

ARE STUDENTS READY FOR THEIR FUTURE ACCOUNTING CAREERS? INSIGHTS FROM OBSERVED PERCEPTION GAPS AMONG EMPLOYERS, INTERNS, AND ALUMNI

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ABSTRACT

Although prior studies examine student, academic, employer, and alumni's views regarding the effectiveness of accounting curriculums, no prior studies have cross-sectionally examined all views in one study over a length of time. We survey interns' perceptions of skill sets immediately after completion of the internship. We also survey participating employers immediately after the internship with respect to satisfaction with intern's skills. Lastly, we examine alumni perceptions of skill sets taught in the curriculum one-year after graduation. We examine all three perceptions (intern students, employer and alumni) using cross sectional analyses. We find an

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existing perception gap between students' self-assessment and employer assessment of skill sets at the intern stage. However, as the students mature into members of the work force, their attitudes align more closely with the perspectives of the employer. We document these results and suggest approaches to eliminate the perception gaps.

Key words: Perception Gap, Accounting Education, Alumni, Employer, Students, Skills, Curriculum

Data availability: Contact the second author for information about the data.

INTRODUCTION

Accounting departments periodically evaluate if students are learning essential skills to excel in the profession. Therefore, it is important to receive curricular feedback from all interested parties. Intern students can express satisfaction with the curriculum by ranking the adequacy of their preparedness for their internship. Employers evaluate the curriculum through advisory roles on department and university committees and by observing interns and full time hires. Alumni evaluate the curriculum by rating the adequacy of their skills after working for a period. The ideal time to gather information is immediately after completing an internship and shortly after students begin full-time employment. All feedback is useful to modify current programs.

Many accounting programs offer academic internships to accounting students because internships have proven to provide numerous benefits. First, students become more marketable to employers (Pasewark et al., 1989). Second, students gain an improved awareness of a company, industry or particular occupation. Manny Fernandez, KPMG's former national managing partner of university relations and recruiting stated, "The (internship) training gives us an opportunity to welcome the students and really familiarize them with the firm's leadership and culture..." Furthermore, internships are positively associated with future enhanced academic performance (Koehler, 1974; Siegel and Rigsby, 1988; English and Koeppen, 1993; Myring et al., 2005).

The purpose of our research is to analyze the perspectives of intern students, employers, and alumni regarding the adequacy of the undergraduate program to develop needed skills, such as technology skills, teamwork, and oral communication. To our knowledge, we are the first to collect data from alumni in conjunction with interns and employers. After comparing nine years (2000 – 2008) of surveys from the three groups, we find that all three groups, on average, are satisfied with the skills developed within the curriculum.¹ However, the degree of satisfaction varies in several areas. Overall, the students seem the most satisfied with the preparation of skills at the intern stage. However, they become slightly less satisfied with their preparedness once employed. On the contrary, employers indicate that there are needed areas of growth for interns (e.g. oral and written communication) which could be the result of the curriculum being designed to provide a foundation for students rather than prepare them for specific employment opportunities.

¹Our study examines one accounting program. Since many accounting programs offer internships and utilize advisory committees, we believe our results can provide some insights for curriculum development. However, these results may not be applicable to other programs.

Our study differs from prior research in a number of ways. First, we examine the perception of interns' skill sets as an 'on-site' benefit of internship programs to help them understand how well they are prepared for their future employment. By surveying intern students immediately following the internship, we can identify students' perception of preparation for the internship program while student memory is at its best. Second, we examine to what extent employers are satisfied with interns' skill sets, and extrapolate from the results their perception of the accounting curriculum. To some extent, the employers' views of the curriculum determine a student's future employment opportunities. While preparing students to be work-ready is not the only focus of education, it is critical to have a curriculum that incorporates foundational skills for that purpose as practice and accounting theory evolves. Thus, faculty members are encouraged to advise students regarding various employer-required skills. Third, we survey the perceptions of skill sets of alumni 1-year after graduation. Their perceptions not only enable us to compare intern student, employer, and alumni perceptions of learned skill sets but also, alumni, with one year of work experience, are in a good position to assess the adequacy of current accounting skills. Lastly, our study enables us to observe changing perceptions of skill sets and perception changes from intern to alumni. This information can better align the needs and expectations of students and employers and is useful for curricular improvement and professional training.

