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Khondkar Karim

Ashutosh Deshmukh

Jeffrey Romine

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Khondkar Karim
Associate Professor of Accounting
Rochester Institute of Technology
Rochester, NY 14623
kekbbu@rit.edu

Ashutosh Deshmukh
Associate Professor of Accounting
Pennsylvania State University-Erie
Erie, PA 16563
avd1@psu.edu

Jeffrey Romine
Professor of Accounting
Truman State University
Kirksville, MO 63501
jromine@truman.edu

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Extended Abstract

The Internet spins a vast web of information across the globe. Data and information flow freely – available to anyone for learning, understanding, and analysis. Organizations can cooperate across departments, regions, and countries. Sounds wonderful – what is the problem? The problem is as old as mainframe versus PC and Windows versus McIntosh. Data moves freely but is it standardized? Can it be understood by all systems, analyzed easily, translated across different languages, and human readable, among other things? The Internet permits movement of data across various networks; however, data are not standardized. Data streams have no universal meanings, specialized hardware and software is needed for data decoding. And if you do not have the required tools then you are out of luck. This problem is not only confined to the Internet. An estimated 20% of US GNP is spent on generating new information, and over 90% of this information is in documents *not* in databases. Businesses in the US produce approximately 100 billion documents per year. This information is stored in various formats across a range of systems. The disparate formats in which this information is stored causes severe problems in accessing, searching, and distributing this information.

The systems that manage information across diverse software and hardware platforms must address a few key requirements. First, these systems should be transparent to the users. The technical details should not be handled by the users. Second, users should be able to save the data and information in the desired format, for example, databases, text files, or proprietary formats. Third, the system must intelligently retrieve data and information. The system should be knowledgeable regarding the meaning of the information itself. Finally, such systems should be capable of providing the desired output – print, screen, web, or CD/DVD format.

XML (eXtensible Markup Language) promises to meet these requirements. Needless to say, XML will not solve all information management problems and certainly not in a short time. XML, is the first step, but has been hailed as a revolutionary advance in data transfer and information identification on the Internet. XML has applications in a wide range of areas, for example, sciences, mathematics, music, religion, and of course in business. XML and various XML-based languages are affecting different business areas such as e-procurement, e-commerce, EDI (Electronic Data Interchange), electronic payment systems, financial data transfer, and derivatives, to mention a few. XML influence is also felt across different industries; for example, there are XML applications in accounting, advertising, manufacturing, and a host of other industries.

XBRL (eXtensible Business Reporting Language), an application of XML, is an electronic format for simplifying the flow of financial statements, performance reports, accounting records, and other financial information between software programs. XBRL.Org explains XBRL as the accounting industry's method to take standard business reporting data and transform it into the digital world of bits and bytes. Financial data consists of financial statements, cost accounting data, and tax information, and, prior to XBRL, there was no standard way to transfer, analyze, and understand this data. XBRL is designed to standardize the financial data transfer and enable preparation and publication of that information in a desired format. XBRL is finding worldwide

acceptance and is backed by major businesses, accounting organizations and governmental agencies worldwide.

As XML and XBRL make inroads in accounting software, internal and external accounting reports, and affect the information transfer across the businesses, it is necessary to understand the mechanics of these languages. The depth of understanding the students need to achieve, of course depends on whether you want to be involved in standards development, preparer and programmer of reports using XML/XBRL, or simply a user. The question for the accounting educators is how much coverage should be given to XBRL? The accounting, especially accounting information systems, curriculum is already straining under the burden of integrating new technology and corporate governance changes. How will XBRL fit into the overall scheme of these things?

We circulated a survey to the accounting educators to investigate the current state of XBRL education and future plans regarding introduction of XBRL in the curriculum. The faculty members were chosen from the mailing list of the AIS Section of the American Accounting Association.

The survey investigated the following factors.

- Familiarity of the faculty and the students with XBRL
- The coverage of XBRL and the future plans for XBRL in the curriculum
- Opinions regarding the current coverage of XBRL in the curriculum
- Problems in introducing XBRL in the curriculum
- Importance of various XBRL topics and its current coverage
- The materials available to teach XBRL
- Demographic questions

This survey is attached at the end of this abstract. 130 surveys were sent o educators and 32 responded. This represents a response rate of approximately 25 percent. The analysis of data is continuing. The preliminary results are as follows:

