demanded degrees, demonstrating that for the specific field of cyber-security degrees remain compulsory. Employers expect certifications, degrees, and applied skills.

Numerous studies have been conducted and journal articles authored focused on online education and spanning the globe, inclusive of, but not limited to, Australia, Brazil, Canada, China, India, Italy, Malaysia, New Zealand, Spain, Turkey, the United Kingdom, and the United States (Thirunarayanan, 2010).

Numerous studies have likewise been conducted globally to ascertain the employability of graduates of online programs. A large part of this research has pertained to specific nations or regions (Adams & DeFleur, 2006; Baltzer, Lazaros, & Flowers, 2007; Blum, Dodd, & Goh, 2000; Guendoo, 2008; Roberto & Johnson, 2019; and Seibold, 2007) covering, specifically, the United States, and (Bahir, 2014; and Zornes, 2012) focusing on Canada. Likewise, a large portion has researched explicit fields, including (Applegate, 2020); (Baltzer, et al., 2007); and (Hussain & Mirza, 2016) focusing on academia, (Adams, et al., 2007) focusing on healthcare, while (Blum & Goh, 2000) focused on the hospitality industry.

In their somewhat dated research study, Flowers and Baltzer (2006) employed a survey constructed on employer perceptions and the conclusions demonstrated that respondents were substantially less interested in the candidate with a distance or online doctoral degree. These conclusions are analogous to a simultaneous and equally dated study by Adams and DeFleur (2006), as well as several others presented in this paper. A perception, or misperception, of the reduced credential value of online degrees, potentially leads employers and hiring managers to underrate or devalue candidates' educational backgrounds based on their delivery modality.

Innumerable universities offer online or distance degrees in conjunction with traditional degrees. Allen and Seaman (2015), assert that 32% of U.S enrollment, 6.7 million students, in 2013, completed one or more online courses. Graduate degree holders completing programs online, face a potential impediment vis-à-vis graduates of traditional programs (Grossman & Johnson, 2016).

In contrast to that finding the National Center for Education Statistics (NCES) (2022) reports that:

- Nearly 6 million students - over 28% of all college learners- were enrolled in at least one online course at a degree-granting college or university.
- Of those students, over 2.8 million were exclusively online learners with no in-person courses taken.
- The majority of online learners were enrolled in undergraduate programs, with 2.1 million exclusively online learners earning a bachelor's degree.

Among graduate students in the fall of 2020, over 2.2 million (71 percent) enrolled in one or more online/distance education courses. Over 1.6 million, (52 percent of the total graduate student enrollment) learned exclusively by distance education courses. This is higher than the 2019 statistics in both number and percentage during which 1.3 million (42 % of graduate students) graduate students completed a minimum of one online course and a million students (33 %) exclusively took online courses (NCES, 2022).

Considering the number of online students at mainstream, traditional universities, it is increasingly difficult for these degrees to be disregarded. Organizations are increasingly aware of this changing position, and many have now altered employment procedures to consider all modalities of degrees (NCES, 2022).

The U.S. Bureau of Labor Statistics (2022) reports that jobs in the field of information technology and computer science are predicted to increase by 15 percent by 2031, far more rapidly than the mean for all other occupations; thus, projecting an estimated 682,800 new jobs by 2031. As well as new positions arising out of the expansion of the field, openings additionally become available out of the demand to replace those employees who change fields or otherwise exit the field. Typically, approximately 418,500 opportunities annually are predicted to occur as a result of expansion and departures. BLS reports that during May 2021 the annual wage in this field averaged $97,430, or over twice the average wage in all fields of $45,760.The increase in demand for qualified CS/IS/IT staff is largely a result of the growing deployment of computer and internet-based systems in both the business and consumer sectors. Computer science is a field that is also expected to grow by about 11 percent by 2031. This is due to the growing need for qualified computer

science professionals in fields such as big data, artificial intelligence, and cyber-security. There is an array of online graduate-level information technology and computer science degrees that can help students prepare for careers in these growing fields. Some of the most popular programs include the Master of Science in Computer Science, the Master of Information Systems, and the Master of Science in Information Technology (U.S. Bureau of Labor Statistics, 2022).