This paper proceeds as follows. In the next section, we review prior literature. Afterwards, we describe the research questions, data collection and empirical analysis. Next, we document the results. Finally, we provide a conclusion.

LITERATURE REVIEW

Early non-empirical internship research assesses the characteristics of U.S. university internship programs (Schmutte, 1986; Beard, 1998). Recent non-empirical studies provide extensive tools to manage and assess internship programs (Cummings and Tataman, 2007; Beard, 2007). Empirical internship research includes three areas: (1) the influence of internships on subsequent academic performance; (2) the relation between internship and subsequent professional skills and performance; and (3) perceptions of student readiness for employment

Internships and Subsequent Academic Performance

After examining 78 Pennsylvania State University student interns, Koehler (1974) reveals that interns with top evaluations increased their accounting grades and awareness of the importance of good communication skills. Knechel and Snowball (1987) relate internships and subsequent performance in specific topical areas and find only auditing coursework improved after an internship experience among 108 University of Florida students. English and Koeppen (1993) expand upon Knechel and Snowball (1987) by examining overall GPAs and accounting coursework of 57 students subsequent to an internship, and they find that interns outperform non-interns in both areas. Replicating prior studies (e.g., Knechel and Snowball, 1987), Myring et al. (2005) show similar results; interns perform better than non-interns in tax and audit coursework. However, while examining multinational vs. non-multinational firm effects, Myring et al. (2005) find no significant differences between interns and non-interns GPA performance. While not every study shows improvement after internships, the majority of research seems to indicate a positive trend.

Internship and Subsequent Professional Performance

Pasewark et al. (1989) examine internship experience and interview success for on- and off-campus interviews. Using a matched sample of students from 15 different universities, they find that interns have more off-campus interviews and job offers from “Big-Eight” firms, but find no differences in the other areas examined (e.g. on-campus interviews and non-“Big-Eight” offers). Next, Siegel and Rigsby (1988) examine the relation between student internships and subsequent professional performance by sampling 394 interns and 1,233 non-interns across three large public accounting firms which self report performance data and promotion data. They find individuals with internship experience obtain higher performance evaluations and receive promotions more rapidly at both levels (staff to senior and senior to manager) than individuals without internship experience.

Perceptions of Student Readiness for Employment

Several studies examine perceptions of various parties (students, alumni, employers, and educational institutions) with respect to student preparation for work (e.g., Schmutte, 1998; De Lange et al., 2006; Jones and Abraham, 2007; Green et al., 2008; Kavanagh and Drennan, 2008; and Ameen et al. 2010). In Ameen et. al. (2010), the authors document the perception gap between students taking principles of accounting and the accounting profession. They find that students in principles classes believe that little oral communication is required to succeed in the accounting profession.

Jones and Abraham (2007) examine perceptions of students, employers and academic institutions with respect to skills needed for employment. Findings indicate diverging viewpoints. Employers are interested in hiring students with strong technology-based skills and good interpersonal skills. On the other hand, academia emphasizes training students to have the ability to learn. In contrast, students think the most important factor influencing employers is previous work experience.

Kavanagh and Drennan (2008) find that perceptions and expectations of students and employers differ substantially with respect to valued skills and curricular emphasis. Also, both employers and students agree that universities are not adequately developing non-technical and professional skills. Furthermore, Zaid and Abraham (1994) find that employers note that new graduates have difficulty with communication and teamwork, while teaching institutions have a much higher perception of their effectiveness at preparing students for oral presentation, outline development, intelligent analysis, proper interpretation and precise conclusions. Finally, Jackling and De Lange (2009) find that alumni perceive they have inadequate generic skills, while employers rate the graduates as having the necessary technical and generic skills. However, employers display concerns regarding team skills, leadership potential, verbal communication and interpersonal skills.

Earlier studies generally find that internship programs are valuable for subsequent professional and academic performance. However, perception gaps exist between employers and students; employers and interns; employers and alumni; and employers, students, and institutions with respect to skills needed for successfully entering the accounting profession. Prior studies have not examined intern students, employers, and alumni in one study.

