Proceedings of the SAP Next-Gen Chapter Conference 2019

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The Proceedings of The SAP Next-Gen Chapter Conference 2019, held July 14-15, at the University of Wisconsin-Milwaukee, USA.

The SAP Academic Conference Americas is the annual conference created exclusively for faculty in the SAP University Alliances network. It brings together SAP thought leaders, industry experts and educators from universities around the world. The event shares SAP's strategic direction and showcases opportunities to leverage SAP solutions and SAP University Alliances offerings to enhance students' academic and career outcomes.

Review Process: Abstracts were reviewed blindly by at least three independent reviewers and judged on their contribution to the field of Enterprise Systems and to the SAP Academic Community. Abstracts were either accepted, conditionally accepted, or rejected. The authors of accepted abstracts were required to address reviewer comments in the final version, and authors of conditionally accepted papers provided comments on their revisions to the conference papers chairs for secondary review and evaluation. If deemed necessary by the proceedings committee, resubmitted abstracts underwent a third review. Authors of accepted abstracts were asked to prepare an extended abstract for the proceedings. All authors were permitted to make final revisions to their extended abstracts for these proceedings.

Preface

One of the benefits of using SAP technology in the classroom is the breadth of the options available. When I first became involved with SAP, I was baffled by the SAP GUI. While watching a presenter at my first SAP Academic Congress click around in the Easy Access Menu, I wondered what I could possibly offer my students they couldn't learn for themselves. What I realized after that first conference was that the question is 'what do I want them to learn?' and "what SAP technology is available to support that goal?'. What I learned at that conference was that there were enormous opportunities.

It was much easier then because it was before SAP decided to venture outside the relatively stable world of ERP and BW. Through acquisitions and home-grown technologies like HANA, SAP offers a much broader, and more complex, range of solutions today. There are more opportunities available to faculty and students but the learning curve we must climb is much more difficult than it was 10 years ago. One of the goals for this conference is to provide a forum to allow faculty to share innovative approaches to inspire and educate others.

These proceedings include extended abstracts by SAP academic members from across the Americas. Submissions have been peer-reviewed and divided into four tracks: Innovations in Teaching, High Impact Practices, Incorporating the Latest Developments in Curriculum and HANAify Everything.

The Innovations in Teaching submissions include exercises in human resources, a weakness in our current curriculum (*Joel Rudin*), three approaches using a low-code development platform to teach modern application development (*Yvonne Antonucci, Kathie Wright and Ross Hightower*), an approach to offering SAP resources across courses in an integrated way (*ShiKui Wu*), an approach to recruiting more students into IS programs (*John Muraski, Michael Patton and Christine Witt*), an innovative program designed to use SAP technologies to help high school students learn about career options (*Ty Mathews-Price and Michael Love*) and a method for integrating SAP technology in the core accounting class (*Bob Haverland and Lorraine Gardiner*).

The High Impact Practices submissions include a tool allowing instructors to observe virtual team dynamics and to provide content-specific coaching (*Kathleen Wright, Karen Papke-Shields and Charles Boster*), an approach to teaching accounting using ERPSim (*Ozer Asdemir, Robert Gallagher and Chelley Vician*) and an innovative use of blockchain technology in the medical field (*Matthew Liotine*).

The Incorporating the Latest Developments in Curriculum submissions include a description of a course that uses SAP Business ByDesign cloud product (*Jennifer Tseng*), an evaluation of different approaches to embedding SAP technology in business school curriculum (*Randy Colvin and Jesus Carmona*) (*Ellen Monk, Lauren B. Eder and Yvonne Antonucci*) and an approach using SAP Predictive Analytics and machine learning to evaluate what factors predict student learning when using ERPSim (*Abdullah Albizri, Deniz Appelbaum and Rashmi Jain*).

The HANAify Everything submissions include a description of the exciting innovations available in the S/4HANA version of ERPSim (*Fourough Karimi-Alaghehband, Pierre-Majorique Leger and Jean-Francois Michon*), how an approach to teaching managerial accounting concepts using ERP changes when using S/4HANA (*Birsen Karpak, Jessie Wright and Kerri Henderson*) and a description of how S/4HANA has been encorporated into the curriculum at two universities (*Ronald Freeze, Susan Bristow and Bih-Ru Lea*).

Acknowledgements

A conference proceeding is not possible without the contributes of many people. A special thank you to Yvonne Antonucci. Without her experience and willingness to share, this would have been far more difficult. I would also like to thank all the authors and reviewers for sharing their expertise and their extra effort to make these proceeding a reality.

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A Suite of Human Resource Management SAP Exercises

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Abstract

In this session, I will share a suite of five human resource management exercises for SAP that collectively account for a third of the grade in one of my classes. Participants will receive access to everything they need in order to implement these exercises in their classes. The exercises have been tested twice per year for the past six years.

Keywords: human resource management, hiring, compensation, layoffs, Global Bike.

Introduction

When I attended the SAP University Alliances Summer Workshop six years ago, there was very little content pertaining to human resource management. This session addresses this shortcoming by presenting a suite of five human resource management SAP exercises for the Global Bike database in which positions are created and employees are hired, paid, laid off, and reassigned. Some of the content is adapted from SAP University Alliances resources and some is original. Each exercise requires about two hours of the instructor's time. Although some students will finish early, others will need help.

Students who attend member institutions of SAP University Alliances can earn a certificate by completing the equivalent of an entire college course in SAP. At our university, we devote a third of three different classes to SAP so that students can earn the certificate if they pass all three classes. For universities that follow our certification model, the challenge that this presentation will solve is finding a third class after the obvious first two of Management Information Systems and Operations Management. The third class does not have to be related to Human Resource Management, these exercises would work as effectively in an Organizational Behavior or Principles of Management class.

The Exercises

Exercise One

In the first exercise, students log on to SAP for the first time and change their passwords. They then add an infotype to their list of favorites and rename it. Global Bike includes a numbered set of Security Departments corresponding to the usernames assigned to the students, so for example the student with the username LEARN-002 can work on the 002 Security Department. This exercise concludes with the creation of three positions within each Security Department: Chief Security Manager, Security Manager, and Security Guard.

Exercise Two

In the second exercise, students begin by adding another infotype to their list of favorites and renaming it. They then fill two of the three positions that they created in the first exercise. The Chief Security Manager is given the same name as each student, so for example John Smith the student will hire John Smith to be the Chief Security Manager. The Security Managers' names are assigned to each student. The names of the Security Managers are actually the names of politicians from Thailand such as Apirat Sirinawin. Using names with which the students are unfamiliar reinforces the importance of correct spelling. Also, the Security Managers live in Oklahoma and work in Texas. Therefore, their Residence Tax Areas are not the

same as their Work Tax Areas. It is important for the Work Tax Area to be correct as there would be a host of negative consequences to an employee who was incorrectly assigned to the wrong Work Tax Area.

Exercise Three

In the third exercise, students assign pay rates to the Chief Security Manager and the Security Manager, and then the students assign pay raises to both employees starting on the first day of the next month. I created this exercise from scratch because I could find nothing to adapt in the SAP Library. This is the most challenging exercise because assigning and changing pay rates results in a host of warning messages and error messages.

Exercise Four

In the fourth exercise, students lay off the Chief Security Manager and reassign the Security Manager to the Human Resources department. Finally, students purchase bicycle helmets for the Security Manager and the Security Guard. As part of the purchasing process, they add another infotype to their list of favorites. The fourth exercise is the final exercise that takes place during class time, and it is also the final exercise for which I allow students to correct their mistakes.

