# XBRL in the Accounting Curriculum

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**Abstract**

The purpose of this research was to determine whether, and to what extent, undergraduate accounting students were exposed to XBRL. We took a triangulate approach in our study, collecting data from multiple sources. We surveyed accounting department chairs, reviewed AIS textbooks and reviewed AIS course syllabi. We believe the current coverage of XBRL is not in proportion to its importance. Almost 60% of the department chairs surveyed said their institutions did not offer instruction of XBRL. They did not perceive the lack of instructional materials was an important barrier to including this topic in the curriculum. However, our study revealed that AIS textbook coverage of XBRL ranged from one chapter to moderate coverage to less than a full page of discussion. Faculty who assigned students textbooks with more exposure of XBRL were more likely to cover this topic. We believe there is a pressing need for new instructional materials that provide more coverage of XBRL.

# XBRL in the Accounting Curriculum

**INTRODUCTION**

eXtensible Business Reporting Language (XBRL) is a language used for the electronic communication of financial information. It is a standardized way to translate financial data into a format that computers can read and understand. Typically, financial information is treated as a block of text in a document or a webpage. However, XBRL provides identifying tags for individual items of data and these tags enable automated processing of financial information. Computers are able to recognize data formatted with XBRL tags and this allows for storage and exchange of information with other computers. This process enables computers to manipulate tagged data into a variety of formats for users. Sheridan and Drew (2012) said, “The technology’s promised benefits – greater company control of data definitions, exponentially improved efficiency for analysts and investors - are just beginning to be realized. Improvements in XBRL creation and validation software are making it possible to exact information that allow analysts, investors, and others to extract key information from public company data far faster than they could ever before” (124).

The standardization of XBRL supports its use in financial reporting throughout the world. Tittel (2011) said, “XBRL is undeniably a global standard for business reporting, and it’s here to stay” (p. 4). XBRL is used in a variety of internal and external business reporting purposes in the United States and is officially accepted by the European Parliament as well as many other governments. In 2009, the U.S. Securities and Exchange Commission (SEC) recognized the importance of this language when it mandated XBRL financial reporting of U.S. publically traded companies to be phased in during a three-year period. Today, all publically traded companies have to file with the SEC using XBRL.

Some U.S. businesses have outsourced the task of XBRL reporting to an external provider while others are deploying integrated in-house solutions. Magolis (2011) said, “Potential employers will be looking for new accounting graduates that have this skill set to replace external providers that format and submit their information in XBRL. Graduating accounting majors having the skills necessary to structure accounting information in XBRL will be at an advantage in seeking employment” (8). We believe a quality undergraduate accounting education includes the integration of XBRL into the curriculum.

The purpose of this research was to determine to what extent, if any, undergraduate accounting students were exposed to XBRL. We chose a three-prong approach to do our research. We surveyed accounting department chairs, reviewed Accounting Information Systems (AIS) textbooks and reviewed AIS course syllabi.

**ACCOUNTING DEPARTMENT CHAIR SURVEYS**

**The Survey Process**

We surveyed department chairs of the Association to Advance Collegiate Schools of Business (AACSB) accredited Accounting Departments to determine their experiences as well as their schools’ experiences with XBRL. Chairs were chosen because their responsibilities typically include improvement of instruction and curricular changes when necessary. Chairs provide collaborative leadership to accounting faculty. We chose AACSB accredited accounting departments because these departments had to demonstrate their high quality through a rigorous accreditation process. “AACSB provides internationally recognized, specialized accreditation for business and accounting programs at the bachelor's, master's, and doctoral level. AACSB Accreditation is known, worldwide, as the longest standing, most recognized form of specialized/professional accreditation an institution and its business programs can earn” (AACSB International, 2012, p.1).

The surveys were designed and analyzed using Qualtrics Online Survey Software. They were emailed to 100 randomly selected chairs and we received 30 responses. The survey questions and results are presented in Tables 1, 2, 3, 4 and 5.

