Industry-based certificates: Student perceptions of benefits

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ABSTRACT

Higher education has seen a rise in the use of alternative credentials including digital badges, professional certificate preparation programs, and competency assessments. This study explores student perceptions of benefits from earning an industry-based certificate (IBC), which refers to assessment-based credentials administered and validated by third-party organizations. Data were collected using an online survey of undergraduate students. The results suggest that students perceived IBCs as beneficial, yet perceived benefits varied by whether or not the student had already earned an IBC. In addition, students who had, and had not, earned an IBC were both likely to be more interested in taking a course, and more likely to recommend a course that included an IBC as part of the course. Implications for higher education and suggestions for future research are provided.

Keywords: alternative credentials, industry-based certificates, student perceptions, skills, survey

INTRODUCTION

In recent decades, higher education has experienced significant criticism about the value of traditional higher education degrees. In response, some academics have argued for higher education to embrace microcredentials as alternative credentials (e.g., Bull, 2015; de Botton, 2015). Today, there is a growing trend in higher education for institutions to embed alternative credentials into curriculum such as digital badges (e.g., Bowen & Brown, 2014), professional certificate preparation programs (e.g., Daniels, 2011), and competency assessments (Dragoo & Burrows, 2016).

At the same time, potential employers are demanding more than just degrees from recent graduates. According to the National Association of Colleges and Employers' *Job Outlook 2018* survey, almost 60% of employers want to see evidence of technical skills on recent graduates' resumes (NACE, 2017). One mechanism is through earning digital badges, which may indicate mastery of specific skills or abilities to potential employers (Young, 2012) and add clarity to understanding a student's academic record (Zalaznick, 2017). In addition, companies are using assessment tools such as aptitude tests of specific skills and competencies to recruit and select among applicants (Chamorro-Premuzic, 2015). Analysts predict that industry-certificated learning experiences will become a major disruptor of higher education (Weise & Christensen, 2014).

One type of microcredential is an industry-based certificate (IBC). Defined as assessment-based credentials administered and validated by third-party organizations (Goldring, 2015), IBCs have the potential to merge traditional academic curriculum with technical skills required by recruiters. However, little is known about student perceptions of IBCs. The purpose of this study is to explore student perceptions of IBCs as a component of business curricula. Specifically, the study investigates perceived benefits and the importance of earning an IBC, and explores differences among students who have, and have not, earned an IBC.

LITERATURE REVIEW

IBCs are assessment-based credentials that are administered and validated by third-party organizations (Goldring, 2015). Unlike digital badges offered by colleges and universities (e.g., Bowen & Brown, 2014), IBC learning content is typically not controlled by faculty. Instead, companies and professional organizations own both learning materials and assessments. Unlike professional certificates earned through technical, career, and vocational school programs, IBCs can be earned without formal enrollment in an academic program. Instead, many are available to anyone willing to spend the time and/or money required to complete the learning and assessment(s).

Several companies across myriad industries now offer IBCs including (but not limited to) Adobe, Amazon, HubSpot, Hootsuite, Microsoft, Google, WordPress, Facebook, LinkedIn, Twitter, Salesforce, Qualtrics, and Cisco. For example, Google offers a Good Analytics Individual Qualification (IQ) to anyone who passes their Google Analytics IQ assessment (Google, 2018a). Another example is HubSpot Academy, which offers 15 different certificates related to digital marketing, sales, or web design (HubSpot, 2018). Both Google and HubSpot offer learning materials and assessments for free to users. For both, online videos organized into courses, units, and lessons are provided for pre-assessment training.

Potential Benefits of Industry-Based Certificates

Embedding IBCs into graduate and executive education program curriculum may add value for professionals (e.g., Bell 2017; Daniels, 2011). Focusing on IT curriculum within an MBA program, Bell (2017) argues that integrating IBCs into MBA curriculum adds value by increasing students' ability to compete in the job market and by developing students' abilities to use critical thinking skills to solve problems. Focusing on executive education, Daniels (2011) suggests professional certification preparation courses allow certification earners to establish a measurement of knowledge and attest to skills developed.

Academics also argue that IBCs add value for undergraduate courses (e.g., Goldring, 2017; Goetz, 2011; Stanton, 2016). For financial planning courses, Goetz et al. (2011) argue that concurrent study for coursework and professional certifications has four primary benefits for students: (1) availability of career choice information; (2) improved academic performance; (3) increased marketability and value to prospective employers; and (4) greater preparedness for the workforce. For digital marketing courses, Stanton (2016) found using learning materials from companies offering IBCs improved course organization, and Goldring (2017) notes that integrating IBCs offers opportunities for learners to apply knowledge learned. Stanton (2016) and Goldring (2017) also state that earning an IBC increases the success rate of students in the job market.