Exercise Five

In the fifth and final exercise, students hire, and assign pay rates to the Security Guards, who also live in Oklahoma and work in Texas. The names of the Security Guards are actually the names of Kenyan politicians such as Jamleck Kamau, which again reinforces the importance of correct spelling. This exercise is completed during the final exam period. The students are given much less detailed information than in the other exercises and they are not granted the opportunity to correct any mistakes.

Logistical Issues

The exercises are self-paced, but they are done during class time. Allowing students to work at their own pace puts less stress on the computer networks that link them to SAP and therefore reduces processing delays. Using class time is preferable to assigning these exercises as homework because it is difficult to solve students' problems if they are not in the same physical location as the instructor. The most common problem that students experience is that they forget their passwords and are therefore locked out of their accounts. The solution is to order about 20% more accounts than students so that students can be reassigned to new accounts if they are locked out.

The second-most common problem is that students fail to correctly save their pay rates so that the annual salaries are zero dollars instead of the intended amounts. The solution is to show them how to double-check their work. The only other problem that occurs with any regularity is that, for some unknown reason, some students cannot search for employees by name and instead are diverted to a Free Search infotype. The solution is to search for all employees whose names do not equal "". This yields a list of all of the employee names that come with Global Bike plus the names of all of the Chief Security Managers and Security Managers, which is manageable for a class with fewer than fifty students.

The future of SAP Human Capital Management

SAP plans to phase out its human capital management components in favor of the ones that are produced by SuccessFactors, a company that it acquired in 2012. However, SAP will have to continue to allow users to post employee names and pay rates because that information needs to be integrated with the rest of the ERP so that users can track their expenses and so that only authorized personnel can purchase certain goods and services. The SAP UCC also plans to migrate towards HANA and away from the original ERP, but the systems are sufficiently similar that only minor modifications should be needed to these exercises. Student reactions to these exercises have been uniformly positive, with several students reporting that they were quickly able to utilize SAP at their jobs due to having been introduced to it in the classroom.

Modern Application Development with Mendix: Preliminary Findings from Three Pilot Implementations

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Abstract

Many businesses are adopting "low-code" software development platforms to address an ever-increasing demand for enterprise applications. Mendix, a recognized low-code platform "leader" and SAP strategic partner, provides a full complement of tools for rapid application development, agile project management, testing and delivery. This research presents three Mendix pilot implementations in education settings: (1) an introductory agile software development project; (2) Next-Gen projects for local business clients; and (3) development of SAP Fiori enterprise applications utilizing HANA connectors. The primary takeaway is that Mendix offers a robust platform that can be incorporated across many information technology courses and project-based learning scenarios.

Keywords: low-code applications, software development, project-based learning, agile project management, Fiori applications, SAP HANA

Introduction

Consider the plight of today's application development manager. Charged with delivering on the promises of digital transformation, she is also managing resources already stretched thin by the demands of current systems and continual requests for enhancements to existing applications. It is not surprising that "low-code" platforms offering drag and drop business process modeling and components that can be quickly assembled into powerful and scalable mobile apps would be an attractive complement to traditional software development tools. Published cases documenting standard code projects converted to low-code platforms cite substantial productivity gains, often reducing development time by a factor of 5 to 10. Recent industry research by Forrester indicates that 23% of global developers surveyed report using low-code platforms in 2018 and another 22% planned to adopt within the coming year (Rymer & Koplowitz 2019).

SAP has responded to these trends by designating the independent software vendor Mendix--a recognized low-code platform leader--as a strategic partner for low-code development in 2018. Mendix immediately delivered configurable HANA connectors and SAP application design templates that can be quickly turned into Fiori compliant mobile apps. In addition to the SAP-specific use case, Mendix offers significant value as a platform for teaching modern application development across multiple courses and project-based learning scenarios (Litman & Field 2018). Mendix provides two levels of integrated development environment (IDE) tools: a cloud-based platform for rapid prototyping, and a robust desktop version with advanced features to enable custom modifications. Both platforms are embedded within an agile project management (SCRUM) framework that supports rapid prototyping-to-feedback sprints, application change management, and team collaboration.

This research presents three very different pilot implementations of Mendix at SAP University Alliance (UA) institutions: (1) a team project in an introductory business applications development course; (2) a Next-Gen project competition involving local business clients; and (3) an advanced development course utilizing SAP connectors and Fiori templates. Preliminary findings suggest that Mendix can be easily adapted to diverse learning scenarios and that it bridges technical skills acquisition with application development concepts[1].

Three Mendix Pilot Implementations

1. Introduction to rapid application development and agile project management

In this pilot, Mendix was introduced to 57 undergraduate students enrolled in a first level business application development course in spring 2019. After initial training on Mendix cloud-based development tools and agile framework, students randomly divided into teams of 3-4 and were given a generic business application case involving two master data entities (Products/Suppliers) and a Purchase Order transaction entity. Team members self-organized, assigning SCRUM Master or Business Engineer roles. An initial paper-based design was disaggregated into a set of sprint "stories" with the objective of developing a minimal viable product (MVP) in the first iteration. At the conclusion of the first sprint, individual students tested and reviewed applications from other teams using the Mendix feedback mechanism—these included recommended enhancements as well as identified issues needing attention or further development. In the second iteration, each team analyzed the feedback, determining the feasibility and/or value of the recommendations, selecting a subset to be incorporated into a second sprint. Each of the two sprints was completed in a single week.

The pilot served multiple objectives. In addition to demonstrating the capabilities of a low-code platform, Mendix provided a realistic simulation of agile project management concepts applied to rapid application prototyping. The peer review and feedback process proved especially interesting as each student served as both reviewer and recipient. Anecdotal student responses suggest that students found this aspect to be particularly salient in understanding the importance of user involvement and feedback. Mendix was key to the agility of the teams, enabling them to organize quickly, collaborate immediately and communicate throughout development sprints.

2. Next-Gen project competition involving local business clients

To leverage partnerships between the University SAP Next-Gen Lab for design-thinking and analytics and the Small Business Development Center (SBDC), a student-led project was deployed into a spring 2019 object-oriented design and development course. This course is designed for students from multiple disciplines who may not have programming experience (although a majority had taken an introductory Python programming course.) The project objective was that students utilize design thinking methods to develop applications for the SBDC. By integrating the application development life-cycle with the design thinking methodology for industry (Brown 2008; d.school Stanford 2015; SAP 2016) the project allowed students to collaborate with SBDC stakeholders, identify a need, develop application solutions, and pitch their solution to the actual clients who selected a winner. Students were introduced to both Mendix (two labs) and JAVA (five labs) within the first few weeks of the course. SBDC directors addressed the class in the 5th week to present their main issues and needs. Seventeen undergraduate students were subsequently divided into 4 teams. Projects were entirely student-led, with faculty and SBDC staff assisting as "coaches".

Projects chosen by the students to assist the SBDC operations included applications to assist in client engagement management and engagement letter reporting. Teams decided whether to develop their project solutions in Mendix or JAVA; interestingly, all four student project teams selected Mendix as their application system platform. Student groups presented to the project stakeholders who helped evaluate the solutions. The winning application was immediately fully operational for the SBDC including the ability to access data using their mobile devices from any location. This experiential learning opportunity coupled with the SBDC partnership and Mendix has provided students with a learning environment designed to facilitate innovation with a purpose. Students participated in real-world projects engaging with

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[1] Curriculum examples will be presented at the conference and are available from the corresponding author

stakeholders to analyze and develop solutions rapidly in Mendix within 8 weeks, enhancing critical-thinking, collaboration, and career goals.