**Results of the Survey**

The results of the responses to Questions 1, 2 and 3, relating to the educational institutions and department chairs, are presented in Table 1. Most respondents taught in public institutions with relatively large student bodies. Approximately 60% of the respondents were accounting chairs at public institutions and 64% taught in institutions whose student body was over 10,000 students. Most respondents were at least somewhat familiar with XBRL. Approximately 18% were very familiar, 75% somewhat familiar, and only 7% were unfamiliar with XBRL.

The results of the responses to Questions 4 and 5, relating to offering XBRL in the curriculum, are presented in Table 2. Under half of the respondents answered that they offered XBRL in the curriculum. Approximately, 43% of the respondents said that XBRL was in their curriculum, 54% said it was not, and 3% said they were unsure. If XBRL was part of the curriculum, 71% of the respondents said it was offered it in their AIS courses and 21% said it was offered it in their Advanced AIS courses. In their study, Debrecency and Farewell (2012) recognize there is a tendency to place topics relating to computerized technology into Accounting Information Systems courses. However, they believe this is not appropriate for XBRL because the learning outcomes relate to accounting and reporting issues. (p. 380)

Two cross tabulations were calculated. The cross tabulation of Question 4 to Questions 1 and 2 is presented in Table 3. It is more likely for public institutions to offer XBRL than private institutions; 53% of the public institutions versus only 27% of the private institutions offered XBRL instruction. It is slightly more likely that larger institutions offer XBRL than smaller sized institutions; 47% of the larger institutions versus 36% of the smaller institutions offered XBRL instruction. The cross tabulation of Question 4 to Question 3 is presented in Table 4. Approximately 80% of the chairs who were very familiar with XBRL offered instruction of this topic in their institutions’ curriculum. On the other hand, all chairs who were not familiar with XBRL worked at institutions that did not offer XBRL instruction.

The results of the responses to Questions 6, 7 and 8, relating to those educational institutions that do not have XBRL in the curriculum, are presented in Table 5. If XBRL was not in the curriculum, 41% of the respondents said that there were definite plans to integrate it in the future. Most planned to offer instruction in this topic within two to three years. Respondents said the greatest to barriers to including in the curriculum XBRL was instructor training and lack of interest. Approximately, 59% said one of barriers was instructor training and 53% said one of the barriers was lack of interest. Only, 24% of the chairs said that one of the barriers was a lack of instructional materials.

The lack of instructional materials was a barrier of particular interest to us. This was because it was ranked low in our department chair survey, but was in conflict with the Deshmukh (2006) study of AIS instructors. Deshmukh (2006) surveyed AIS instructors to determine whether XBRL should be covered in the curriculum. And, if answered affirmatively, the current need for instructional materials, such as XBRL tutorials, case materials and coverage in textbooks, was investigated. Deshmukh (2006) found that there was a general consensus among the responding faculty members that there was a severe lack of instructional materials on the XBRL topic. Further, Deshmukh (2006) stated that, “most textbooks mention XBRL in only a cursory fashion” (p. 86).

**TEXTBOOK REVIEWS**

**Design of the Review Process**

We reviewed AIS textbooks to obtain “first hand” information about the lack of instructional materials rather than surveying AIS faculty or accounting department chairs. We wanted to learn the extent of textbook coverage of XBRL, and also, to determine if textbook coverage has improved since Deshmukh’s study (2006). Recent editions of ten popular AIS textbooks were reviewed.

We designed our review process of the textbooks by asking the following questions:

1. *What was the total number of pages, and how many pages specifically were devoted to XBRL?* This provided us with general information about how the authors weighted XBRL relative to other topics in their textbooks.

2. *What was the total number of chapters, and how many chapters covered XBRL?* This question followed the first step, clearly identifying where XBRL appeared.

3. *Is XBRL a standalone chapter or a major topic in a chapter?* Question 2 presented a partial picture about XBRL coverage. Different authors had different approaches in discussing a topic. For example, there were some textbook authors that only briefly mentioned XBRL whereas others chose to discuss XBRL in a separate chapter, or put it as a major topic in a chapter. We examined these different types of arrangements.