RESEARCH QUESTIONS

Employers expect accounting students to possess a diverse range of skills and attributes; a crucial blend of technical and generic skills that enable employees to unravel the diversity and the

dynamics of business challenges. Technical skills usually refer to subject-specific knowledge, such as competence in financial accounting and database use. Generic skills are usually associated with skills developed outside of the ‘technical curriculum,’ such as the ability to communicate and work in teams.

Our motivation to examine intern, employer, and alumni perceptions of skills is the belief that the outcomes of this investigation will mutually benefit everyone involved. From a student’s perspective, an academic internship provides students an opportunity to assess their basic skill sets. Such self-assessment helps students understand how well they are prepared for future employment. From the employer’s perspective, an internship program is a very effective approach to screen for future potential employees. In addition, intern-employer interaction helps the employer prepare (1) new hire orientations and short training programs, and (2) necessary continuing education plans. Additionally, the input from the employers on the experience with interns will help with curriculum development. Lastly, self-assessment will help new graduates (alumni) to identify needed training programs and/or evaluate the need to pursue an advanced degree. We examine the following questions:

- Q1: Do interns, alumni and employers perceive skill sets to be adequate?
- Q2: Is there a perception gap between intern students’ self-assessment and employers’ assessment of interns’ skill sets?
- Q3: Is there a perception gap between intern students’ self-assessment and alumni self-assessment of skill sets?

DATA COLLECTION AND EMPIRICAL ANALYSIS

In order to assess the curriculum with respect to students’ skill sets, we examine the perceptions of intern students, employers, and alumni at a Midwest university with approximately 25,000 students including 700 undergraduate and graduate accounting majors. We conduct three surveys (intern students, employer, and alumni) in two stages. The first stage of the survey collects information from both intern students² and employers immediately following the internship; interns are asked to rate how well they believe the accounting curriculum prepared them for the internship. At the same time, participating employers rate skills and competencies of interns while taking into consideration their inexperience. We document the self-assessment of the intern students for their skill sets and the employers’ assessment of the students’ skill sets at the intern stage.

The second stage of the survey includes collecting self-assessment data from the alumni at an interval of one year after students graduate.³ The alumni, after entering the workforce or joining a graduate program, are asked to rate their level of satisfaction with the accounting curriculum with respect to technical and generic skills learned in the undergraduate accounting curriculum. Each survey is described in detail below.

²Internships for undergraduate students occur either in the summer between the junior and senior year or in the spring of the senior year.

³The department surveys undergraduate alumni one year after graduation. The respondents may have had an internship.

Internship Assessment

During 2000-2008, we surveyed undergraduate accounting majors who participated in the internship program immediately after their internship experience. The purpose of the survey is to examine how effectively the accounting curriculum prepares students for the internship.

The initial survey included questions, such as ‘Effective oral communication skills’ and ‘Technical expertise and competence in accounting.’ During the data collection process, the authors substituted some of the above more broad-based questions with more detail-oriented questions. For example, “Technical expertise and competence in accounting” is used in the surveys prior to the spring 2002 semester and is substituted subsequently with ‘Technical expertise and competence - cost management’, ‘Technical expertise and competence - Accounting Information System’, ‘Technical expertise and competence - auditing’, ‘Technical expertise and competence - tax’, and ‘Technical expertise and competence - financial reporting’. For comparability, we use the average value of the above five more detail-oriented questions for each semester as the assigned value of the original more broad-based question.⁴ We follow a similar process for the other original questions and their substitutes.

Employer Evaluation

At the end of the intern program in each year 2000-2008, we ask the employers to complete a survey assessing interns’ skill sets according to their expectations of interns at this point in the student’s academic career.⁵ Questions include: ‘Accuracy, preciseness and attention to detail,’ ‘Speed, productivity and meets deadlines,’ ‘Analytical ability and judgment,’ and ‘Technology skills.’ Similar to the intern student surveys, some questions have been expanded. For example, “technology skills” is refined into three areas: ‘Ability of database skills,’ ‘Ability of online research skills,’ and ‘Ability of spreadsheet skills.’ Again, the average value of the above three areas is assigned as the value of the original question.⁶ We follow a similar process for the other original questions and their refinements.