According to Adams and DeFleur (2006), there was, at that time, no definitive consensus on the perspectives of hiring managers, who appeared more likely to view online IT degrees more negatively than traditional degrees, believing that online students are less capable and less qualified. They frequently questioned the rigor of online programs, as they have continued to do, believing that they were not as challenging as traditional programs. Many employers will not accept online doctorate degrees in computer sciences and IT because they are concerned about the credibility of the degree. Baum & McPherson (2019) report that the results of several studies examining perceptions of employers suggest that employers continue to perceive online degrees as being inferior to those earned through a traditional study modality. Employers do, however, appear to be more accepting of online degrees for lower-level positions than for upper-level positions. They view online degrees as not being subject to the same standards of accreditation as traditional degrees, and the quality of the coursework and instruction is not necessarily the same. Additionally, employers are frequently concerned that the student did not complete the program in a supervised environment and may not have the same level of knowledge or skills (Baum & McPherson, 2019).

Tabatabaei & Gardiner (2012), offered a collection of vignettes involving theoretical Information Systems and Computer Science degree holders to eighty-two CS/IS/IT/ hiring authorities who practice within IT recruitment to establish if the IT degree holders' education mode (distance, hybrid, or face-to-face) impacts their assessment of these "candidates". Tabatabaei & Gardiner's conclusions did not find that a CS/IS/IT degree holder's program modality was a critical determinant to employers. Conversely, other salient points contained within the collection, including professional history and educational performance proved more significant to employers. Generally, Tabatabaei & Gardiner's conclusions asserted the position that distance programs and coursework is becoming an acceptable option when compared with face-to-face programs, citing "other factors" governing assessments of CS/IS/IT degree holders' employability.

Of note, Columbaro & Monaghan, (2009), suggest that a degree earned at a distance is likely to be more positively perceived in a discipline, field, or industry highly reliant on technology when compared to traditional, non-technology-related industries. These authors additionally report the following variables influencing the acceptability and regard by hiring authorities of online degrees:

1. Recognition and standing of the university awarding that credential,
2. The school's and the specific program's accreditation and standing; and
3. Hiring authorities' perception that online students possess better discipline and initiative.

Negative bias

A study authored by Adams and DeFleur (2005), concluded that when offered a selection of hypothetical employment applicants possessing doctoral degrees earned either by face-to-face, hybrid, or distance learning, with all other things being equal, of the 109 hiring authorities responding, an overwhelming 98% chose the person who completed a face-to-face degree. In these authors' subsequent studies published in each of the successive two years, this conclusion fluctuates from 95% (Adams, DeFleur, & Heald, 2007) to 98% (Adams & DeFleur, 2006) dependent upon specific disciplines and the candidates' level of degree. Significantly, while a preponderance of the studies of other researchers conducted interviews or questionnaires to evaluate employers' assessments, the three Adams and DeFleur papers were unique in that the employers literally reviewed the CVs of the imaginary applicants with equivalent work practice but

diverse degree modalities (distance, face-to-face, and hybrid) to determine their choice to employ. As noted earlier, a contemporaneous paper by Flowers and Baltzer (2006) mostly concurred with these results, though it employed a survey constructed only on perceptions. Respondents classified answers using a Likert Scale with the outcomes demonstrating that respondents were considerably more uninterested in the candidate with a doctoral degree earned online for a faculty member in a tenure-track position. These outcomes were analogous to the section concerning exclusively academia of the Adams and DeFleur (2006) study involving the perceptions as to the validity and acceptability of online doctoral degrees. Many of these perceptions are reportedly present today (Baum & McPherson, 2019).