At the program-level, Deale and Schoffstall (2015) investigated hospitality educators' perceptions and use of industry-related certifications in hospitality education. The results found that educators believe benefits for students included helping with the job search, boosting career credentials, demonstrating knowledge and skills, and helping to obtain a higher salary (Deale & Schoffstall, 2015). Hospitality educators tended to agree (77%) that it was important for students to have certifications before they graduate (Deale & Schoffstall, 2015).

Because many IBCs are available to the general population, earning IBCs can be a part of lifelong learning. Love (2011) found that seeking certifications associated with his/her profession is one of eight characteristics associated with being a lifelong learner. Specifically, Love (2011) argues that lifelong learners can both identify professional certifications associated with his/her profession and develop a learning path to achieving certification. Two other characteristics of lifelong learning were closely associated with IBCs: (1) self-assesses and takes learning action based on assessment and reflection and (2) remains current in his her/her field and takes responsibility for identifying knowledge deficiencies and learning opportunities (Love, 2011).

METHOD

The purpose of this study is to explore student perceptions of IBCs as a component of business curriculum by investigating perceived benefits and perceived importance of earning an IBC. Data were collected using an online survey through Qualtrics. Participants were recruited from a subject pool of students enrolled in one (or more) of 20 marketing courses. Participation was anonymous; students were provided with course credit for participation. On average, the survey took approximately four minutes to complete (M = 241 seconds; SD = 131 seconds).

Survey

Respondents first read a short statement (≈ 150 words) about IBCs that explained the concept, contrasted IBCs to academic credentials (e.g., majors, minors, and certificate programs), and named specific certifications as examples. The statement defined IBCs as "Company-endorsed skill certifications often involving some type of short training (10-12 hours) plus an exam or other assessments." A screener question then asked whether the respondent had ever earned an IBC.

Respondents who had earned an IBC were asked questions about the subject, the name and company, perceived benefits of having an IBC, likelihood to recommend earning an IBC to a friend or classmate, perceived importance of earning an IBC, and behavioral intentions towards classes offering an IBC.

Respondents who had not earned an IBC were asked about their interest in earning an IBC and then prompted with six descriptions of specific IBCs including *HubSpot's Inbound Marketing*, *HubSpot Academy*, *Google Adwords*, *Google Analytics*, *Microsoft Office Specialist*, and *LinkedIn Learning Paths*. Respondents were then asked questions about perceived benefits of having an IBC, perceived importance of earning an IBC, and behavioral intentions towards classes offering an IBC.

All respondents were asked demographic questions including gender, age, class rank, international student status, first-generation student status, college major, and GPA. Respondents were also asked if s/he had completed an internship and if s/he had ever worked full-time for more than six months.

Dependent Measures

Three dependent variables were assessed. Perceived benefits were measured using nine, seven-point Likert-type scale items. Five items were adapted from Deale and Schoffstall (2015); others were developed specifically for the study. Statements focused on perceived benefits associated with respondents' job search, credentials, knowledge / skills, salary, confidence in abilities, lifelong learning, demonstration of achievement, commitment to learning, and interest in a field of study. Cronbach's alpha demonstrated good scale reliability, $\alpha = .94$.

Perceived importance of earning an IBC was measured using two, seven-point Likert-type scale items. The first item was "All students should have at least one skill certificate before s/he graduates." The second item was "Skill certifications will be important to my career." Spearman-Brown split-half reliability coefficient demonstrated adequate scale reliability, $r_{SB1} = .78$.

Behavioral intentions toward classes offering an IBC was measured using two, seven-point Likert-type scale items. The first item was "I would be more interested in a class if it included a skill certification." The second item was "I would be more likely to recommend a class to another student if it included a skill certification." Spearman-Brown split-half reliability coefficient demonstrated good scale reliability, $r_{SB1} = .90$.

Sample

The initial sample consisted of 213 respondents. Thirty-two respondents with excessive missing data or data errors were dropped from the sample. The final sample consisted of 182 respondents.

Respondent demographics generally reflected the population of students enrolled in marketing courses at the university. Respondents were primarily male (62%), between 20-22 years old (77%), upperclassman (61%), majoring in business (62%), and with a 2.76 or higher GPA (80%). Some respondents reported having worked full-time for more than six months (24%) and had completed a full-time internship (35%). Few respondents reported having international student status (2%) or first-generation student status (19%).

Approximately 25% of respondents had earned an IBC ($n = 46$). As expected given the sample, the most commonly reported certificates were related to marketing ($n = 23$) followed by analytics ($n = 6$), management ($n = 5$), information technology ($n = 5$), and finance ($n = 4$). Common company names from which certificates were earned include HubSpot, Microsoft, Google, and Bloomberg.