3. Web Application Server Development

During the 2018-2019 academic year, Mendix was implemented in a course designed to introduce students to development in an SAP environment. The course has been difficult to teach because the students are a mix of students from Information Technology Management (ITM) and Supply Chain Management (SCM). When the course was introduced, the technologies used were SAP Visual Composer and SAP Enterprise Portal. These products allowed students to develop applications without coding but have been discontinued and the class has become a coding-oriented class using SAPUI5. While the ITM students benefit from this approach, the SCM students find it challenging.

Mendix provides the ideal platform for the course. While not trivial, students can create significant applications in much shorter time than when having to learn the intricacies of a programming language (Litman & Field 2018). This appears to be true even for students without previous programming experience. Because the SCRUM development methodology is embedded in the platform, the course is taught as an agile project. Students complete an individual project focused on Mendix techniques. Each week is a sprint and classes are conducted as sprint review and sprint planning meetings. Assignments are provided as user stories which are uploaded to the student's projects in the Mendix portal by the instructor. The students also complete two group projects. In the first, the emphasis is on the agile methodology. Students must create a story map, convert these to use stories, organize them into sprints and complete the project using the SCRUM process. In the second, students use the design thinking methodology to create an original app idea and complete the process through an initial prototype. Mendix, while it is not trivial, allows students to concentrate on the methodology, which is a skill set that will be more broadly applicable than a specific technology could be.

Conclusion

Based on these three Mendix pilot implementations we offer the following observations. First, Mendix offers an excellent bridge for students who may have excellent business analysis and design abilities, but insufficient programming skills, to build operational applications that meet defined business needs. Students appear to prefer Mendix over traditional IDEs: the development platform is easy to use, and the collaboration support facilitates group interactions. Similarly, the team collaboration tools enable instructors to observe the development process closely and intervene quickly when necessary, thus keeping efforts on track. Finally, although the pilot implementations described here were in the context of technical skill development, we envision that Mendix would also be suitable to demonstrate theoretical concepts discussed in systems analysis and design and project management courses. Thus, Mendix provides an adaptable and flexible platform for teaching multiple aspects of modern application development.

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Streamline Learning Experiences in MIS Courses with SAP Technologies: An ePortfolio Approach

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Abstract

A number of SAP products have been taught and/or used in Management Information Systems (MIS) courses, while they are often delivered in a fragmented manner. ePortfolio as a collection of learning material and deliverables offers opportunities to integrate various resources within and across courses. The present work adopts an ePortfolio approach to streamline the students' learning experiences in MIS courses, particularly with SAP technologies. It shares a set of examples in both undergraduate and graduate courses.

Keywords: ePortfolio, MIS education, SAP ERP, ERPsim, SAP Lumira, Business Objects Analysis for Office.

Introduction

A number of SAP products have been taught and/or used in Management Information Systems (MIS) courses, such as SAP ERP in enterprise systems and Business Objects Analysis for Office in business analytics. While the MIS courses are offered at different stages and levels of studies, those SAP technologies are often delivered in a scattered manner. It lacks an integration of the experiences and competencies from the students' perspective. ePortfolio is a collection of learning material and deliverables from one or more courses, which provides students with their own space to document and manage all their course work (Sparrow and Torok 2018). It also offers opportunities to integrate various resources within and across courses. The present work attempts to use ePortfolios to streamline the students' learning experiences in multiple MIS courses, particularly with various SAP technologies. By demonstrating and sharing a number of examples in both undergraduate and graduate courses, the present work aims to enhance the teaching and learning with SAP technologies in MIS education.

SAP Technologies, Core Competencies & Learning Experiences

MIS is a unique discipline in higher education, as it bridges the technical and managerial sides. Comparing to other courses in business programs, MIS courses often deliver and use much more technologies. SAP as a leader in enterprise systems offers a line of technology products and services, which are highly demanding in industrial practices. Thus, SAP technologies has been widely taught and used in higher education and job training, especially in MIS programs.

From the curriculum development perspective, each MIS course is designed to and mapped for certain core competencies (e.g., knowledge of management functions, analytical skills, teamwork). Teaching and using SAP technologies should thus serve the learning objectives and deliver the expected learning outcomes. Indeed, each SAP product comes with a set of functions and features to meet certain customers' needs. To name a few, SAP ERP provides an enterprise scale business application that can integrate different business functions (e.g., manufacturing/production, accounting/finance, sales/marketing). The Business Objects Analysis for Office package provides a more powerful analytical tool, which can be built upon existing skills with Microsoft Excel. The ERPsim package simulates various business scenarios and helps users in better

understanding business processes and making decisions. Since the courses are often taught by different instructors and offered in different stages/levels of study, these technologies are also used in a scattered way. This has led to fragmented learning in terms of knowledge, skills and experiences. ePortfolio is a collection of artifacts that are created by the students themselves through their learning experiences, allowing them to connect multiple components within a course and even across courses (Sparrow and Torok 2018). This offers a solution to integrate those scattered course components and related technologies and is potentially capable to streamline the students' learning experiences towards their career development.

Illustration

Table 1 shows a sample of ePortfolio, in which four course components are delivered via SAP technologies to build core competencies. Whereas different technologies are employed in those components or courses, they are now connected to each other. For instance, the dataset for developing analytical skills can be generated from the ERP configuration with the Global Bike Inc. case. The analytics with Business Objects Analysis for Office can be offered at undergraduate level or early stage of undergraduate study, while ERPsim can be used at graduate level or later stage of undergraduate study.

Table 1. A Sample ePortfolio

SAP Technologies	Course Components	Core Competencies
SAP ERP	Global Bike Inc. case	Enterprise systems Material management
Business Objects Analysis for Office	Global Bike Inc. dataset	Analytical skills
ERPsim	Global Bike Inc. case, reports	Business process Analytical skills Decision making
SAP Lumira	Global Bike Inc. dataset	Analytical skills Communication skills (data visualization, reporting)

The ePortfolio is created and maintained on the Learning Management Systems (e.g., Desire2Learn, Blackboard Learn), and thus the students can access and update the content along with their study with different course work. When and after the students are graduating, they can also demonstrate their skill-set with their ePortfolio as a package. This can also be implemented on an internal training system for organizations, where the employer and employees can manage and track the training plan and progress.

Conclusion

Similar to the approach of ERP systems, there is a need for more integrative perspectives in teaching and learning. ePortfolio is considered here as an avenue to connect and streamline those fragmented course components with SAP technologies.

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Workshop Proposal Increasing Student Enrollment in the IS-Related Program

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Keywords: IS Recruitment, ERPsim, IS Job Shadows

Background

Companies face challenges identifying and recruiting skilled IT workers. As the need for talent grows, universities around the country have seen mostly flat enrollment. It is imperative that universities collaborate and share best practices for the recruitment and retention of IT students.

The Business Information Systems (BSIS) program in the College of Business at California State University, Chico is known nationally for hosting the SAP UCC and regarded for graduating students with strong Enterprise Resource Planning (ERP) skills. However, in recent years, the number of students majoring in BSIS has shown a decline that does not make sense given the high demand for graduates in technical industries.

Similarly, the Information Systems (IS) program in the College of Business at The University of Wisconsin – Oshkosh is recognized across Northeast Wisconsin for the quality of ERP and Web & Mobile development graduates. Only in the last four years has enrollment risen from 33 (2015) to 51 (2018). While the increase is promising, this figure falls drastically short of industry demand.