4. *How many questions, problems and cases are related to XBRL?* This told us if students had a chance to apply XBRL theory to practice.

**Results of the Review**

We reviewed ten college textbooks used in AIS courses and summarized the results in Table 6. We found that all textbooks discussed XBRL. However, the amount of discussion varied greatly. The number of pages devoted to XBRL ranged from 1 to 18, and the percentage of pages ranged from approximately 0% to 4%. The number of chapters devoted solely to XBRL ranged from 0 to 1. XBLR was a standalone chapter in only one textbook. In 5 of the 10 textbooks, the authors put XBRL as a section topic in a chapter. Finally the number of problems ranged from 0 to 13 and the number of cases ranged from 0 to 1. XBLR was in the glossary and index of all ten textbooks. It appeared in the chapter summary and key terms at the end of the chapters of eight textbooks and in the learning objectives of six textbooks.

By far, the textbook with the most extensive coverage was by Kay and Ovlia (2012). This was the only textbook with a standalone XBRL chapter that was 18 pages long. The chapter includes 13 questions, 13 problems and 1 case relating to XBRL. Four textbooks had moderate coverage of XBRL, ranging from 5 to 10 pages. They include: Hall (2011), Turner and Weickgenannt (2009), Romney and Steinbart (2011), and Simkin and Norman (2012). The remaining five textbooks had very limited coverage of this topic.

All ten AIS textbooks mentioned XBRL. However, coverage varied from a standalone chapter to a topic in a chapter to less than a full page of discussion. Lack of adequate textbook coverage of XBRL can be a barrier to some faculty wanting to integrate XBRL into their courses. However, we realize that textbooks are tools. As a result, whether or not students were taught XBRL might be different from actual textbook coverage. Therefore, we reviewed syllabi from faculty who taught AIS courses to supplement these textbook reviews.

**COURSE SYLLABI**

**Design of the Review Process**

Course syllabi of college faculty who taught AIS were obtained and analyzed. We chose this course for our study because XBRL has primarily been taught in AIS courses based on our survey of department chairs as well as studies done by Deshmukh (2006) and Fedorowicz (2002). Deshmush (2006) surveyed AIS instructors to determine AIS faculty preparation and perceptions regarding XBRL. We believe that examining AIS course syllabi provides yet another perspective. This would determine which textbooks are being assigned and whether XBRL is being taught to AIS undergraduate students.

We requested undergraduate AIS syllabi from 100 randomly selected colleges that earned AACSB Accounting Accreditation. We received 31 syllabi. We examined the syllabi to determine which textbooks were used and whether XBRL was covered in the courses. The results of the textbooks used are listed in Table 7. Next, we determined if XBRL was mentioned in the syllabi as a course topic, course objective, and assigned as a chapter reading, specific homework problems and/ or supplementary articles. If XBRL appeared as a separate topic, objective, assigned chapter reading, assigned homework problems and assigned supplementary materials, we coded it as a “yes”. If not, we coded it as a “no”. (We recognize that XBRL still could be taught at the schools we coded as "no". Syllabi do not always provide enough detail. Future research could follow up on those syllabi results that were coded as “no”.) The results of the review are listed in Table 7.

**Results of the Review**

The Romney (2011) textbook accounted for almost a third of the syllabi we reviewed. Ten instructors used this textbook. Also, the instructors who used this textbook were more likely to incorporate XBRL as a topic and/or an assignment in their courses. Eight of the ten instructors who used Romney (2011) included XBRL assignments in their syllabi. Also, the one faculty member who used Kay and Ovlia (2012) incorporated XBRL as an objective, topic and assignment in the course.

It appears that AIS faculty who used textbooks with significant to moderate coverage of XBRL were more likely to assign this topic to their students. Faculty who used textbooks with very limited coverage of XBRL did not appear to expose their students to this topic.