DATA ANALYSIS

Mean differences were analyzed using independent-sample *t* tests. Grouping variables were formed by dividing the sample based according to whether or not students had earned an IBC and various demographic characteristics. Dependent variables were composite and individual scale items about perceived benefits, perceived importance of earning an IBC, and behavioral intentions toward classes offering an IBC. Given the difference in the number of respondents per group, effect sizes were calculated using *Hedges' g* (Hedges, 1981).

Sample Mean Differences

Table 1 provides the results of the independent sample *t* tests for each of the composite and individual dependent variables by students who had earned an IBC ($n = 46$) and students who had not earned an IBC ($n = 126$). Generally, averages for both composite and individual scale items were high. Means for students who had earned an IBC ranged from 4.74 – 5.52 on a seven-point Likert-type scale; means for students who had not earned an IBC ranged from 4.82 – 5.90 on a seven-point Likert-type scale.

Means for perceived benefits for students who had earned an IBC were lower than for students who had not earned an IBC. Overall, students who had earned an IBC had lower average composite benefits scores ($M = 5.23$, $SD = 1.09$) than students who had not earned an IBC ($M = 5.64$, $SD = 0.81$), $t(170) = 2.67$, $g = .46$, $p < .01$. Lower means for the earned IBC group were also found for individual benefit scale items including boosting credentials ($g = .49$), helping to earn a higher salary ($g = .66$), providing increase confidence in abilities ($g = .41$), and identifying lifelong learning opportunities ($g = .43$), $p < .05$. Effective sizes (g) were moderate.

By comparison, students who had earned an IBC had higher mean importance scores ($M = 5.40$, $SD = 1.11$) than students who had not earned an IBC ($M = 4.96$, $SD = 1.16$), $t(170) = 2.31$, $g = .38$, $p < .05$. Specifically, average agreement with the statement "All students should have at least one certification before s/he graduates" was higher for students who had earned an IBC ($M = 5.48$, $SD = 1.24$) than students who had not earned an IBC ($M = 4.82$, $SD = 1.30$), $t(170) = 3.01$, $g = .51$, $p < .01$. Effective sizes (g) were moderate.

The results indicated no significant mean differences for the composite or individual behavioral intentions scores, $p > .05$. Means for both groups indicated more interest and more likely to recommend classes offering IBC as part of the course curriculum.

Subsample Mean Differences

The sample was also analyzed according to subsamples. Chi-square tests of independence were performed to examine the relationship between whether or not students had earned an IBC and demographic characteristics. There were no significant differences in whether or not students had earned an IBC by gender, major, or GPA, $p > .05$. However, as expected, respondents who had earned an IBC were more likely to be seniors (62%, $X^2 = 16.49$, $p < .01$) and more likely to have completed an internship (63%, $X^2 = 20.68$, $p < .01$).

Mean differences for the senior-only subsample ($n = 45$) and the internship-only subsample ($n = 60$) were analyzed using independent-sample t tests. Although the results paralleled that of the full sample, there were no statistically significant mean differences between seniors who had earned an IBC ($n = 28$) and seniors who not earned an IBC ($n = 17$) for any of the dependent variables, $p > .05$. Likewise, there were no statistically significant mean differences between students who had both completed an internship and earned an IBC ($n = 29$) and students who had only completed an internship ($n = 31$) for any of the dependent variables, $p > .05$.

No IBC exposure or experience

Approximately 70% of all respondents had not yet earned an IBC or been part of any course that offered the opportunity to earn an IBC ($n = 126$). On average, the vast majority of those students expressed at least moderate interest in earning an IBC (72%). Most students expressed interest in subject areas consistent with one or more of his/her self-reported college majors; certificate subject areas included accounting (8%), finance (15%), marketing / sales (52%), management (30%), information technology (18%), analytics (25%), and sports management (25%).

Students with no exposure or experience to IBCs were also presented with six descriptions (approximately 50 words each) of specific IBCs including *HubSpot Inbound Marketing*, *HubSpot Academy*, *Google Adwords*, *Google Analytics*, *Microsoft Office Specialist*, and *LinkedIn Learning Paths*. Descriptions included topics, average time to complete, content delivery method, monetary costs, and exam requirements. Eighty percent of respondents expressed at least moderate interest in one or more of the certificates. The two certificates with monetary costs generated the least amount of interest: *Microsoft Office Specialist* (29%) and *LinkedIn Learning Paths* (24%). The four certificates without monetary costs generated significantly more interest: *HubSpot Inbound Marketing* (48%), *HubSpot Academy* (59%), *Google AdWords* (48%), and *Google Analytics* (58%).