In this workshop, we will:

- Share the use of ERPsim to recruit high school students in Chico.
- Discuss the use of ERPsim and other technologies in the UW Oshkosh Essentials of IS course.
- Showcase the use of IS Job Shadows at UW Oshkosh.
- Collaboratively discuss and explore collective best-practices.
- Brainstorm additional ideas and solutions.

Part 1: Presentation (15 Minutes)

The three panelists will address the IT talent gap and speak about recruitment efforts involving ERPsim in High Schools, the use of engaging technologies, including ERPsim, in an Introduction to Information Systems (IS) course, and the use of IS Job Shadows for interested students in the Intro to IS course.

ERPsim in High School

Recruiting Generation Z students to universities requires more innovative and modern tactics than traditional approaches such as flyers, brochures, presentations, and videos (Luttenton-Knoll, McGinnis,

and Magal 2016). The "Next Generation" of students prefer to engage with technology and are visual learners. An event that offers these students the opportunity to apply their rapidly growing technological skillset to solve business problems can be a powerful recruiting tool for business schools. The Next-Gen Wildcats program was developed based on the event guide provided by Grand Valley State University outlining how to offer an SAP Young Thinkers Program. This presentation will discuss how California State University, Chico implemented the Young Thinkers program rebranded as Next-Gen Wildcats.

Course Redesign: Engaging Technologies in an Intro to IS Course

Similarly, recruiting Generation Z students to IS majors, requires an active engagement and problem-solving framework. The University of Wisconsin – Oshkosh recently redesigned the Essentials of IS course, which is required of all College of Business Students, to include several active hands-on learning labs. These labs included: ERPsim, ERP Sales & Distribution, SQL, PowerBI, and the use of Wix to create a simple website. These labs and focus on practical application of technology for all business majors have increased students' interest in the IS0-major after taking the course.

IS Job Shadows

It is important that students have an understanding of the role that technology has within a business and an understanding of the role of an IS professional. In partnership with industry, the IS Job Shadow program was developed for UW Oshkosh students as a way learn about a local company, the role of technology within the company, observe and experience a "day in the life" of a technology employee, and ask questions about the IS-related careers and the transition from college to career.

Part 2: Idea Sharing (5 Minutes)

Following the presentations, we will form small groups. Each group will be given a series of questions to discuss. A scribe will be identified at each table to record the key comments. Following the discussion, each table will report out their discussions to the large group. The questions include:

1. What are enrollment trends for technology-related majors at your institution?
   a. Which University or College?
   b. What is your program?
2. Have you used any innovative approaches to recruiting students into your technology-related major?
3. Why do students decide to pursue a technology-related major?

Conclusion

By attending this workshop, attendees will:

- See how ERPsim has been used in high school and within introductory IS courses to generate excitement and interest for IS-related majors.
- Learn how one University has used IS Job Shadows with industry-partners to stimulate interest in IS-related careers.
- Get inspired to undertake new and exciting methods for recruiting new students to both your university and IT-related majors.

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OneSource Student Internship Program

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Keywords: Student Internship Program, Mentoring

Introduction

The HISD **OneSource (SAP) Student Internship** is a program for high school juniors and seniors that requires a semester(s) commitment and allows students to explore their career interests, gain valuable work experience, and possibly earn credit toward their high school diploma.

Sections:

What is the OneSource Student Internship Program?

OneSource interns develop business skills, learn about hot technology topics, network with the pros, and more. Interns work closely with our OneSource (SAP) team. Project work includes requirement gathering gap analysis, and tailoring/implementing/testing SAP Modules.
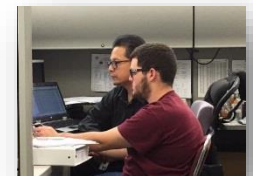
Discussions will include *(Subsections listed)*

- *Recruitment*
- *Student Internship Qualifications*
- *Student Selection and placement*

Recruitment: We are invited to high schools in October to meet with students that are in Computer Science/Technology classes. We talk to the students about the program and the areas in which our program covers within SAP.

Student Internship Qualifications: *This internship is open to high school juniors and seniors.*

- Students must complete the preliminary application. The preliminary application will include the students submitting their own **resume.**
- Students must attend one of the Student Information Meetings.
- Students must maintain a 3.0 or above grade average.
- Students must provide their own transportation.
- While in the Internship Program, students must apply for at least 2 colleges.
- Students must have **one teacher and one counselor** complete the faculty recommendation form.

Student Selection and Placement: We have a team of mentors, managers/directors that review each application. In some cases, students may be required to come in for an interview.   There is a section within the application that indicates which areas of interest. Based upon their selection, we place the students in that area.

- **Internship Training**: All student interns receive SAP basic training prior to working with the **OneSource** (SAP) Mentors.

Training covers topics such as SAP Business Processes, basic navigation, and SAP Terminology. Upon completion of basic training, students work with the **OneSource** (SAP) Mentors for a period of 4-8 weeks each cycle. Each intern will get the opportunity to work in all modules used within HISD.

- **Working with Mentors/Developing Projects per SAP Modules**
  Mentors are selected from our department.   They specialize in the following areas: SAP Security; SAP ABAP ; SAP ECC FI; Nutrition Services; Plant Maintenance; Supplier Relationship; Management; Warehouse Management; Workflow Administration.

  Additional manuals are given to each intern based upon the mentor's area. Mentors demonstrate daily duties. Interns attend meetings, trainings and field assignments with their mentor. Depending upon the school and the student's schedules, interns come in 2-3 days a week.

Example of Student Intern Schedule: *Student intern working with Mentor (Business Systems Analyst) specializing in monitoring the district credit cards. (ProCard/Finance)*

- **Week One**: Intern will visit the Accounting Department and learn the process of how credit card transactions are imported into the SAP System.

- **Week Two - Three**: Intern will work with the BSA to correct tables if needed and assist the Procurement/Accounting team with troubleshooting technical needs.

- **Week Four**: Intern will visit and interview (for the weekly Internship Newsletter) the Procurement team (ProCard Administrators) that works with the bank that handles credit card activity. Intern will see the entire ProCard process from beginning to end.

- **Week Five-Eight**: Intern will work on district customer issues with mentor's assistance.

Module Exit Presentation: Upon completing the *eight-week session*, interns must successfully complete a **Module Exit Presentation**. Students are given the presentation guidelines which must include:

- An overview of the internship area including a brief description of the internship areas of service.
- A description of what was learned from the experience and how it can be applied in the future.
- A description of the challenges and successes experienced during the internship module.

Mentors, managers, and guests will use the *Presentation Rubric* to grade the interns on preparedness, time and content of their presentations. The feedback is given to the interns and we work on how to improve their presentations for the next cycle.