Based upon the AIS syllabi review, only approximately 23% included XBRL as a topic, 36% assigned XBRL as a reading, and 16% assigned XBRL homework problems. On the other hand, 43% of the chairs we surveyed said their institution offered undergraduate instruction in XBRL. However, we don’t believe there is a conflict as XBRL instruction could have been offered in other courses besides AIS.

**LIMITATIONS**

We recognize limitations of this study. First, only accounting departments and the AIS courses were studied. Accounting students may have been exposed to XBRL in other undergraduate accounting courses such as intermediate accounting and international accounting as well as courses in other academic departments. Second, we assumed XBRL was not taught if it did not appear in the syllabi. As mentioned above, some syllabi may not provide enough detail to describe all topics that are covered in the courses.

**CONCLUSION**

In their article, Pfeffer and Fong (2002) said, "A large body of evidence suggests that the curriculum taught in business schools has only a small relationship to what is important for succeeding in business" (p. 84). Further, Debreceny and Farewell (2010) said, “The undergraduate curriculum is stubbornly resistant to change. Alumni that graduated from a given institution decades previously can often see exactly the same curriculum today down to and including course codes” (p. 86).

XBRL is important in business and is a relatively new topic that should be integrated into the accounting undergraduate curriculum. XBRL has been adopted in the U.S. and elsewhere. Magolis (2011) stated, “XBRL is likely to become the lingua franca of business-to-business transactions or simply how financial information is shared among trading partners” (p. 1). We believe the current coverage of XBRL is not in proportion to its importance.

We took a triangulate approach in our study, collecting data from multiple sources. We learned that almost 60% of the department chairs surveyed said their institutions do not offer instruction of XBRL. They did not perceive the lack of instructional materials was an important barrier to including this topic in the curriculum. However, our study revealed that the AIS textbook coverage of XBRL ranged from one chapter to moderate coverage to less than a full page of discussion. Faculty who assigned students textbooks with more exposure of XBRL were more likely to cover this topic. And, based upon the syllabi obtained, we determined that only approximately 35% of the AIS faculty included XBRL as a reading in their courses.

Accounting students need to understand XBRL and be exposed to technical topics such as the strategic uses of XBRL, the concept of markups and tags, preparing and validating XBRL reports, XBRL components and XBRL software in their AIS courses. Debreceny and Farewell (2010) said, “Technical aspects will impact students in the short term as they go to work for companies adopting XBRL and will continue to be issues as the profession moves to instance document assurance” (p. 397). It is logical to expect that topics such as these would be taught in AIS as this course typically deals with accounting information and technology. However, some AIS faculty may lag in integrating XBRL in their courses even though this language is used throughout the world and XBRL filings are now mandated in the U.S. by the SEC. This lag is, in part, related to a lack of instructional materials, including textbooks. We believe there is a pressing need for new instructional materials that provide more coverage of XBRL.

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**Table 1 – Department Chair Survey (Educational Institutions and Department Chairs)**

|  |  |
| --- | --- |
| **1. What type of educational institution do you represent?**  Public  Private  Total | 60.71%  39.29%  100.00% |
| **2. What is the size of your undergraduate**  **population?**  Under 10,000  Over 10,000  Total | 35.71%  64.29%  100.00% |
| **3. Please describe your familiarity with XBRL.**  I am very familiar with XBRL.  I am somewhat familiar with XBRL.  I am unfamiliar with XBRL  Total | 17.86%  75.00%  7.14%  100.00% |

**Table 2 – Department Chair Survey (XBRL in the Curriculum)**

|  |  |
| --- | --- |
| **4. Does your educational institution offer instruction in XBRL?**  Yes  No  Not Sure  Total | 42.86%  53.57%  3.47%  100.00% |
| **5. If yes, in which course(s)? Check all that apply.**  Accounting Information Systems  Advanced Accounting Information  Systems  Capstone Accounting Research  Cost Systems Design  IS Audit  Other  Not Sure | 71.43%  21.43%    7.14%  0.00%  7.14%  21.43%  14.29% |

