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# FACULTY INFORMAL SELF-LEARNING AND WAYS TO ENGAGE STUDENTS

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**ABSTRACT**

Many junior Information Systems (IS) faculty members are facing the challenge of how to find time to learn and bring in fresh subject content to classroom teaching beyond textbooks, given the tight constraint of time consumed by multiple teaching preparations, research activities, and various service commitments. We propose the idea of faculty informal self-learning and then sharing the newly acquired knowledge with students in classroom discussions. We describe the initiative of collaborating with our college IT services department for this purpose. More specifically, we invite college IT services staff to give students a campus network tour and a talk on network administration in our telecommunication class, and speak on cloud service and disaster recovery in our MIS club meetings. We also intentionally engage in informal conversations with the IT services staff to learn new practical knowledge with the aim to share with students and thus motivate their desire to learn.

**Keywords**

Informal self-learning, engage students, collaboration with college IT department, campus network tour, MIS club meeting

**INTRODUCTION**

How to engage college students in learning beyond traditional lecture method is a common challenge that faculty members face today (Bromberg, Techatassanasoontorn, & Andrade, 2013). What can we do to improve and engage students' learning of information systems (IS)? In this paper, we propose that we can enhance IS classroom teaching with external materials beyond the textbook and relate teaching to the real-world. It is important to teach students not only from a technical perspective but also from managerial and business perspectives (Kroenke, 2014). Moreover, through teaching we serve as role models and motivate students to seek careers in business. Textbooks provided by publishers are the primary source and material used in conventional teaching. A practical question is from where do the fresh ideas and content beyond the textbook come? We believe that continuous learning and improvement are critical for building and strengthening subject knowledge. Informal self-learning helps faculty members gain information in the field and keep them updated. The knowledge obtained through informal self-learning can be used in classroom discussions that enrich students' learning. At the same time, our devotion to continuous learning demonstrates the importance of a positive work ethic and passion for the profession. This action will inspire students to pursue their professional careers.

In this study we use a telecommunications management class as an example. Our telecommunications management course roughly corresponds to the IS 2010 core content (IT Infrastructure, focusing on computer data communication networks, services, solutions, and capabilities in an organization context) (Topi, et al., 2010). Over the years we have experimented with three telecommunications management textbooks (FitzGerald & Dennis, 2007; Panko & Panko, 2013; White, 2012). Different textbooks provide complementary perspectives. The general principles and methods illustrated here are also applicable to other IS courses. In this paper we report our new teaching approach with which we hope to motivate students to actively engage in learning. We elaborate on several concrete practices that we implemented to support learning and teaching improvement. We also suggest doable actions based on the qualitative results of the study.

We organize the remaining sections of this paper in the following order. First, we introduce the motivation and background of this study. Next, we describe the campus network tour and guest speaker talk. We then report on the MIS club meetings. Next, we present the insights we gained from the informal discussions with the college IT services staff. Finally, we discuss and conclude the paper with recommendations. We also point out future research directions.

**MOTIVATION AND BACKGROUND**

How to motivate students in classroom learning is a continuous challenge. Textbook publishers provide very valuable materials for teaching, including textbooks, PowerPoint presentations, and instructor materials. However, even adopting the latest textbook may not contain the most recent and relevant information. The lead time, from writing the textbook, reviewing content, publishing and printing, and finally delivering to the students for classroom use at the start of a semester is long, often up to a year. Therefore, some issues and cases described in a textbook may seem outdated to students, especially for the

discipline of IS. A natural question is what can IS faculty do to mitigate the limitations of standard textbooks. We approach the issue from two perspectives. The first aspect is the subject matter content. In other words, how do IS faculty members obtain new IS knowledge beyond the textbook? The second aspect is the form or method to enhance students' interest and engage students in learning. We propose faculty informal self-learning as a practical approach to address the content issue. Closely related to the ways of informal self-learning, we report ways to share the newly learned knowledge with students.

The extent and ways that professors engage in informal self-directed learning are rarely studied (Neumann, 2005). In general, adult learners – professors in this context – spend effort in learning because they anticipate that they can directly employ the newly acquired knowledge to achieve certain goals (Knowles, Holton, & Swanson, 2005). Research on self-directed learning concentrates on two key issues: first, what content one wants to learn; second, how to do so (Candy, 1991). This research intends to illustrate how we incorporate informal self-learning and share the new knowledge with students to enhance their interest in learning.