Alumni Survey

Each year (2000-2008), the department requests our alumni to complete surveys one-year after they graduate. These surveys ask alumni to rate their level of satisfaction for skill sets learned throughout their college experience. The surveys have been slightly modified throughout our nine-year sample period. For example, the question of ‘understanding of ethical considerations for business decisions’ and professional business conduct’ substituted ‘handling the stress of professional life.’ As with the intern and firm surveys, the average value of the two substitute

⁴We conduct mean and median tests by year to examine the robustness of combining the questions. Results remain similar. Therefore, to simplify reporting, we report the test results from the combined data.

⁵Our internship program requires employers to utilize interns in a manner that a first year employee would be utilized (non menial work). We require interns to write a report regarding their internship experience and present that report to the faculty and other students. Employers are aware of our requirements and want to ensure they maintain a good reputation. The department has not removed any firms for noncompliance because on the two or three occasions where students were performing menial tasks, the students terminated the internship.

⁶We conduct mean and median tests by year to examine the robustness of combining the questions. Results remain similar. Therefore, to simplify reporting, we report the test results from the combined data.

TABLE 1
Questions Covered in Intern Assessment, Employer Evaluation and Alumni Survey

	Intern Assessment	Employer Evaluation	1-year-out Alumni Survey
Analytical Ability and Judgment	✓	✓	✓
Authoritative Database Use	✓		✓
Bibliographic Database Use	✓		✓
Computerized Accounting Systems	✓		✓
Effective Communication Skills	✓	✓	✓
Electronic Team Collaboration	✓		✓
Ethics	✓	✓	
Financial Database Use	✓		✓
Group Member	✓	✓	✓
Handle Interactions			✓
Internet Use	✓		✓
Manage Time			✓
Oral Communication Skills	✓	✓	✓
Professional Conduct	✓	✓	
Professional Orientation	✓	✓	✓
Relational Database Use	✓		✓
Spreadsheet Skills	✓	✓	✓
Structured Problem Solving	✓	✓	✓
Technical Expertise and Competence in Financial Reporting	✓	✓	✓
Technology Skills	✓	✓	✓
Unstructured Problem Solving	✓	✓	✓
Written Communication Skills	✓	✓	✓

✓ Indicates the question is included in the survey for that survey group. The questions are listed alphabetically. Due to the sample matching process used in the study, some of the questions will not be included in the future analysis.

questions is assigned as the value of the original.⁷ Some questions are dropped during the nine-year period reducing the sample size.

Matching Internship Assessment, Employer Evaluation, and Alumni Survey

The final matched Internship Assessment, Employer Evaluation, and Alumni Survey appear in Table 1. As shown, we match the questions in the three datasets and only examine overlapping

⁷We conduct mean and median tests by year to examine the robustness of combining the questions. Results remain similar. Therefore, to simplify reporting, we report the test results from the combined data.

questions. For example, all three data sets cover ‘Effective Communication Skills,’ while ‘Ethics’ is covered only in Employer Evaluation and Intern Assessment.

The Intern Assessment, Employer Evaluation, and Alumni Survey evolve over the nine-year sample period resulting in different sample sizes. The same question may be used in different periods by each of the three surveys. For example, the question ‘Effective Communication Skills’ is included in Intern Assessment from 2002 to 2008, in Employer Evaluation from 2006 to 2008, and in Alumni Survey from 2002 to 2006. Therefore, we examine the perception gap in ‘Effective Communication Skills’ from 2002 to 2006 for Intern Assessment vs. 1-year-out Alumni Survey and from 2006 to 2008 for Intern Assessment vs. Employer Evaluation.

Table 2 reports the number of observations in each survey. Matching reduced the sample greatly for individual variables of interest. For instance, although there were 428 total Employer Evaluation observations and 464 total Intern Assessment observations, for the specific variable ‘Analytical Ability and Judgment’ only 132 Employer Evaluation observations and 141 Intern Assessment observations matched.

