Increasing engagement in IS among non-MIS majors in a business program: The impact of ERP across the curriculum.

Research-in-Progress

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Abstract

A course in information systems is required for most business degrees in the US. The 2010 ACM/AIS model curriculum includes a recommended “Foundations of Information Systems” course for all business majors (Topi 2010). While this course would be a starting point for students planning to major in Management Information Systems (MIS), it is often the only direct exposure to information systems (IS) concepts that students majoring in other business disciplines get. As such, they often find it hard to relate the relevance or importance of these concepts to their chosen field of study. Incorporating direct use of enterprise resource planning (ERP) software across the curriculum should provide these students with a better appreciation as to how information systems are likely to be relevant to their careers. This study seeks to evaluate whether incorporating ERP across a business curriculum increases student perceptions of the value of management information systems in their careers.

Keywords

MIS education, ERP, Student engagement

Introduction

While much of the research that looks at MIS curricula is focused on the needs of MIS majors, there is recognition that all business students today need to have some grounding in MIS concepts (Ives et al. 2002). When asked what they think the content of such a course might be, many business students reply that they think of it as an extension of the software skills course that they were likely to have taken early in their academic careers. They hear the term management information systems and think of spreadsheets, word processing, and maybe database management. They typically don’t understand that the key concepts in MIS are related to the development and use of technology to support various business functions, not office productivity software.

At our small, liberal arts college in the Northeast, we have a business department that graduates students with degrees in either business management or accounting. These students generally go to work within a several hundred mile radius of the college as business generalists, or accountants. Their education provides them with some grounding in a range of business functions, but they only get limited exposure as to how information systems are used to support those functions.

Employers have been found to desire a greater level of IS proficiency in students they hire as interns (Kesner 2008). One way to develop in students who would not have the opportunity to take more than one MIS course would be to embed IS tools and concepts in their other business courses. We hypothesize that if the use of industrial class software were included across their various business courses, it would increase their understanding of and appreciation for the value of information systems in general. In this study we hope to evaluate the impact to students and perception of employers resulting from the introduction of ERP across the business curriculum.
Foundation

A number of ERP vendors have provided capabilities for institutions of higher education to incorporate hands on experience with various ERP modules in their courses. Approaches to integrating those capabilities into business curricula have been implemented and detailed by a number of authors (Cannon et al. 2004; Fedorowicz et al. 2004; Johnson et al. 2004; Noguera and Watson 1999; Rosemann and Maurizio 2005; Shankararaman et al. 2012). Some work has looked at the impact of ERP on employer perceptions of graduates from these programs (Kesner 2008; Sager et al. 2006). However, most of this work focuses primarily on the use of ERP in courses for students majoring in MIS or planning to work in technology at some level, including those that have evaluated the impact on student attitudes and knowledge (Kesner 2008; Winkelmann and Leyh 2010).

There is surprisingly little written about the skills, knowledge, and attitudes regarding MIS acquired by students with majors other than MIS. The ACM/AIS curriculum guidelines (Topi 2010) do provide guidance as to topics with which such students should be familiar. However, there haven’t been significant studies to look at whether such students are acquiring these skills effectively or integrating that knowledge with their understanding of the underlying business concepts. This study will attempt to provide additional insight into the effectiveness of different approaches on student engagement and understanding.

Hypotheses

Among my business students, who are all in majors other than MIS, there appears to be a misconception as to what MIS entails. When I ask my students in the MIS course what they think MIS is about at the beginning of a semester I get responses like “something to do with computers,” “how to program,” or “Microsoft Office,” if they respond at all. There may be some responses that relate to networks, the internet/web, databases, or other technology, but rarely is there any response that indicates that MIS is something that is integral to their ability to be effective in the business world.

Dealing with those misconceptions is one reason for requiring an introduction to MIS course in their degree programs. However, even after taking that course, while they may have a better understanding of the major topics in MIS, we hypothesize that they will still not fully appreciate the value of information systems to specific business functions. One way to increase this appreciation would be for them to be exposed to real world enterprise systems as part of the curriculum in each of their major business areas. In this study we will therefore be testing the following hypotheses:

H1: Integrating the use of ERP into non-MIS courses will increase student appreciation of the value of information systems to their careers.

H2: Integrating the use of ERP into non-MIS courses will increase student understanding of how such systems would be used in business.

H3: Integrating the use of ERP into non-MIS courses will increase student understanding of the nature of ERP systems.

H4: Integrating the use of ERP into non-MIS courses will help students become more comfortable with their ability to make MIS related decisions in their careers.

Approach

In order to provide access to ERP for our students, we plan to become members in the SAP University Alliance program. We have chosen SAP because they are the largest ERP vendor, they have strong support for faculty as part of their program, and technology resources are readily available from them and their academic partners (Corbitt and Matthews 2009; Leyh 2012). We have gained commitment from the business faculty to incorporate SAP exercises into coursework in classes in Accounting, Finance, Human Resources, and MIS. The use of SAP is scheduled to be introduced in courses in the Fall of 2014.

The first step in this research is to establish a baseline of perceptions and proficiency among our students before the introduction of SAP. We are in the process of collecting data using a survey that asks students at various stages in their program about their understanding of the definition of MIS and the relevance of
MIS to their various business disciplines and their careers. We have just begun to collect this data and we plan to collect data from students before and after they have taken the required MIS course. The questions to be asked of students are included in Appendix A.

**Analysis**

We plan to compare the means of responses from students who have and have not yet completed a course in MIS. We will then introduce SAP into the curriculum and see if there is any change in the responses of students after having taken a course with SAP content for those students who have and have not yet taken the required MIS course. We should have the results of the students before SAP has been introduced before the 2014 AMCIS conference.

**Discussion**

We are hopeful that this study will help understand the attitudes and knowledge of students regarding MIS for students who are not majoring in MIS. We then expect to be able to evaluate whether incorporating SAP/ERP into non-MIS courses in a business curriculum will have a direct impact on those attitudes. We are looking to use the round table at AMCIS to allow us to strengthen the second phase of this study to provide information that can make a broader contribution to those with similar programs.

**Conclusion**

While it is preliminary to draw any conclusions, we are looking forward to a lively discussion regarding how to make this research as valuable as possible. It is important that all business students, especially those who are not majoring in MIS, have a good understanding and appreciation of the value of information systems in their careers. We hope that this research will help identify whether incorporating live ERP exercises can help achieve that goal.
## Appendix A

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you taken a course in MIS?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is your current class standing?</td>
<td>Freshman</td>
<td>Sophomore</td>
</tr>
<tr>
<td>What is your major?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I have a good understanding of what management information systems are.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>I understand how information systems will be important to my career.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>I expect to use information systems in my day to day work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>I understand enterprise resource planning systems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Knowledge of management information systems is important for all business majors.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Information systems are only important for computer programmers to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>My courses have helped me understand how computers are used in business.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>I would be comfortable making decisions about what information systems to acquire.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
REFERENCES


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