As Professor Gary Dickson pointed out, only during the time of being an IS doctoral student does one have the luxury to read very broadly (Vician, 2007). After completing a doctoral degree an individual enters a new phrase in his/her academic career. As an assistant professor, one is likely to be assigned to teach multiple new subjects and be expected to produce numerous research publications. Moreover, there are additional responsibilities of advising students and various committee tasks that consume a considerable amount of time. Faculty members usually have to specialize in one particular area with in-depth knowledge for research purposes. Therefore, it is a great challenge for a faculty member to stay updated on all the new technology developments and industry trends (Vician, 2007). Conceptually, we can frame this as an optimization problem. One of the goals is to maximize students' learning by increasing their interest. The constraints include the financial budget for formal faculty professional development and faculty's disposable time after those consumed by conventional textbook-based teaching preparations, specialized research activities, and various service commitments.

Several general recommendations regarding helping faculty members stay on top of broad new technology developments are in the literature (Vician, 2007). First, by participating in the journal/conference paper reviewing process, one can grasp a sense of what the new trends are. Second, maintaining social ties with peers from one's doctoral program and developing new social ties within the IS faculty community serve as ways to link and access a diverse knowledge base of the IS discipline. By becoming part of a large academic social network one can obtain currency in this fast moving field, even though as an individual we do not have time to read broadly. Third, in a more general sense, one should establish continuous learning as a personal goal and take advantage of every event and person encountered for learning (Vician, 2007).

The information silo in an organization poses as one of the most critical IS problems which prevents information flow and sharing for the benefit of the whole organization (Kroenke, 2014). People with different professional backgrounds tend to over-emphasize their individual fields and form a sub-culture of a closed clique (Kendall & Kendall, 2014). For example, the marketing department may under-appreciate the manufacturing department's work. In the literature we do not find a lot of cases discussing the collaboration between IS faculty members and the college IT services department for teaching, probably due to egocentric thinking and unfamiliarity with each other's work. In one case of developing an undergraduate information security program, the data center manager of a university was invited by IS faculty to give students a virtual tour of the campus facilities (Woodward, Imboden, & Martin, 2013). The authors reported that the IS faculty solicited the campus IT services group as well as local and regional technology businesses to provide speakers to present to a security focused Registered Student Organization (RSO) (Woodward, Imboden, & Martin, 2013). However, to the best of our knowledge we have not found a case discussing IS faculty bringing college IT services staff to a class to present their professional IT work and giving students a real physical tour of the campus network.

## CAMPUS NETWORK TOUR AND GUEST SPEAKER TALK

In this section, we describe one concrete example of informal self-learning and engaging student learning. More specifically, we report how we explore one opportunity – collaborating with the college IT services department to give students a campus network tour and come to our class to give a talk on network administration, management, and security.

### Plan and Arrangement of the Tour and Speaker Talk

At the beginning of the fall 2014 semester, we emailed our college IT services department manager to request a campus network tour and have an IT staff person to give a talk to our telecommunications management class. For the convenience of interested IS faculty who might want to replicate this activity, we include our email as follows:

"*Request for a Campus Network Tour and a Talk by Network Administrator*

*Dear College IT Manager Mr. XXX,*

*This is XXX, an instructor for the telecommunications management course this semester. I wonder if you could help to arrange for your network administrator or other staff to give my students a campus network tour and come to our class to talk about the daily work and responsibilities of the network administrator's job. The informal presentation of his day-to-day work would be beneficial for my students to learn about the skills and knowledge required for a network administrator in the real-world. Moreover, I would hope that the network administrator could guide my class for a tour of the network closet and central network and servers rooms, which host the routers, switches, and servers. Seeing the physical switches, routers, cables and other network equipment and servers would help students get a real sense of what a network and system administrator deals with in the real-world. I am suggesting to tentatively scheduling the talk and tour on Thursday 10/16/2014, because by that time the students will have enough theoretical knowledge to understand and appreciate the event. My class is between 6:10 p.m. and 7:25 p.m. in building XXX room XXX. I understand that your staff has busy schedules and my class time is after normal working hours (8:00 AM – 5:00 PM). However, based on my past experience, students would really love to have this learning opportunity. Please let me know anything I need to do to proceed with this potential event.*