We provide the descriptive statistics for each matched survey due to differing sample sizes in Tables 3 and 4. Both tables contain Intern Assessment, but for different matched samples: one with Employer Evaluation and one with 1-year-out Alumni. Different scales are used in the three

TABLE 2

The Sample Distribution

Year	Intern Assessment	Employer Evaluation	1-year-out Alumni Survey
2000	27	27	27
2001	34	35	21
2002	31	30	16
2003	49	46	23
2004	40	54	28
2005	69	64	17
2006	84	74	24
2007	74	57	0
2008	<u>56</u>	<u>41</u>	<u>0</u>
Total	464	428	156

Firms, interns, and alumni are identified by numbers in the data available to the authors. However, the internship program is fairly consistent having firm positions in the areas of audit and tax within the Big 4, middle market, and regional firms and a variety of positions within industry.

surveys over the nine-year sample period. Thus, we convert all surveys to one uniform five-point rating scale (to correspond to the Intern Assessment and Alumni Survey) with 1 representing poor preparedness/satisfaction, 2 representing fair preparedness/satisfaction, 3 representing good preparedness/satisfaction, 4 representing very good preparedness/satisfaction, and 5 representing excellent preparedness/satisfaction.

RESULTS

Table 3 reports the descriptive statistics of Intern Assessment and Employer Evaluation and the results of comparisons of these surveys over the matched sample period. We first examine one-sample mean tests to examine perceptions of intern students and employers in terms of preparedness/satisfaction of skill sets.⁸ Examining the perceptions of each group separately is important to determine whether each user group is satisfied with the curriculum and which areas could improve. The null hypothesis of the first one-sample mean test is that the mean of variables equals 3, which indicates that interns believe that they have good preparedness/satisfaction. The null hypothesis of the second one-sample mean test is that the mean of variables equals 4, which indicates that interns believe that they have very good preparedness/satisfaction.⁹ The 'Results' column summarizes the univariate results for each group. For example, the mean value of 'Ethics' for Intern Assessment is significantly greater (using the generally accepted 5% significance level) than both 3 and 4, which is equivalent to '>4' as reported in Table 3. As shown, the means of intern perceptions of their own skill sets at the intern stage are all significantly greater than 4, except for 'Analytical Ability and Judgment' and 'Technical Expertise & Competence in Financial Reporting.' Results imply that interns think their preparedness/satisfaction is very good except for the two aspects. However, the means of Analytical Ability and Judgment and Technical Expertise & Competence in Financial Reporting are significantly greater than 3, implying that although intern students do not think their preparedness/satisfaction regarding the two skill sets is very good, they do think their preparedness/satisfaction regarding these two skills is good.

In Table 3, we also report the results of the one-sample mean tests of Employer Evaluation over the sample period. Employers only evaluate student performance as very well prepared (significantly greater than 4) in one area: Ethics. The means of the following variables are less than 3 (good preparedness/satisfaction): 'Effective Communication skills,' 'Oral Communication Skills,' and 'Spreadsheet Skills.' In all other aspects, the means are statistically greater than 3 (good preparedness/satisfaction) but less than 4 (very good preparedness/satisfaction). Such results indicate that employers believe that student preparedness/satisfaction is adequate for most skills. However,

⁸The Wilcoxon signed rank test presents the one-sample median tests. By design, the Wilcoxon signed rank test makes inferences about whether the median of a population from which the sample is drawn is equal to a specific value. The results of the median tests for the one-sample and two-sample (z-value) tests are consistent with the results of the mean tests in all tests conducted in Tables 3 and 4.

⁹Our null hypothesis is that the mean of variables equals 3 (4), which indicates that interns believe that they have good (very good) preparedness/satisfaction. Based on the statistic results, we reject the null hypothesis because the means of variables are greater than 3 (4). Such results indicate that students think their preparedness/satisfaction is greater than '3' ('4'), that is greater than 'good' ('very good'). To explain the results in the most conservative way, we make the following conclusion: Mean>3: good preparedness/satisfaction, Mean>4: very good preparedness/satisfaction.