Faculty members at American institutions were surveyed (Karl & Peluchette, 2013) with results indicating that an overwhelming majority (90%) would not hire graduates with an online degree for a tenure-track faculty position. Every candidate with comparable professional experience but having traditional doctorates was perceived as more qualified than those with online doctorates. Furthermore, earlier studies have determined why hiring authorities deem degrees as unequal. Numerous hiring authorities consider distance programs and credentials as lesser in quality and less desirable compared to face-to-face programs and credentials (Flowers & Baltzer, 2006; Safara, 2017). Online degrees are frequently deemed as focused on amassing "a lot of information but not much learning" (Adams & DeFleur, 2005, p. 80), or as emanating from a "degree mill" (Safara, 2017), or branded as products of substandard instruction and careless testing and examination (Roberto, 2019).

As Flowers and Baltzer, (2006), reported "*the overwhelming sentiment is (was) that online programs are not thought to have the quality of a face-to-face program, and that an online program is unable to develop the personal skills needed"* (p. 38). Much of this apprehension concerning educational value derives from the belief that distance education provides insufficient communication and collaboration with peers and instructors which it is commonly believed enhance a candidate's skills and abilities and that distance learning fails to develop social and communication skills (Flowers & Balzer, 2006, p. 38). Furthermore, there is a resounding perception that distance education graduates, particularly those in graduate programs, are without appropriate employment experience, which provides them with the necessary interpersonal and communication skills (Adams & DeFleur, 2005) the practical and technical proficiency derived through direct contact with qualified instructors (Karl & Peluchette, 2013) and hands-on learning (Safara, 2017).

Safara (2017) conducted a test with 111 university graduates which indicated, as was both anticipated and in agreement with prior studies, (Adams & DeFleur, 2005; Adams & DeFleur, 2006; Adams et al., 2007; Connolly & Diepenbrock, 2011; Deming et al., 2014; DePriest & Absher, 2013; Flowers & Baltzer, 2006), that hiring authorities' perceptions of candidates' employability are greater for a face-to-face modality program than a distance modality as it was likewise better towards a hybrid modality than a distance modality (DePriest & Absher, 2013). DePriest & Absher's (2013) study also concluded there exists a clear correlation between the educational modality and assessments of hiring authorities of candidates' employability and that those perceptions worsen as the mode includes more online courses. What was both unexpected and significant is that the bias was clear notwithstanding a significant number of the responding employer participants themselves having personal histories with online education.

The Roberto and Johnson (2019) qualitative study determined that sixty-five percent of hiring authorities selected those with traditional over those with distance degrees for employment, all other things being equal. When deciding on career advancement for those already employed, there was no preference based on educational modality. Fifty percent of hiring authorities with a preference for traditional degrees when making employment decisions had that same preference when making promotion decisions, suggesting more weight is given to modality during hiring, but not during promotions.

Discussion

Online students are statistically older, female, employed, and have greater personal obligations than males (Clinefelter, et al., 2019; O'Shea, et al., 2015). Students pursue online degrees for a variety of reasons, and many would not have the ability to pursue higher education if not for the flexibility provided by online/distance programs and the usually lesser expense (Deming, et al., 2015). Students are troubled about employment and earnings potential. When candidates pursue employment or promotion, employers judge their educational background and the value of different degrees, as they perceive them, based on the mode of delivery, which may lead to negative employment assessment decisions. Hiring decision-makers' perceptions regarding online graduate degrees are the principal concern as graduates perceive they may need to defend the quality and value of their degrees in the course of the hiring process to receive equal consideration.

Cornell University (2022) asserts that educational programs that are active, contextual, engaging, and social produce deeper learning. The same holds when distance programs organize collaborative group projects and assignments and when students engage in cohort or peer group conversations and meetings on internet meeting platforms such as Teams, WhatsApp, and Zoom. The benefits of collaborative learning, which refutes many employers' perceptions of a lack of peer interaction and mentoring, include:

- Developing high-level thinking, oral communication, self-management, and leadership skills.
- Promotion of student-faculty interaction.
- Increase in student retention, self-esteem, and responsibility.
- Exposure to and an increase in understanding of diverse perspectives.
- Preparation for real-life social and employment situations.