*Thank you!"*

After sending the email, we also printed out a hard copy of the email and took it to our college IT services manager to remind him of the request. The IT services manager agreed to support this activity. A week before the targeted date of 10/16/2014, we reminded the IT manager again via email. Because it is very likely that a few students may be late for our class due to their work schedule we arranged the speaker talk as the first activity in our class meeting, followed by a campus network tour, so all students can attend the tour, even if a few students may be late and miss the beginning part of the speaker talk. To motivate students to participate in this activity we designed a specific assignment weighted 2% of the total grade and we announced that we would take attendance for that class meeting. Again for faculty interested in duplicating this activity, we include our assignment as follows:

"*Campus Network Tour and Guest Speaker Talk Report due 10/23/2014*

*You need to write a very brief report on the campus network tour and talk given by College IT Staff Mr. XXX on 10/16/2014, Thursday. You may write what new things you learned from the event, what you thought was interesting, and how this event related to what you learn from our class. We hope this will be of help to you. Your report should be at least 200 words long. Please submit your report in a Word document and type your name, course title, and date in the header. In the body of the report, please type the title: 'Report on Campus Network Tour and Talk'. You should then upload it to this Desire2Learn Dropbox Folder. I do not accept hard printout or email attachment. I only accept Desire2Learn submission.*"

We gave the students one week between the event and the assignment due date so that students are motivated to write the report while their memories are still fresh. At the end of the activity we thanked the IT staff in person. On the second day after the event we emailed both the IT services staff and IT manager to express our gratitude for their support of this activity.

**Students' Feedback of the Tour and Speaker Talk**

Among the 16 submitted student reports, 13 were valid reports addressing the questions we raised in the assignment for the activity held on 10/16/2014. One of the 13 reports was written by a student who confessed that he did not physically attend the event. However, the student still managed to appreciate the talk and tour through a recording by a third-party. Twelve out of thirteen reports expressed that the event was interesting and enjoyable. For example, "*I found the speaker as well as the tour very interesting.*" One report did not mention that the event was interesting. However, it described the activity as informative as did several other reports. For example, "*The network tour of the campus with Mr. XXX was enjoyable and informative.*" Most students wrote that it was their first time to see physical servers, routers, and switches in person. For example, "*During the tour I saw a server room in person for the first time.*" Many students described their unique impression of the cold temperature because of additional A/C and noises generated by the A/C in the server room. For example, "*This wasn't really that different from seeing them in photographs however I did get a good idea of the noise in the room and how serious the air conditioning has to be to keep the equipment cool.*" Several students mentioned that they learned the history of the network for our college. For example, "*We learned that the network for XXX College has gone through several variations. It has gone from a closed network, to a network that is accessible to the Internet, to a vast wireless network with cloud-based setups.*" Overall, it seems that the physical tour achieved the initial purpose as indicated in several reports. Other example comments include: "*Being able to see the server room first hand helps to apply the knowledge gained in the telecommunications class to the real world and gives me as well as other members of the class a better understanding as to what is going on with communications in regards to computers.*" "*I feel that this speaker and tour are very beneficial to all of the students in this telecommunications class.*" "*The topic was interesting because we were actually seeing what we talk about in class and not just sitting in a classroom talking about it.*" Some reports touched upon more advanced topics such as

cloud computing and assigning different priority levels to network applications to handle momentary traffic spikes. Student comments included: "*It was also interesting to see the old email server in disuse due to the email being moved over to the cloud and perhaps this is the way of things in the future.*" "*I like how he demonstrated how the network speeds can be shifted to certain groups of people to allow for more vital functionality.*" This event not only reinforced students' subject matter learning, but also included useful career information such as the network administrator's daily work and responsibilities. For example, "*Mr. XXX's overview of his responsibilities at his job were also interesting because it's nice to see what may be expected of me in a similar job in the future, as well as what to expect.*" In summary, students' feedback demonstrated that this activity offered students an interesting and rich learning experience. It also helped students to identify a professional growth path.