TABLE 3**Intern Assessment versus Employer Evaluation**

Variables	Intern Assessment (A)			Employer Evaluation (B)			(B) Minus (A)
	<u>N</u>	<u>Mean</u>	<u>Results</u> Mean = 3 or Mean = 4	<u>N</u>	<u>Mean</u>	<u>Results</u> Mean = 3 or Mean = 4	<u>t value</u>
Analytical Ability and Judgment	141	3.96	>3	132	4.03	>3	0.62
Effective Communication Skills	213	4.35	>4	138	2.45	<3	-32.23***
Ethics	191	4.77	>4	139	4.40	>4	-5.14***
Group Member	457	4.62	>4	416	3.88	>3	-11.74***
Oral Communication Skills	212	4.38	>4	138	2.53	<3	-27.70***
Professional Conduct	321	4.75	>4	289	3.62	>3	-15.63***
Professional Orientation	400	4.65	>4	357	3.81	>3	-12.93***
Spreadsheet Skills	214	4.31	>4	136	2.39	<3	-25.17***
Structured Problem Solving	460	4.29	>4	414	3.66	>3	-9.56***
Technical Expertise and Competence in Financial Reporting	462	3.92	>3	415	3.44	>3	-7.74***
Technology Skills	464	4.08	>4	412	3.54	>3	-8.56***
Unstructured Problem Solving	450	4.12	>4	386	3.41	>3	-10.56***
Written Communication Skills	399	4.29	>4	352	3.46	>3	-12.12***

Surveys are based upon a five-point Likert rating scale with 1 representing poor preparedness/satisfaction, 2 representing fair preparedness/satisfaction, 3 representing good preparedness/satisfaction, 4 representing very good preparedness/satisfaction, and 5 representing excellent preparedness/satisfaction. The 'Results' column summarizes the univariate results for each group. For example, the mean value of 'Ethics' for Intern Assessment is significantly greater (usually the generally accepted 5% significance level) than both 3 and 4. *, **, and *** indicates significance at the 10%, 5%, and 1% level, respectively.

TABLE 4**Intern Assessment versus 1-year-out Alumni Survey**

Variables	Intern Assessment (A)			1-year-out Alumni Survey (B)			(B) Minus (A)
	<u>N</u>	<u>Mean</u>	<u>Results</u>	<u>N</u>	<u>Mean</u>	<u>Results</u>	<u>t value</u>
			Mean = 3 or Mean = 4			Mean = 3 or Mean = 4	
Computerized Accounting Systems	204	3.77	>3	108	3.08	>2	-5.26***
Effective Communication Skills	271	4.29	>4	108	4.11	>3	-2.19**
Electronic Team Collaboration	187	4.24	>4	108	3.82	>3	-3.17***
Financial Database Use	61	3.74	>3	41	2.66	<3	-4.72***
Group Member	237	4.73	>4	92	4.64	>4	-1.23
Internet Use	249	4.56	>4	108	4.42	>4	-1.64
Oral Communication Skills	305	4.26	>4	129	4.04	>3	-2.56*
Professional Orientation	271	4.65	>4	108	4.63	>4	-0.16
Relational Database Use	192	3.80	>3	108	3.44	>3	-3.01***
Spreadsheet Skills	242	4.39	>4	92	4.33	>4	-0.55
Structured Problem Solving	332	4.25	>4	156	4.17	>4	-1.14
Technical Expertise and Competence in Financial Reporting	332	3.91	>3	156	4.19	>4	4.26***
Technology Skills	334	4.11	>4	156	3.81	>3	-4.26***
Unstructured Problem Solving	329	4.10	>4	156	3.88	>3	-2.82***
Written Communication Skills	271	4.29	>4	108	4.20	>4	-1.00

Surveys are based upon a five-point Likert rmg scale with 1 representing poor preparedness/satisfaction, 2 representing fair preparedness/satisfaction, 3 representing good paredness/satisfaction, 4 representing very good preparedness/satisfaction, and 5 representing excellend preparedness/satisfaction. The 'Results' column summarizes the univariate results for each group. For example, the mean value of 'Ethics' for Intern Assessment is significantly greater (usually the generally accepted 5% significance level) than both 3 and 4. *, **, and *** indicates signficance at the 10%, 5%, and 1% level, respectively.

employers believe that student skills, such as ‘Effective Communication skills,’ ‘Oral Communication Skills,’ and ‘Spreadsheet Skills’ are not adequate.