**Table 3 – Department Chair Survey (Cross tabulation of Question 4 to Questions 1 and 2)**

***Does your educational institution offer instruction in XBRL?***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not Sure** | **Total** |
| **Type**  Public  Private | 52.94%  27.27% | 47.06%  63.64%% | 0.00%  9.09% | 100.00%  100.00% |
| **Size**  Under 10,000  Over 10,000 | 36.36%  47.06% | 54.55%  52.94% | 9.09%  0.00% | 100.00%  100.00% |

**Table 4 – Department Chair Survey (Cross tabulation of Question 4 to Questions 3)**

***Does your educational institution offer instruction in XBRL?***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not Sure** | **Total** |
| Very Familiar  Somewhat Familiar  Not Familiar | 80.00%  38.10%  0.00% | 20.00%  54.14%  100.00% | 0.00%  4.76%  0.00% | 100.00%  100.00%  100.00% |

**Table 5 – Department Chair Survey (XBRL Not in the Curriculum)**

|  |  |
| --- | --- |
| **6. If XBRL is not part of your curriculum, are there plans to incorporate it into the educational experience?**  Yes  No  Not sure  Total | 41.18%  47.06%  11.76%  100.00% |
| **7. If yes, when?**  Within one year  Within two or three years  More than three years  Not sure  Total | 22.22%  44.44%  0.00%  33.33%  100.00% |
| **8. If XBRL is not part of your curriculum, what are the barriers against including it? Check all that apply.**  Lack of instructor training  Lack of instructional resources  Lack of funding  Lack of interest  Other | 58.82%  23.53%  29.41%  52.94%  5.88% |

**Table 6 – Summary of Textbook Coverage of XBRL**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Textbook** | **Total # of pages** | **# of pages of XBRL** | **% of pages** | **Total # of chapters** | **Is XBRL a stand-alone chapter?** | **Is XLBR a major or/ sub topic?** | **# of questions on XLBR** | **# of cases on XLBR** |
| Bodar | 512 | 1 | 0.19% | 14 | No | No | 0 | 0 |
| Considine | 742 | 3 | 0.40% | 16 | No | Yes | 0 | 0 |
| Gelinas | 666 | 5 | 0.75% | 17 | No | Yes | 3 | 0 |
| Hall | 762 | 10 | 1.31% | 17 | No | Yes | 7 | 0 |
| Heagy | 484 | 4 | 0.83% | 15 | No | Yes | 2 | 0 |
| Ovlia | 417 | 18 | 3.72% | 14 | Yes, 1 | No | 26 | 1 |
| Romney | 742 | 6 | 0.81% | 22 | No | Yes | 7 | 1 |
| Simkin | 508 | 5 | 0.98% | 15 | No | Yes | 8 | 1 |
| Turner | 627 | 7 | 1.12% | 15 | No | Yes | 2 | 1 |
| Vaassen | 361 | 1 | 0.28% | 18 | No | No | n/a | n/a |

**Table 7 – Textbooks Assigned**

|  |  |  |
| --- | --- | --- |
| *Accounting Information Systems,* Romney, Steinbart 12th ed. | 10 | 32.26% |
| *Accounting Information Systems,* Hall 8th ed. | 5 | 16.12% |
| *Accounting Information Systems,* Kay, Ovlia 1st ed. | 1 | 3.23% |
| Other | 15 | 48.39% |
|  | 31 | 100.00% |

**Table 8 – Syllabi Content**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Content | Yes | Percentage | No | Percentage | Total |
| Topic | 7 | 22.58% | 24 | 77.42% | 31 |
| Course Objective | 5 | 16.13% | 26 | 83.87% | 31 |
| Chapter Reading | 11 | 35.48% | 20 | 64.52% | 31 |
| Homework Problems | 5 | 16.13% | 26 | 90.32% | 31 |
| Supplementary Materials | 3 | 9.68% | 28 | 90.32% | 31 |