**MIS CLUB MEETINGS**

We created a Registered Student Organization (RSO) – MIS club to serve as a venue for extra curriculum activities for MIS major students, although the MIS club activities are also open to all business students. As MIS club academic advisors, we planned, organized and arranged MIS club events. The main goal of the MIS club is to provide a platform to host speakers presenting topics not covered in regular MIS class meetings. MIS club meetings and speaker talks are informal self-learning opportunities for faculty members and students. In this case we emphasized the special role that the college IT services department plays in facilitating informal self-learning and engaging students in learning. Every semester we invited an IT services staff as a guest speaker to talk to one of our MIS club meetings. One of the recent meetings featuring the college IT services department was held on 9/16/2014. The main theme that we asked the college IT services staff to talk about was disaster recovery and cloud service. For the purpose of interested IS faculty members to replicate this activity we include our MIS club meeting event flyer as follows:

"*MIS Club Meeting at Building XXX Room XXX on Tuesday, September 16th, 2014 3:30 pm*

*All Students Are Welcome!!*

*Our college IT manager Mr. XXX will speak on Cloud Services projects currently being undertaken in our college. He will talk about both the technical and the managerial aspects of Cloud Services and what kinds of skills are required for working with Cloud Services. He will also discuss the advantages of Cloud Services such as cost savings, quality of service, impact on backup, disaster recovery plans, and security.*

*MIS Club Objectives:*

- *Providing a professional environment for students interested in business, MIS and IT*
- *Network with students, faculty, and industry professionals*
- *Obtain academic and career advice*
- *Share students' academic and technical expertise*"

Students attending this MIS club meeting gave positive feedback for the event in general.

"*I thought that the subject of disaster recovery and all you would have to do if a disaster happened was an interesting subject. It sounded like it would get extremely expensive if something bad ever happened.*"

"*The MIS Club meeting was interesting. It is hard to be able to understand everything that is involved with the computer system. I got a clearer image of how important it is to have a plan of what to do in case there are computer shutdowns due to inclement weather or for system failures. It is important to know that to be able to maintain the computer system is not a cheap deal and we all should take better care of equipment.*"

"*I enjoyed Mr. XXX. He seemed knowledgeable about Cloud Services. We shared some open discussion about the different cloud services that are available and he even allowed for feedback on our opinion of the services that are available.*"

**KNOWLEDGE LEARNED FROM INFORMAL DISCUSSIONS WITH COLLEGE IT STAFF**

In addition to officially inviting college IT services department staff as speakers to our MIS classes and MIS club, we also engaged in informal discussions with them from time to time. Through these informal occasions we purposely raised questions related to new technology trends, college IT management practice and strategy, as well as career advice for students. Since many students could not attend MIS club meetings due to conflict of work schedule and the informal discussions were between faculty members and college IT services staff members, most students did not have access to this valuable information. Therefore, after we obtained the practical knowledge through these informal means we shared it with all students as additional information in our classes. Next, we report the summary of some knowledge we learned from the informal discussions with the college IT services staff.

*Technical Perspective*

Our college's network administrator deals mainly with LANs which are in constant flux. The network administrator also deals somewhat with WANs. The network administrator said that Cisco network equipment is preferred because of their good quality even though Cisco products are expensive.

For a classroom floor switch closet, the network administrator makes changing components as simple as possible. The network administrator can unplug and change a switch in two minutes. It takes more time to physically unplug cables than re-program the switch.

Our college IT department uses a VLAN to segment and manage the network. Other than the VLAN, other parts of the LAN are straightforward. Sometimes the network administrator deals with third-party equipment, such as a printer/copy machine when it cannot scan to email. The network administrator has to diagnose the problem. The challenge is that the network administrator has limited rights to access the third-party equipment, being unable to login remotely via a web interface. Another important part of the network administrator's job is to deal with people.

*Managerial and Business Perspective*

It is important for an IT employee to understand the bigger picture of an organization and how one's work fits into the overall organizational strategic goal. An important capability of an IT person is to be able to explain the benefits of and persuade the management to accept the implementation of a technology project. The potential reasons can be reducing cost, providing better services, saving time by doing things faster, or being more efficient. Given the tight state budget, college IT employees need to justify everything in their proposals.