We next summarize the results of the two-sample mean tests in Table 3. Results indicate that the employer rating of skills is less than the intern students’ skill rating except for Analytical Ability and Judgment. There are several reasons that interns might rate their skill sets higher than employers do. First, interns are still in the middle of academic training with a minimum of one additional year to complete. Second, the results may be the consequence of the interns’ age and experience. Interns may be too inexperienced with respect to needed work skills to assess their own skills properly, relative to employers. Third, employers and interns may use different criteria to assess the required skill sets. Interns have only limited work experience. Employers may be evaluating interns based on the expectations of a future full time worker and may be much stricter with ratings because they want to identify the best future employees. The above reasoning may have influenced the outcomes on surveying employers and interns.

Table 4 reports the descriptive statistics of Intern Assessment and 1-year-out Alumni Survey, and it provides the results of comparisons of these surveys over the matched sample period. As discussed earlier, the descriptive statistics of the Intern Assessment is reported in both Table 3 and Table 4, because the Intern Assessment is matched with Employer Evaluation and Alumni Survey separately. That is, the sample period and the variables used in Intern Assessment may be different. For example, as shown in the Table 1, both Intern Assessment and 1-year-out Alumni Surveys use the variable ‘Analytical Ability and Judgment.’ However, this variable is included in the above surveys over different periods and cannot be matched into an overlapped period. As a result, we did not include the variable, ‘Analytical Ability and Judgment,’ in Table 4. Similarly, ‘Authoritative database use’ and ‘Bibliographic database use’ are not included in Table 4.

Again, we conducted one-sample mean tests to examine what interns and 1-year-out alumni believe. The null hypothesis of the first one-sample mean test is that the mean of variables equals 3, which indicates that interns believe that they have good preparedness/satisfaction. The null hypothesis of the second one-sample mean test is that the mean of variables equals 4, which indicates that interns believe that they have very good preparedness/satisfaction. As shown in Table 4, the results of the one-sample mean test are all significantly greater than the null hypothesis of the mean equal to 4 (very good preparedness/satisfaction), except for ‘Computerized Accounting Systems,’ ‘Financial Database Use,’ ‘Relational Database Use,’ and ‘Technical Expertise and Competence in Financial Reporting.’ It indicates that interns believe their preparedness/satisfaction in most skills is very good. In the aforementioned areas, interns believe their preparedness is good, but not very good.

In Table 4, we report the results of the one-sample mean tests for the 1-year-out Alumni Survey. The means of the following variables are statistically greater than 4 (very good preparedness/satisfaction): ‘Group Member,’ ‘Internet Use,’ ‘Professional Orientation,’ ‘Spreadsheet Skills,’ ‘Structured Problem Solving,’ ‘Technical Expertise & Competence,’ and ‘Written Communication Skills.’ The results indicate that alumni believe that the accounting program prepares them very well to master the above skills. Additionally, the means of ‘Effective Communication Skills,’ ‘Electronic Team Collaboration,’ ‘Oral Communication Skills,’ ‘Relational Database Use,’ ‘Technology Skills’ and ‘Unstructured Problem Solving’ are significantly greater than 3 (good preparedness/satisfaction) which indicates that the alumni believe that the accounting program prepares them well, but not very well, in these skills. The mean result for ‘Financial

Database Use' is less than three, implying that 1-year-out alumni believe that the accounting program prepares them fairly, but not well, in this skill.

Table 4 also presents the results of the two-sample mean tests for the Intern Assessment and 1-year-out Alumni Survey. Results indicate that the rating of skills perceived by 1-year-out alumni is statistically less than the rating of skills perceived by intern students in eight out of fifteen variables analyzed: 'Computerized Accounting Systems,' 'Effective Communication skills,' 'Electronic Team Collaboration,' 'Financial Database Use,' 'Oral Communication Skills,' 'Relational Database Use,' 'Technology Skills,' and 'Unstructured Problem Solving.' Several possible reasons could account for alumni lowering their rating of skills after completing the program. Alumni are more mature than interns are in terms of age, experience and technical knowledge. Alumni have completed the entire curriculum and are able to more comprehensively assess the curriculum relative to interns. At the same time, alumni, having had an additional year or more of education and/or a full year of work experience, realize how much more there was to learn after their internship experience. Therefore, they lower their assessment of their own skills after graduation. Another potential reason for the observed difference between the 1-year-out alumni and interns is that the surveyed alumni did not complete an internship resulting in a difference of opinion.¹⁰ There is no significant difference in six areas: 'Group Member,' 'Internet Use,' 'Professional Orientation,' 'Spreadsheet Skills,' 'Structured Problem Solving,' and 'Written Communication Skills.' Interestingly, the alumni have more confidence compared to the interns in their 'Technical Expertise & Competence in Financial Reporting.'