Student Internship Presentation Rubric

Intern:_____   Date:_____

Category	4 Points Distinguished	3 Points Above Mastery	2 Points Mastery	1 Point Below Mastery	0 Points Novice	Points Scored
Preparedness	Student is completely prepared and has obviously rehearsed.	Student is prepared but might have needed a couple more rehearsals.	Student is somewhat prepared, but it is clear that rehearsal was lacking.	Student is barely prepared to present, and struggles through the presentation.	Student is not at all prepared and needs help to finish the presentation.	
Speaks Clearly	Student speaks clearly and distinctly all (100%) the time.	Student speaks clearly and distinctly most (99-90%) of the time.	Student speaks clearly and distinctly most (89-80%) of the time.	Student speaks somewhat distinctly (79-70%) of the time.	Student often mumbles or cannot be understood.	
Content * (See Page 2)	Shares all 5 content items and more in detail	Shares all 5 content items in detail	Shares 3-4 content items in detail	Shares 2-3 content items in detail	Shares 2 or less content items in detail	
Time	Length of presentation is 5 minutes long.	Length of presentation is between 5minutes and 4minutes and 59 seconds	Length of presentation is between 5 minutes and 4 minutes and 59 seconds	Length of presentation is between 4 minutes and 3 minutes and 59 seconds	Length of presentation is less than 2 minutes.	
					Total Score	

16-15 Distinguished   14-12 Mastery   11-10 Below Mastery   9-0 Novice

Program Accomplishments and Successes

Throughout the course of the four years we have had a total of 47 students participate in the program. All students that have participated in the program where accepted into higher education institutions. The majority of our interns have gone on to major in technology fields or after completing the program changed their majors in college to technology fields. We have had one student intern to pursue a certification in SAP Security after participating in the internship program.

HISD was the first school district in the nation to have three student interns to complete ABAP programs that the district currently uses.

Just this year alone our interns completed:

- 44 hours in SAP Security
- 44 hours in SAP Workflow Administration
- 50 hours in SAP ABAP Development
- 12 hours in Finance and
- 55 hours of Networking and Infrastructure

Our interns have done such a great job that for the past four years we were able to offer summer employment with pay. During the summer, interns have the option to work with a mentor that they worked with during the school year or work on projects with new mentors within our department.

We have had one of our student interns, who is currently a Junior at the University of Houston- Downtown, to return every summer for the past 4 years and work as a summer intern. She stated that everything she learned while in the internship program is what she is studying in college. Currently she is working with our Asset Management team.

Every year we have had the opportunity to take our interns to the **Houston ASUG** Chapter meetings. Two interviewed for jobs, and one is currently working as a summer intern for one of the companies.

Implementing the OneSource Student Internship with the SAP University Alliance Program

Houston Independent School District is one of the newest members of the SAP University Alliances. The Career Readiness Department will be working with our first school - **Houston MSTC High School**, to implement the teaching tools from the SAP University Alliances (SAP Learning HUB, SAP University Alliances Workshops) in order to build a new ERP career pathway for our students.

Conclusion

Our Goal with creating the OneSource Student Internship Program has always been to provide students valuable real-world experiences and giving each intern a head-start on their careers while in high school.

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Patrick Porter, IT Business Solutions Director

Using SAP Integration to Enhance Student Learning of Financial Accounting Concepts

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Abstract

The presentation describes the multi-semester integration of SAP ERP into all sections of a core financial accounting course required for business majors. This curriculum change has resulted in positive student responses and evidence of improved accounting cycle knowledge. The case study is based on a popular textbook and readily available teaching materials and provides a blueprint for faculty at other institutions who wish to incorporate SAP into their introductory accounting courses.

Keywords: Accounting education, software utilization, ERP systems, SAP

Introduction

A course covering principles of financial accounting is typically required for all undergraduate business students since its content is essential to understanding, among other things, the recording of business transactions and subsequent communication of an organization's financial information. Students' knowledge of the accounting cycle that begins with transactions and ends with closing the books is critical to their understanding of financial accounting. The use of software can improve students' understanding of the accounting cycle and provide students exposure to systems similar to those they will encounter in the workplace (Boulianne 2014). Using an ERP system instead of standalone accounting software provides students a broader, enterprise view of financial accounting (Blount et al. 2016). SAP is the leading vendor in ERP and, more broadly, supply chain software (Bond 2018) and has a strong global partnership with institutions of higher education via its SAP University Alliances (UA) program. These factors make it a good choice for integration in university courses. The presentation describes one business school's integration of SAP ERP into all sections of its core financial accounting course over more than two years. The effort began small and has grown into a course redesign, as recommended by Blount et al. (2016), that has resulted in positive student attitudes and evidence of improved accounting cycle knowledge.

Case Study

The case study occurs at Dalton State College, a University System of Georgia institution that has an enrollment of approximately 4600 students and is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Dalton State College includes the AACSB-accredited Wright School of Business with approximately 800 students and 25 full-time faculty members. The school offers six Bachelor of Business Administration (BBA) degrees in accounting, finance and applied economics, logistics and supply chain management, management, management information systems, and marketing.

Dalton State College joined the SAP UA in June 2016 and immediately began training faculty in order to integrate SAP software, where appropriate, into the instruction of core BBA and MIS courses. Accounting faculty attended an on-site workshop that covered the SAP UA Global Bike AIS curriculum developed by Jones and Mensching (n.d.) and targeted the journal entries exercises for the financial accounting course required for all BBA majors.

SAP Integration in Financial Accounting Course

The initial attempt to expose students to SAP journal entries occurred in Spring 2017 as a special, in-class lab activity during final exams that had no course credit associated with it. The students logged in and entered beginning balances, transactions and adjusting entries. Even in this short exposure, the focus was more on what the software could do relative to the concepts the students had studied rather than simply training on the software (Neely et al. 2015).

Beginning Fall 2017, the lead author, serving as the SAP course coordinator, aligned the SAP exercises with the first five chapters of the common textbook (Wild et al. 2018) during the first third of the semester. An important goal of the SAP integration is to reinforce course learning objectives related to the accounting cycle. Following the chapter coverage, students were provided expanded, paper-based instructions and entered the beginning balances, transactions and adjusting entries into SAP outside the classroom by accessing the SAP web GUI. The pedagogy for Spring 2018 mirrored Fall 2017 with addition of voice-over PowerPoint instructions made available in the learning management system instead of distributing paper copies.

Upon reflection on feedback from students and instructors from the 2017-2018 course sections, the SAP course coordinator determined that assigning the exercises after all the relevant chapters had been covered was not bringing the desired improvements in accounting cycle knowledge. Similar to the experiences described by Laosethakul et al. (2016), the single exposure approach resulted in the students focusing on successful use of the unfamiliar software rather than the accounting concepts. The improved pedagogy for Fall 2018 and Spring 2019 replaced similar textbook chapter assignments with the SAP UA Global Bike exercises that students perform in the cumulative phases shown below. Instructors provide feedback and grades after each phase.

- **Phase 1:** *Students familiarize themselves with the SAP journal entry interface and enter beginning balances. (Chapters 1 and 2)*
- **Phase 2:** Student teams analyze business transactions and events in class to determine appropriate journal entries. Students make corrected journal entries (provided by the instructor) in SAP outside class. (Chapters 1-3, 5)
- **Phase 3:** Student teams prepare and analyze adjusting entries in class and enter them in SAP outside class. (Chapters 3 and 4)
- **Phase 4:** Students prepare financial statements from the SAP adjusted trial balances outside class as part of the semester final (Chapters 3-5, emphasis on 4).

Findings

Beginning in Fall 2017, course instructors surveyed students on their perceived achievement of course learning objectives, the difficulty of using the SAP system, and its importance for their future career opportunities. The students generally responded favorably to all categories of questions with the responses becoming more positive alongside curriculum improvements. Importantly, the introduction of a phased approach brought significant gains in accounting cycle knowledge exam scores compared to scores when either there was no SAP integration, or the single SAP assignment was used. The results suggest that multiple exposures to the software allow students to achieve a comfort level sufficient for them to focus on the relevant accounting concepts.

Faculty Support and Class Section Coordination

As is the case for many schools, the core introductory accounting courses at Dalton State College have multiple sections and rotating instructors that create a challenge for sustaining SAP integration over time.