- Familiarity of the faculty and the students with XBRL
    - Most of the respondents indicated that they are somewhat familiar or very knowledgeable with XBRL. This is not surprising since most of the faculty members have been exposed to XBRL due to educational efforts of XBRL.Org.
    - 60% of the faculty members indicated that the students were completely unfamiliar with XBRL.
- The coverage of XBRL and the future plans for XBRL in the curriculum
    - 40% of the faculty members do not cover XBRL, 60% provide coverage in the AIS course
    - The majority of the faculty members not covering indicated that XBRL would be introduced in the curriculum in two or less years.
- Opinions regarding the current coverage of XBRL in the curriculum (on 1 to 5 scale, 1 being complete disagreement and 5 being complete agreement)
    - The current accounting curriculum does not provide sufficient coverage of XBRL/XML, average = 3.71, std. dev. = 0.9
    - The current accounting curriculum should provide coverage for XBRL, average = 4.33 std. dev. = 0.84

- XML/XBRL experience should be integrated into the accounting textbooks, average = 4, std. dev. = 0.94
- Coverage of XML/XBRL is not necessary, average = 1.43, std. dev. = 0.68

- Problems in introducing XBRL in the curriculum
  - Lack of faculty interest, average = 3.77, std. dev. = 0.99
  - Lack of student interest, average = 2.45, std. dev. = 1.12
  - Lack of instructional materials, average = 3.61, std. dev. = 0.98
  - Lack of job opportunities, average = 2.12, std. dev. = 0.99
  - Lack of faculty preparedness, average = 4.33, std. dev. = 0.94

The explanations for the above results, analysis of the other questions, and the further analysis with more sophisticated statistical tests is being carried out. We shall be ready to present our detailed results by the conference time.

Introducing new technologies in the classroom has always been a challenge. Due to its similarity with programming languages, the adaptation of XBRL into accounting classrooms will provide challenges for academia. This paper will provide valuable insights into the efforts and opinions of the faculty members at the frontier of XBRL education.

XML/XBRL Questionnaire

This questionnaire is designed to determine faculty opinion and coverage of XML/XBRL in the accounting curriculum. Thank you for your cooperation.

1. Indicate your familiarity with XML or XBRL.
Select Option

2. Please describe the familiarity of your graduating bachelor students have with XML/XBRL.
Select Option

3. How do you integrate XML/XBRL education into your curriculum?
Select Option

4. If you do not currently offer XML/XBRL coverage, what are your institution's plans to offer coverage? Please skip if your institution already offers coverage.
Select Option

5. Please indicate the extent to which you would agree with the following statements by circling the appropriate responses where 1=strongly disagree and 5=strongly agree.

a. The current accounting curriculum does not provide sufficient coverage of XML/XBRL. Select

b. The accounting curriculum should provide XML/XBRL coverage. Select

c. XML/XBRL experience should be integrated into accounting textbooks and supplementary material. Select

d. Coverage of XML/XBRL is not necessary. Select

6. What is your opinion of the future prospects for XML/XBRL.
Select option

7. Please indicate the perceived obstacles in integrating XML/XBRL coverage into the accounting curriculum by circling the appropriate number (1=no obstacle; 5=very severe).

a. Lack of faculty interest. Select

b. Lack of student interest. Select

c. Lack of instructional materials including textbooks. Select

d. Lack of job opportunities. Select

e. Lack of faculty preparedness on this topic. Select

f. Others Please specify Select

8. **The following is a list of topics in XML/XBRL. Please rank the importance of each item. (1= not important, 5 = very important)**

a. Concept of Markups and Tags	Select
b. Elements, Attributes, and namespaces in XML	Select
c. Document Type Definitions	Select
d. XML Schema	Select
e. XSL (eXtensible Style Sheets)	Select
f. XBRL Components	Select
g. Preparing and Validating XBRL repots	Select
h. XML/XBRL Software	Select
i. Strategic Uses of XBRL	Select

9. **The following is a list of topics in XML/XBRL. Please rank the coverage of each item in your curriculum. (1= not covered, 5 = covered in depth)**

a. Concept of Markups and Tags	Select
b. Elements, Attributes, and namespaces in XML	Select
c. Document Type Definitions	Select
d. XML Schema	Select
e. XSL (eXtensible Style Sheets)	Select
f. XBRL Components	Select
g. Preparing and Validating XBRL repots	Select
h. XML/XBRL Software	Select
i. Strategic Uses of XBRL	Select

10. **Please indicate the importance of covering the following topics in an accounting information systems course or modules integrated into an auditing course by circling the appropriate number where 1=least important and 5=most important.**

a. XML/XBRL	Select
b. Advanced Excel techniques	Select
c. Database software	Select
d. General ledger software	Select
e. Flowcharting software	Select
f. ACL/IDEA Automation	Select
g. Working trial balance software	Select
h. SQL	Select
h. Data extraction and manipulation	Select
i. Other topic Please specify here	Select