Overall, we find that interns seem the most satisfied with the preparation of skills at the intern stage. However, they become slightly less satisfied with their skills after working for a year. Employers indicate that there are needed areas of growth in the skills of the interns.

CONCLUSION

The results of our study help students in their preparation for future employment and employers in training preparation. Students are given an inside look at the expectations of employers through the outcomes of the employer evaluation. Our results help students to identify the skill sets needed to meet employer's employment criteria. Being aware of perception gaps could motivate intern students to improve their skills. Employers face the difficulty of transitioning inexperienced new employees into an effective and productive workforce. Understanding the mindset of the students will prove useful in this process by allowing firms to adjust training programs accordingly.

It is critical that accountancy departments and the students understand employers' expectations and needs. Through a collaborative effort, accountancy departments can improve the curriculum to meet the future work demand and enhance the work readiness of the students. Accountancy departments should encourage and invite recruiters and potential employers to hold workshops and presentations on campus to convey the expectations of general employment and required skill sets to students, and we should continue to invite professionals to serve on advisory boards to provide curricular suggestions. On campus, accountancy departments and the faculty should disseminate employer expectations to students. Employers and accountancy departments should set up an effective mentoring program to guide students.

¹⁰Approximately 40% of the undergraduate students complete an internship.

A formal alumni feedback system is helpful in alleviating the perception gap between alumni and employers and alumni and intern students. Alumni are in a unique position; they have a better understanding of employers' expectations and the perspective of their recent preparation. Accountancy departments can organize alumni events and arrange for alumni to mentor current students.

Faculty members are crucial in rectifying the perception gaps of students and employers. Faculty can ameliorate the illusions of grandeur of students and modify the narrow focus of businesses concerning education. Since faculty members are liaisons between employers and interns, they are in the best position to disseminate needed curriculum changes to interns long before curriculum changes become effective in the university catalogue. Faculty should make efforts to design the curriculum to reflect important skills, thereby, preparing the student to meet employers' expectations. With feedback from the graduates, faculty can implement more effective teaching strategies and have greater opportunities to improve future education.

Employers, alumni, students, academic departments, and faculty can benefit from this study from the following aspects: This study provides students a perspective on future work expectations. Understanding the applicability and limitations of their capabilities may enhance their motivation and retention of their education even if they do not have direct control over the curriculum development process. Students and alumni can assist with advancing the curriculum by providing timely feedback during the course through teaching evaluations or soon after graduation through surveys. With the input from students and alumni, academic departments and faculty can adjust the curriculum to better prepare students for their vocation.

Limitations of this study include examining only data from one institution, not examining graduate student perceptions, not controlling for type of firm (e.g. public vs. private) or specialty within a firm (e.g. audit or tax), and only comparing 1-year-out alumni perceptions to intern students and employers. Future research surveys could control for the above limiting factors. It is possible that graduate intern students or more experienced alumni ("five-year-out") may have perceptions more aligned with employers. We also realize that our internship program may be unique. However, a study examining the perceptions of all three groups (employer, intern students, and alumni) should have some implications for other programs. In terms of outcome of our surveys, we understand that employers may evaluate interns based on expectations of a future full-time worker, and they may be more stringent with ratings in order to identify the best future employees. This expectation could be far beyond the scope of an intern student. Thus, our results might be biased. Another limitation potentially skewing responses relates to the fact that some 1-year-out alumni may have had an internship while others may not have had an internship. Lastly, employers, intern students and alumni may have different conclusions about the successfulness of the accounting curriculum due to placement (public vs. industry) bias. Expectations of working requirements in public firms versus industry could be different. Furthermore, some differences may be related to a life-maturing perspective. Future studies can mitigate the above limitations.

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