The apparent employability of candidates holding online graduate degrees is essentially contingent upon perceptions. When decision-makers are surveyed as to overall perceptions regarding applicants from face-to-face as opposed to online or distance programs, they commonly assert no greater partiality for one modality than another (Bailey & Flegle, 2012; Society for Human Resource Management, 2009; Thirunarayanan, 2010).

The Society for Human Resource Management, (2010), surveyed employers representing a wide array of governmental, private, and public sector participants regarding perceptions of employment applicants with online degrees. Of the 449 respondents, forty-nine percent either agreed or strongly agreed with the statement *"Online degree programs are equally credible to traditional degree programs."* Although participants claimed largely positive perceptions regarding these degrees, the perceptions were significantly more negative toward online degrees received through programs at "for-profit" schools and, most pertinent to this study, more negative when searching for executives and managers as compared to non-management candidates.

Still, in the past 5 years, there has been a significant increase in the acceptance of online graduate degrees in information technology and computer sciences. The rise of remote work and the COVID-19 pandemic have accelerated the trend of online education, leading to greater recognition and acceptance of online CS/IS/IT graduate degrees from both employers and academic institutions. Furthermore, advancements in online learning technology have made it possible for students to receive a high-quality education from a distance. As a result, many employers now view online CS/IS/IT degrees as equivalent to traditional, in-person degrees. Moreover, the evolution of mainstream, reputable, accredited universities into the online graduate degree arena has vastly improved acceptance levels. The CS/IS/IT field further lends itself to online study better than almost every other discipline in that these are ordinarily the most technologically astute students, best suited for using technology to successfully complete distance programs.

Employers are currently viewing online and face-to-face degrees differently. Many employers may view online degrees favorably as they indicate a student's ability to complete coursework independently and efficiently. Once facing distrust by employers, online degrees are now perceived as demonstrating a graduate's professional determination and time management competencies in that online students must frequently balance their education with a full-time job, and many employers view that as a positive (Georgetown University, 2022).

Conversely, other employers may prefer face-to-face degrees as they enable students to intermingle and collaborate with instructors and classmates on a more regular basis. Ultimately, it is up to the individual employer to decide which type of degree they value more

There clearly remains some negative bias against online degrees when compared with traditional degrees, particularly at the graduate level.

Recommendations

Online college students' educational histories vary, presenting potential obstacles as well as prospects for schools. Counselors must adapt their advice to the student's experience, and deliver student services aimed at learners with diverse experiences, such as exhaustive guidance for first-generation students and technical support made accessible**,** especially for older students who frequently possess few, if any, online skills

Future Research

Education is about both teaching and learning and it is likewise true that what is effective in teaching must be equally applicable to learning. And as more mainstream universities include online graduate degrees, especially in information technology and computer disciplines, the question that must be asked is whether employer perceptions are evolving. Thus, as a consequence of the unique and evolving nature of online education, particularly at the graduate level, hiring managers' and policymakers' perspectives on the effectiveness of online education must be addressed and emphasized so that they may be resolved.

To address the vast variation of programs and educational levels, more study is required (e.g., a comparison of graduate students with undergraduates and nongraduates) (Columbaro & Monaghan, 2009). Graduate degrees earned remotely or online might be perceived more positively in disciplines that rely more heavily on technology than in non-technological-reliant fields. Future studies must examine how different delivery modalities affect the employability factors and whether students' opinions about their employability have an impact on their choice of educational delivery modes. Studies should be developed in the future to understand how demographic differences impact one's perception of the mode of advanced degree delivery. As online enrollment rises, it is crucial to study the lasting implications online degrees have on graduates' employability. This demands considerations of questions including:

> (1) How have recruiting procedures and acceptability of candidates with graduate degrees earned online evolved over time?
> (2) What are the evidence-based best practices for evaluating the employability of distance-earned graduate degrees?
> (3) What are the evidence-based best practices supported by research for employing candidates with online graduate degrees? And,
> (4) Are distance/online learning, in general, and more explicitly master's and doctoral degrees, acceptable to employers, whether in academia, business, government, or industry?