The SAP coordinator for the course addresses this issue by training and mentoring instructors and sharing all materials. Additionally, the coordinator presents the initial assignment to new instructors' sections, monitors student progress, and relays results to the other course instructors. These activities have allowed a consistent, coordinated SAP integration across multiple sections and instructors.

Conclusion

The integration of SAP software into an introductory financial accounting course can result in improved conceptual learning, especially if students use the software repeatedly. Additionally, familiarity with SAP systems may enhance students' internship possibilities and career qualifications, especially since the course is typically taken in the sophomore year. Finally, the case study provides a road map for other instructors who wish to integrate SAP software into their financial accounting courses since the approach aligns with a popular textbook and the teaching materials are available on the SAP UA Learning Hub and from the presentation authors.

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Sammy to the Rescue: Facilitating Synchronous Online ERPsim Games

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Abstract

Given increasing competitive pressures, use of complex enterprise systems and globalization, preparing students, particularly those in graduate programs, requires opportunities to gain experience making decisions in fast-moving and dispersed environment. This paper outlines an approach that was used to facilitate both research on collective efficacy and teaching in two MBA classes by using an additional member of virtual teams to record teams over time and provide content-specific assistance as needed.

Keywords: virtual teams, team observation, collective efficacy, virtual coaching, ERPsim

Introduction

Changes in the business landscape such as increasing competitive pressures and globalization have resulted in the use of large information systems and dispersed teams (Cronan and Douglas 2018; Curseu, Shalk and Wessel 2008). This requires that those entering the workforce gain an understanding of and experience with complex systems (Leger 2006), particularly with respect to information processing. And that information processing to support decision-making is being done increasingly by virtual teams (McLeod 2013; O'Neill, Hancock, Zivkov, Larson and Law 2016). Thus, effective preparation requires the opportunity for students, particularly those in graduate programs, to gain experience making decisions in fast-moving and dispersed environments.

One goal of the MBA program at the authors' university is to provide students with opportunities to work in just such environments. To this end, both versions of the ERPsim Manufacturing Games developed at HEC Montreal are used in two courses (accounting and information systems) that have been co-developed and are taught in a tightly integrated manner. The use of the simulations also offered an opportunity for research on collective efficacy. This paper explains the use of a tool, referred to as Sammy, during the simulations to allow the authors to observe team dynamics and to provide content-specific coaching. This method, although somewhat labor intensive, offers several opportunities to enhance teaching and provide rich data for research.

Background

The use of Sammy in virtual teams participating in the Manufacturing Game was done to accomplish two goals: (1) gather data for a research project focusing on collective efficacy and (2) act as a virtual coach for online teams.

Research Tool

The authors were pursuing a research project focusing on collective efficacy in virtual teams. According to Bandura, "collective efficacy is defined as a group's shared belief in its conjoint capabilities to organize and execute the course of action required to produce given levels of attainments" (Bandura 1997, p. 477). Bandura (1997) posits that there are several sources of collective efficacy, one of which is "enactive mastery", where the belief in the team's ability to perform in a certain situation is enhanced through small wins.

Traditionally, collective efficacy has been measured using a survey instrument administered to individuals at different times during a project. This was used in the current research, but we also wanted to collect richer data by observing teams over time including the members' verbal interactions and body language. Such observation would also allow us to identify instances of enactive mastery. Of course, an important consideration was how to observe teams without influencing team member behavior.

Virtual Coach

Although the original intention was being able to observe team dynamics, the author's found that Sammy could also be used to allow virtual coaching for individual teams. In much the same way as an instructor moves around a room to answer questions, Sammy allows the instructor to do so in a virtual environment.

Sammy to the Rescue

The class sessions where students played the ERPsim Manufacturing Game were done synchronously to allow "face-to-face" interactions in the teams via Zoom virtual meeting software. Zoom breakout rooms were created for each virtual team providing a space for each team to have discussions prior to and during the simulation. This also facilitated the video recording of each team that had given consent to be part of the research project described previously; however, someone in the breakout room had to start, pause, and stop the recording. Given the desire to have as little impact as possible on student interactions by being invisible, the authors devised a way to have a fifth virtual member of each team, and thus Sammy was born. A Sammy was added as a fifth member of each team. In reality, Sammy was one of the faculty involved in the simulations. Since Sammy was in the breakout rooms, Sammy could see and hear the interactions, do the recording, and respond to questions as appropriate.

The students participating in the simulations were, with a few exceptions, enrolled in both the accounting and information systems courses simultaneously. The students were from both the hybrid and online programs and were combined given that the content is the same across the two delivery methods. Students were placed in four-person teams by the instructor of one of the courses. They were assigned readings in preparation for playing the simulation. Students had remote access to SAP to participate in the simulations.

During synchronous sessions on four consecutive weeks, students entered the Zoom meeting. As students arrived for the session, one of the instructors would assign them to the appropriate breakout room. A Sammy had already been assigned to each breakout room. Following a protocol devised to administer all of the moving parts, students would be in the main Zoom room for instructions and would then go to the appropriate breakout room. Teams worked in their breakout rooms to plan their strategy and to play the rounds of the simulation. Once in the breakout room, students could share screens while having discussions. The Zoom host, one of the instructors, could broadcast messages to all students to let them know when the breakout rooms would close, and everyone would be returned to the main room. Results were shared when everyone was back in the main room. At specified times, students would access brief surveys that were part of the research project.

Initially Sammy's role in each breakout room was intended to allow recording the breakout sessions. But early in this process, we found that there were times when students had questions or issues with running the simulation. They could virtually raise their hand and the Sammy in that room would be able to head them in the right direction, similar to what would happen in a face-to-face class.

Observations & Takeaways

Team functioning is often difficult to assess because it is difficult to observe the participants without affecting their behavior. The teams seemed to forget that a Sammy was in their breakout room, which allowed for candid discussions and interactions during the session. As hoped from a research perspective, having the recordings over time allowed us to see changes in team behavior that seem to reflect enactive mastery. A good example of this is the evolution of Team I. The team seems completely disorganized the first week, and members are unsure about entering decisions and ask for assistance from Sammy. By the second week, the team seems to be operating more effectively. They also learn that they won the rounds for that session, which seems to energize the group and contribute to the individuals' beliefs that they can make good decisions. By the last session, the team is working together well, and the members realize that they are "thinking like a team". This is a good example of collective efficacy in action via enactive mastery.

The approach used in this situation has a number of benefits for research and teaching. The use of breakout rooms in Zoom allowed virtual teams to be able to work together synchronously in sharing information and making decisions, similar to what they are likely to experience in the business world. The use of a Sammy in each breakout room allowed the instructor to see where problems were happening and provide targeted support when appropriate. Sammy also provided a detailed view of student interactions and decision making processes and facilitated evaluating them over time. In the future, Sammy may also be used to introduce interventions to identify what can be done to enhance virtual team performance. Sammy did indeed come to the rescue for both research and teaching in this situation.

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Accounting instruction with enterprise systems experience and data analytics: A briefing on early results

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Abstract

SAP University Alliance Community educators seek to provide context-specific educational opportunities that leverage SAP solutions and real-world examples of data-driven decision-making. Business school accrediting bodies and professional accounting organizations emphasize the increasing importance of infusing students with skills and motivations to learn new technology skills quickly (e.g., agility). Our department's SAP faculty utilized the HEC Montreal ERPSim game to provide five large session events for more than 300 students taking introductory accounting classes. Our focused objectives included (1) exposure to integrated planning, procurement, sales, marketing, and financial functions of a firm; (2) tangible experience with accounting concepts of sales, profitability (profit –gross and net, margin-gross, net, contribution), net income, going concern, and costs (fixed, variable); (3) goal-driven teamwork and communication skills; (4) introduction to analytics and visualization topics; and (5) improved awareness of SAP-enabled business operations in the region and worldwide. Session takeaways will focus on learning goals, event logistics (including regional industry involvement), analytics illustrations, and preliminary outcomes.