Chi-square tests of independence found no significant relationships between interest in a specific certificate as described by class rank (upperclassman / underclassman), internship experience, gender, major, or GPA for almost all certificates described, $p > .05$. The only exception was for *Google Analytics*; business majors ($n = 57$) were more likely to express at least some interest in earning a *Google Analytics* certificate than other majors ($n = 16$), $X^2 = 18.79$, $p < .05$.

DISCUSSION

Higher education has seen a rise in the use of alternative credentials such as digital badges, professional certificates, and competency assessments. According to Technavio Research (2017), the global alternative credentials market including non-credit training courses, non-credit certificate programs, and global digital badges is predicted to grow at a CAGR of almost 32% between 2017-2021. A recent special report by Inside Higher Ed argues that a growing number of US colleges are partnering with employers and noncollege education providers to offer alternative credential pathways as a response to critics who claim that traditional degree pathways are failing to meet postsecondary education and training needs (Pain, 2018). Although degree obtainment will likely remain important to employers, some argue that the use of alternative digital credentials may render traditional university transcripts irrelevant and obsolete (Matkin, 2018).

The results of this study suggest that student perceptions of the benefits of IBCs are mixed and complicated. Students who had earned an IBC reported lower perceived benefits related to credentials, salary, confidence, and lifelong learning as compared to students who had not earned an IBC. Yet, students who had earned an IBC more strongly believed that all students should earn at least one IBC before graduation. Both groups had strong interest in taking and recommending courses that included an IBC as part of the course curriculum.

The results indicate that students may not have clear understanding of the value of an IBC for post-graduation employment. Arguably, students are likely to develop stronger beliefs about the value (or lack thereof) of alternative credentials post-graduation. If employers emphasize the value of non-traditional credentials or if employers move toward skills-based hiring and promotions, then students will likely shift perceptions.

In practice, the results suggest that higher education institutions that intend to partner with credential providers may need to emphasize credential importance to students. This could be accomplished by naming positions or careers in which skill-based hiring is becoming more common. Alternatively, programs could emphasize credentials as a value-add to the traditional degree that provides a more holistic picture of student knowledge and skills.

LIMITATIONS AND FUTURE RESEARCH

This study provided insights into student perceptions of benefits from earning an IBC. However, as with any study, there are limitations and directions for future research. First, the sample for this study was traditional students enrolled in a residential undergraduate program. Future research should explore the perceptions of non-traditional, adult learners. Second, respondents reported earning (or not earning) any IBC. Future research could focus on the perceived benefits of a specific IBC, for a specific industry. For example, the value of one or more HubSpot certifications for careers in digital marketing could be investigated. Third, the study did not fully explore reasons that students earned an IBC. It is plausible that there could be differences of opinions about the perceived value of an IBC according to internal or external factors motivating behavior. Finally, efforts to identify respondents who had just interviewed for, and accepted, a job, could better reveal any potential value related to the role of an IBC in that specific job search. Surveys of their corresponding hiring employers might also add to the depth of the findings.

Table 1: Independent Sample *t* Tests by IBC Group

Composite Scores and Scale Items	Earned IBC $\overline{X}_1$	Earned IBC SD_1	No IBC $\overline{X}_2$	No IBC SD_2	Mean Diff. $\overline{X}_2 - \overline{X}_1$
Average benefits (A) score	5.23	1.09	5.64	0.81	-0.41**
A1: help with my job search.	5.24	1.45	5.66	0.93	-0.42
A2: boost my credentials for my chosen career.	5.39	1.36	5.90	0.84	-0.51*
A3: demonstrate my knowledge and skills.	5.37	1.24	5.73	1.01	-0.36
A4: help me get a higher salary.	4.74	1.27	5.48	1.05	-0.74**
A5: give me more confidence in my abilities.	5.30	1.30	5.75	1.06	-0.45*
A6: help me recognize lifelong learning opportunities.	4.89	1.34	5.40	1.11	-0.51*
A7: show that I have achieved something important.	5.30	1.17	5.56	1.14	-0.25
A8: acknowledge my commitment to learning.	5.50	1.24	5.73	1.03	-0.23
A9: signal my interest in my chosen field of study.	5.36	1.32	5.57	1.13	-0.22
Average importance (I) score	5.40	1.11	4.96	1.16	0.44*
I1: All students should have at least one certification before s/he graduates.	5.48	1.21	4.82	1.30	0.66**
I2: Certifications will be important in my career.	5.33	1.23	5.10	1.28	0.22
Average behavioral intentions (BI) score	5.51	1.24	5.57	1.21	-0.06
BI1: I would be more interested in a class if it included a certification.	5.52	1.33	5.61	1.27	-0.09
BI2: I would be more likely to recommend a class to another student if it included a certification.	5.50	1.24	5.54	1.27	-0.04

* $p < 0.05$; ** $p < 0.01$

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