The long-term professional ramifications should be considered by prospective students while selecting graduate programs and delivery options. Furthermore, an assessment of contemporary attitudes toward

completing information technology and computer sciences graduate degree studies by different educational modes, be it face-to-face, hybrid, or online, is needed. It is currently crucial for higher education institutes and potential graduate students to understand how online graduate students are perceived in the present employment market as well as how decision-makers perceive candidates possessing online graduate school degrees.

Regardless of the ongoing argument as to the efficacy of different modalities of study and learning, online graduate education is the current trend and the future of higher education as more online courses, programs, and graduate degrees are accessible around the globe every semester. This trend indicates the acceptance disparity between traditional face-to-face education and online/distance education is diminishing, and the increasingly positive perception of online education will evolve further as more members of society embrace it. Certainly, the Covid-19 pandemic and its consequential lockdown and the social distancing phenomenon have brought awareness of the issue to the government, business and industry sectors, and academia. Moreover, over time, empirical data on a greater number of attributes, such as professional advancement, salary and earnings, and title and position will be compiled, and in so doing provide additional dimensions to compare online graduate students with traditional graduate students.

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Appendix A

Narrative Review/Overview Assessment Measure

The number circled indicates what I believe is the measure of the suitability of the piece of literature being reviewed for its inclusion in this paper.

"1 = Absent 2 = Present but not complete 3 = Present and complete

Initial Impression

1 2 3 Does the review appear to be relevant to the issue of interest: Employer's or Student's perception?

Abstract

1 2 3 Is the specific purpose of the review stated?
1 2 3 Is context for the overview provided?
1 2 3 Is the type of research design stated?
1 2 3 Are the search methods clearly summarized?
1 2 3 Are the important findings clearly discussed?
1 2 3 Are major conclusions and recommendations clearly outlined?

Introduction

1 2 3 Is the precise purpose of the review clearly detailed based on a brief review of the literature?
1 2 3 Was a context or need/importance for this study established?
1 2 3 Are any/all novel terms defined?

Methods

1 2 3 Were the electronic databases used to conduct the literature searches identified (Eric, Galileo, GIL, ResearchGate, etc.)?
1 2 3 Were the search years parameters stated?
1 2 3 Were the search terms itemized?
1 2 3 Were standard terms used as search terms?
1 2 3 Were the guidelines for the inclusion and exclusion of articles in the literature review clearly identified?

Discussion

1 2 3 Were the results summarized in a coherent manner?
1 2 3 Was a critical evaluation of each study equal and reproducible
1 2 3 Was the quality of the included articles measured objectively?
1 2 3 Was the disparity in findings of the studies critically analyzed?
1 2 3 Were the meanings of the various results addressed?
1 2 3 Do the authors relate the results of their study with prior research in a significant way?
1 2 3 Were any weaknesses of the study addressed by the authors?

Conclusions

1 2 3 Was a clear summary of pertinent findings provided?
1 2 3 Were authors' conclusions supported by the evidence provided?
1 2 3 Were specific directives for new research initiatives proposed?

1 2 3 Specific implications to the practice environment are addressed.

References

1 2 3 Are references relevant, current, and appropriate in number?
1 2 3 Are all papers reviewed cited in the references?

Overall Impressions

1 2 3 Do the merits of this review of the literature outweigh the flaws?
1 2 3 Were the authors unbiased in their approach to the review?
1 2 3 Will the results help in my philosophical or evidence-based approach?

Comments & Notes:

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Appendix B

What does the current body of literature have to say about employer perceptions of online degrees? Does there exist a significant negative effect based upon the modality, meaning the specific way of accessing, doing, or experiencing coursework, of education on employer or degree-holder perceptions of candidates' employability?