Keywords: experiential learning, technological agility, ERPsim, SAP, analytics, visualization, accounting education.

Introduction

Educators strive to engage students in higher education learning environments, as evidenced by the research citing the learning utility of competition (Cagility 2015; Tucker 2018), problem-based learning (Léger et al. 2012), gamification (Huffman, 2016), and experiential (McCarthy 2016) methods for instructional purposes and outcomes. Accounting and business practitioners (AAA 2015), along with business school accrediting bodies (AACSB 2018; Vien 2018) are also asking for new hires with the abilities and attitudes conducive to quickly learning and using technologies for business purposes (e.g., technological agility). Within this milieu, many real-world companies rely upon enterprise systems such as SAP to drive decision-making and operations (AAA 2015; Bradford 2015; SAP 2019). Knowledge of prior successful SAP UA faculty usage of the ERPSim experience (Léger et al. 2010; Léger et al. 2013; Monk et al. 2017) motivated us to try an ERPSim event as a way to combine these multiple learning methods in support of accounting instruction.

Our department piloted a large-scale, outside-the-classroom event to supplement introductory accounting instruction with active learning through the HEC Montreal ERPSim game and SAP. With more than 300 freshman and sophomore level students enrolled during the spring 2019 timeframe, we completed five independent game sessions within a one-week time period. This presentation provides a brief report on our results from this instructional pilot test.

Event Logistics

Our logistics discussion covers the who, what, when, and where of our event planning and execution activities. We first outline the overview elements and then highlight specific actions for each stage of the event (prior, during, and after).

Table 1 highlights some of our key activities prior to, during, and after the event sessions.

Prior to Event	During the Event	After the Event
Summer planning: room reservations, Information Technology Services (wireless), Catering, Photography, Public Safety. Coordination with UCC and HEC Montreal support. Request clients.	ERPSim session run by 1 SAP faculty member; assisted by 1 SAP faculty member. Coaches: SAP faculty and student workers, industry volunteers, College faculty and staff	Use of HEC Montreal Microsoft Access Data Extraction tool to download ERPSim data.
Two practice ERPSim sessions for novice ERPSim Level 1 instructors, SAP student workers, accounting faculty	Emphasis on SAP standard reports and SAP actions to track company operations and profitability.	SAP student worker: extract and transform each session's Sales data into Excel worksheet; build Tableau visualizations
Pre-registration of students; support for GUI software download and install (SAP@University User Guide and Navigation handouts, videos, special install sessions)	Teams complete "Company Worksheet" tracking operational decisions and results [by round: sales,net income/loss, net margin; how did team determine prices? marketing? work roles? SAP reports? Available on request].	Accounting class discussion of accounting concepts seen in ERPSim: sales, profitability (profit, margin, contribution), net income, going concern, costs (fixed, variable)
Assignment of registered students to four-person teams (same instructor); attendance and student check-in at sessions	Review of company valuation and results (sales, net income, marketing) each quarter and overall.	SAP faculty presentation about descriptive analytics visualization from ERPSim results (team, instructor, etc.)

Who: In Spring of 2019, over 300 students from two sections of introductory financial accounting (freshmen) and eight sections of introductory managerial accounting (sophomores) were invited to participate in the out-of-classroom required SAP and Analytics event. Depending on the instructor, participating students received 2-5% credit toward final course grade. We also invited local industry representatives from ASUG, financial services and consulting firms (EY, Deloitte, PwC, KPMG, RSM, Wipfli, CLA, Mindset Consulting), and companies (3M, LifeTime, Ecolab, UnitedHealth Group) familiar with SAP-ERP as team coaches and for networking opportunities. Selected industry representatives held a panel session about enterprise systems and analytics as part of the Sunday sessions. Our event team included four faculty holding ERPSim certification credentials, five SAP student workers, and our intrepid departmental administrative support person. We assigned students to four-person teams.

What: We used the HEC Montreal ERPSim Bottled Water Distribution Game scenario. In this setting, the company operations move from a focus on Sales and Marketing decisions (Quarter 1) to adding Procurement decisions (Quarter 2) and finally layering on additional Forecasting decisions in Quarter 3.

Students used their own laptops with the SAP GUI to access the ERPSim game through SAP-ERP menus as prescribed by the ERPSim Job Aids (Léger et al., 2013).

When: We held a total of five 2.5-hour sessions – three on a Sunday (2 concurrent in afternoon) and two concurrent on a Thursday evening. On the Sunday, we held a required ½ hour panel session for all students attending any of the Sunday sessions (approximately 200 students in total).

Where: Up to 25 four-person teams comprised each session. We used a University ballroom setting on Sunday, with tables of eight capable of seating two teams comprised of four students each. Thursday sessions used two different room settings. A larger room had capacity for twenty-four teams of four. The second room was an active learning classroom with a capacity for about ten four-person teams.

Preliminary Outcomes and Suggestions for Faculty Adoption

The use of ERPSim/SAP with analytics was a powerful educational experience for students. Future work needs to include empirical assessment of learning such as accounting knowledge and technological agility. We will extend our event with other ERPSim game scenarios, more industry involvement, and regional competition. This event was an early curriculum-embedded, gamified introduction to foundational accounting concepts, data-driven decision-making, and rapid adaptability to software technologies. Our example may help other educators use the ERPSim Game for similar or other educational goals.

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Remote Durable Medical Equipment Tracking and Ulcer Pressure Staging using Blockchain and IoT: An Experiential Student Learning Exercise

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College of Business Administration
SAP Next-Gen Chapters – Digital Supply Chain, Digital Healthcare

Abstract

This presentation reviews two related projects involving tracking and correlating skin ulcer development to the utilization of medical equipment by patients in a hospital environment. The projects were implemented as capstone projects by student teams, as part of their experiential learning component. This proof of concept involved developing a Blockchain based distributed ledger using the SAP Hyperledger Fabric platform. The ledger was connected to sensors over a mobile wireless interface using MQTT protocols. Web based applications were developed to collect data from hospital personnel as sources of truth. This project represented a breakthrough across several fronts, including automating and standardizing organ progression to reduce hospital liability, providing greater transparency across health service providers and standardizing master patient indices through distributed ledgers. The project was a result of collaboration among several organizations, including the University of Illinois College of Business Administration and College of Medicine, SAP, Inc., Bosch, Inc., and Medline, Inc.

Course Using SAP Business ByDesign

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Keywords: SAP, ByDesign, Cloud, Accounting, Analytics, Data Visualization, Business Processes, Cloud ERP

Introduction

Technology today seems to become outdated as soon as it's implemented. Investing in hardware, software, system upgrades, and employee training is costly to employers. Comparing midsize to larger companies who can spread Information Technology (IT) costs to a greater number of user base, IT expenses per user are 1.6 times higher for the previous. The mid-market companies are generally at a disadvantage, falling behind in technology that is costly to upgrade and working with dispersed spreadsheets and databases that lack transparency and flexibility for collaboration and decision making. Many midsize companies don't even have the internal resources to build and maintain a secure operating environment.