As for requesting and allocating a newer and better desktop PC for a college employee, the department head/dean makes the final decision. The dean informs the college IT services department which faculty has high priority to obtain a better PC. The IT services department allocates PCs based on the priority request and what PCs it happens to have on hand. The IT services group does not want to interfere with the assignment of PCs. Each dean makes this business decision.

All institutions across the university system of our state standardize on one higher education ERP. One advantage of standardizing and using the same ERP software system-wide is that IT people can help each other across institutions. They can support each other in the community of the university system by sharing notes and figuring out things together as peers. The university system of our state also has an annual conference for IT services employees. Our college's IT staff attends this annual conference. IT people can network and learn new ideas and get support when needed. After purchasing and installing the ERP, the institutions can use a number of built-in business functions and code. However, institutions still need further customizations. IT people of the University System share code of the ERP system with each other. Some useful functions may be already be coded in one institution and can be borrowed by another institution.

Our college used to have its own three physical standalone Oracle database servers (database, form, and web). The university system of our state plans to centralize the ERP of all the institutions by consolidating the physical servers and databases. The central IT services group of the university system of our state pushes for a universal solution using a private cloud to host the ERP systems of all institutions. However, the idea met considerable resistance from colleges and universities. The universal solution might be a good fit for large universities, but for small colleges it might be overkill. Colleges and universities have intimate local knowledge of what they really need and want from the ERP. The central IT office of the university system of our state does not have the local knowledge or resources to develop, maintain, and support 36 customized versions of ERP for 36 institutions. Therefore, a compromised solution emerged. The central IT office maintains the data center infrastructure in the private cloud, focusing on the hardware, OS, standardized ERP and databases. Moreover, the central IT office also takes care of all the ERP systems' backup and disaster recovery. The individual institutions pay and obtain their virtual servers for the ERP from the private cloud. The customization, maintenance, and support are done remotely by individual institution's IT staff via the network. With private cloud and virtualization, the university system of our state saves money on an Oracle license fee. Individual institutions also receive the benefits of lower operation and maintenance cost.

For a similar reason of cost saving, our college moved its email system from a local Microsoft Exchange Server 2007 to a public cloud service – Microsoft Office 365 (http://outlook.com/xxx.edu). This new email service is free for higher education institutions and provides 25 GB free storage space per account, along with free online versions of Word, Excel, and PowerPoint. This move frees up not only email server hardware and storage space, but also college IT labor to operate and maintain a local email server, as well as the burden of email backup and disaster recovery. In 2015, the network drives for our college employees will also be migrated from local Novell servers to Microsoft Office 365 OneDrive – a public cloud storage service.

**DISCUSSION**

We incorporated the above newly learned practical knowledge and real cases from our college IT services group in our classroom teaching. Students can relate to this new content, because the background is our college IT. To make this informal self-learning and engaging students practice work, we emphasize two elements. First, we intentionally overcame the departmental and organization sub-culture barrier to reach out to the college IT services department. We purposely build and maintain a positive working relationship with the college IT services group. In return for the college IT services department's support we always show appreciation and respect. Our college IT department manager also embraces the idea of sharing his resources to enhance students' learning. Second, we always painstakingly write down notes during MIS club meetings and after informal conversations with the college IT services staff. Then we transcribe the notes into electronic format as soon as possible to have a permanent and easily accessible digital record. We review the notes before using the content for classroom teaching.

**CONCLUSION**

In this paper, we report our approach of conducting informal faculty self-learning by collaborating with the college IT services staff and using the newly acquired insights to motivate students' learning in the classroom. We suggest that MIS faculties take the initiative to eliminate information silo stigma and collaborate with college IT services departments to advance self-learning for the benefit of engaging students' learning. All the recommended activities are easy to implement for MIS faculties with a reasonable amount of effort. This study contributes to the literature on faculty informal self-learning. It also gives practical and doable recommendations for IS faculties. In the future, we plan to expand the sources of informal self-learning beyond the college IT to local business, IT and software consulting firms. Another potential extension is to explore virtual worlds such as Second Life (Dreher, Reiners, Dreher, & Dreher, 2009) to invite international IT speakers to give talks to our MIS classes and MIS club.

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