	AUTHOR and YEAR	TOPIC/MAIN IDEA	POPULATION OF STUDY	RESULTS/CONCLUSIONS	IS THERE A RELATION TO THIS RESEARCH PROJECT
1	Adams, J., & DeFleur, M. (2006).	The acceptability of online degrees earned as a credential for obtaining employment	A national survey of hiring executives	A national survey of hiring executives was conducted to assess the acceptability of a job applicant's qualifications for employment that included a degree earned solely online or one that included a significant amount of online coursework. The questionnaire was sent in response to job advertisements posted in newspapers in eight major metropolitan areas throughout the United States. It described three hypothetical applicants: One earned a degree through a traditional modality a second obtained a degree wholly online from an online only institution; while the third earned a degree by a hybrid or combination of online and traditional coursework. The question addressed by this study is whether a job applicant who has earned a bachelor's degree entirely or partially online has the same chance of being hired as one whose degree was completed through traditional coursework. The findings appear to indicate rather clearly that they are not.	✓
2	Baum, S., & McPherson, M. (2019).	The human factor, the promise, & the limits of online education.	Undergraduate students in multiple disciplines in a four-year research institution. Examines many courses over a period of two years.	Thisstudy indicated that when focusing on course completion as opposed to test scores weaker results were attained when courses are conducted entirely online. There is a greater chance of withrawal by online learners that by traditional students.	✓
3	Clinefelter, D., Aslanian, C., & Magda, A. (2019, July).	Online college students' demands and preferences of their degree programs.	An introductory physics course at a state university in the mid-west.	In early 2019, Learning House and Aslanian Market Research conducted surveys with 1,500 individuals nationwide. Respondents were at least18 years old, had a at least a high school diploma, and were enrolled or planned to enroll in the next 12 months in a fully online degree, certificate, or licensure program. Graduate students represent only 15% of the US college population, they are 27.9% of the online learning population (National Center for Education Statistics, 2019).	✓
4	Columbaro, N., & Monaghan, C. (2009).	A literature review researching employer perceptions of online degrees.			

5	Knerl, L. (2020, April 14).	What employers really think about your online degree.			
6	Kreth, Q., Spirou, M., Budenstein, S., & Melkers, J. (2019).	How prior experience and self-efficacy shape graduate student perceptions of an online learning environment in computing	Fi		
7	Marquardson, J., & Elnoshokaty, A. (2020).	What companies demand for entry-level cybersecurity jobs: Skills, certifications, or degrees	Studies conducted by others across the country in undergraduate institutions in the U.S.		
8	NCES. (2022).	Companies have been taking notice of the online degree trend and have adjusted their hiring practices to account for all types of degree eamers .		The new technology can be used to provide a meaningful, hands-on classroom experience in a few different ways.	
9	O'Shea, S., Stone, C., & Delahunty, J. (2015). "I 'feel' like I am at university even though I am online." .	Students engagement with higher education institutions in an online learning environment			
10	Roberto, K., & Johnson, A. (2019).	Employer perceptions of online versus face-to-face degree programs.			

Tallent-Runnels, M., Thomas, J., Lan, W., Cooper, S., Ahern, T., Shaw, S., & Liu, X (2006). Teaching courses online			This paper indicated that online study is perceived by students as beneficial in that it provides them with a degree of autonomy, convenience, and financial savings.Students with experience in computer based instruction or have some degree of proficiency with computers are even more drawn to online learning. Students perceive the online modality lessens computer anxiety and improves their proficiency.	
Safara, B. (2017).	The effect of mode of education and degree level on employer perceptions of applicants' hireability.			
Society for Human Resource Management. (2010).	Poll covering employment practices and attitudes regarding traditional F2F and online degrees.			
Tabatabaei, M. & Gardiner, A. (2012).	Recruiters perceptions of Information Systems graduates comparing traditional with online Degrees.		Online/distance learning offers significant potential and promise. It is crucial that educators and Instructional technology experts continue improving online learning capabilities, and to address conditions which are most effective for online study and which are least effective as compared to the traditional mode of learning. The perception of online education is improving, but more is needed before hiring authorities will accept online degrees as equivalent to those earned in a traditional manner.