The cloud, "work sharing" model is suitable for mid-market companies for its cost savings, improvement in security, infrastructure agility, superior disaster recovery abilities, and basically addressing many of the limitations of an in-house IT department. SAP Business ByDesign addresses these challenges with its commitments to help "mid-market companies to run simple: agile, transparent, cost effective and secure!"

Course Objectives

It's apparent that cloud computing plays a conspicuous technical service role in our personal and business lives, from Gmail to back-up of photos on the cloud to hosting enterprise data and applications. The goal of this course is to introduce students to analytics and a representative cloud ERP, concentrating on accounting-based functions and analyses. Students will become familiar with today's intelligent cloud ERP concepts, terminology, and practice on SAP Business ByDesign, as an end user of end-to-end processes in an organization. SAP Business ByDesign is targeted to fast-growing midsize companies and provides best practice functionalities that do not have the complexity of classic large ERP systems, which should be suitable for individuals new to the field. Students will also have hands-on experience setting up and using advanced analytics, dashboarding, and key performance indicators, for decision making. The skills built will be useful for individuals planning to take additional higher-level business, accounting, and/or analytics classes; seeking careers in the accounting / finance department of organizations; or interested in becoming a business analyst, data scientist, or consultant.

Upon successful completion of this course, students will be able to:

- define cloud computing concepts and benefits in business and analytics applications;
- explain the value of and work with data using data analytic tools, resulting in the ability to describe data mining models, forms of data, steps for extracting, cleaning and preparing data, data management, and data visualization;
- process accounting-based business processes and practice on the built-in analytics offered by SAP Business ByDesign.

Table 1 shows a high-level schedule of the 15-week semester.

Table 1 High-Level Schedule of the 15-week Semester

Week #	Topic	Source / Reference	% of Grade
1	Cloud Computing	PowerPoint: Business Processes in the Cloud with SAP Business ByDesign by Kristof Schneider	5
2	Module 1: The Value of Data	Foundation of Analytics by John W. Foreman	5
3	Module 2: Working with Data	Foundation of Analytics by John W. Foreman	5
4	Module 3: Data Typologies and Governance	Foundation of Analytics by John W. Foreman	5
5	Module 4: Business Statistics	Foundation of Analytics by John W. Foreman	5
6	Module 7: Data Visualization	Foundation of Analytics by John W. Foreman	5
7	Exam #1	Foundation of Analytics by John W. Foreman	15
8	Unit 1: Introduction to SAP Business ByDesign Unit 2: Goods and Services Value Chain	https://open.sap.com/courses/byd3/	3
9	Unit 3: Monetary Value Chain (1)	https://open.sap.com/courses/byd3/	3
10	Unit 4: Monetary Value Chain (2)	https://open.sap.com/courses/byd3/	3
11	Unit 5: Period-End Closing	https://open.sap.com/courses/byd3/	3
12	Business Process Management in the Cloud with SAP® Business ByDesignTM - Version M Master Data; Customer Relationship Management, Supply Chain Management	Case Study: Business Process Management in the Cloud with SAP Business ByDesign by Kristof Schneider	8
13	Business Process Management in the Cloud with SAP® Business ByDesignTM - Version M Project Management, Financial Management	Case Study: Business Process Management in the Cloud with SAP Business ByDesign by Kristof Schneider	8
14	Built-In Analytics in SAP Business ByDesign KPIs, Reports, Analysis of Related Processes	https://open.sap.com/courses/byd7 Case Study: Business Process Management in the Cloud with SAP Business ByDesign	6
15	Built-In Analytics in SAP Business ByDesign Data Source Preparation and Generation of KPIs Relevant to Business Needs; Third Party Integration Concepts	https://open.sap.com/courses/byd7 Case Study: Business Process Management in the Cloud with SAP Business ByDesign	6
16	Exam #2		15
			100

During the presentation, I will give a synopsis of each source. A short demonstration of the lead-to-cash (or order-to-cash) process and built-in analytics will also be illustrated on the ByDesign system. I will introduce the audience to the fictatious Silverstar Whole Corporation booklet that professors can use in their class for an end-to-end business process case with analytics on SAP Business ByBesign. As this will be the first SAP Business ByDesign course offered by an institution of SAP University Alliances, we can quickly and efficiently improve the content if more colleges / universities join to use and enhance the materials.

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Assessing Designs of SAP Embedded Curriculum across Business School Majors -Stand-alone, Hybrid, Fully-integrated

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Abstract

Since the first North America implementation of SAP into business school curriculum in 1996, business schools have used three primary designs for implementing SAP in business majors. Some programs implement SAP in stand-alone courses of individual majors. Within stand-alone courses, complete content includes discipline related modules, related transactions, and necessary enterprise activity. Others use a hybrid approach integrating some associated transactions and enterprise activity across courses in various majors. Programs may also use a fully-integrated approach. Fully-integrated curricula are dependent on the flow of transactions and data from courses in one discipline to that of another. Literature reveals that each approach carries strengths and weaknesses for achieving learning outcomes.

This research assesses the strengths and weaknesses of curriculum designs presented in various studies, to support the development of a decision matrix to aid business schools in their assessment of curriculum design. Analysis reveals that efficiencies, student levels, and dynamic changes significantly affect learning outcomes given the curriculum design.

Keywords: SAP business school curriculum, SAP integrated curriculum, SAP curriculum design

Introduction

The highly integrated enterprise-wide SAP application maintains growth in its adoption by organizations and across industries (Pellegrin-Boucher et al. 2018). Accordingly, business schools continuously assess their curriculum development to maintain relevance in preparing students. An SAP University Alliances (SAP UA) program provides schools training and educational content, such as cases and exercises, to support curriculum development efforts (*SAP University Alliances* n.d.). Moreover, Antonucci, Corbitt, Stewart, and Harris (2004) identified five stages to capture the development of integrated ERP curriculum designs, ranging from stand-alone to fully-integrated. The current study identifies the three middle stages as hybrid designs.

Also, this paper designates courses as being upstream or downstream in the integration process. Within business processes, upstream courses are positioned earlier in the process flow than downstream courses. Most often, upstream courses pass data and transactions to subsequent downstream courses that are dependent on receiving the data and transactions. The following sections discuss stand-alone, hybrid, and fully-integrated designs.

Literature Review

Some business schools choose to integrate SAP into only one course, which by default implies a stand-alone course (Seethamraju 2007). However, a stand-alone design may be due to the newness of the SAP program in the business school, a limited number of trained and experienced faculty, or SAP programs confined to individual departments or disciplines (Antonucci et al. 2004). The silo nature of stand-alone designs most likely will not fully reflect the interactive nature of SAP transactions. Nevertheless, stand-alone design may prove beneficial and provide efficiencies (Antonucci et al. 2004).

In hybrid designs, benefits exist when courses have high-level coordination at the company view, without restrictive coordination at detail transaction levels (Johnson et al. 2004). Data and transactions should be centrally developed and provide some initial preset or preformatted data and transactions based on integrated processes (Johnson et al. 2004). Subsequently, students may generate activity for use in downstream integrated courses (Johnson et al. 2004).

Fully-integrated courses strive to emulate business enterprise environments where activities may workflow and integrate across multiple departments (Atif et al. 2011). However, in the academic setting, multiple challenges could exist.

1. Students may perceive time constraints and a lack of flexibility due to links with upstream and downstream classes.
2. Student performance may be more challenging to assess due to the influence of students' performance in upstream classes.
3. Faculty may realize an increased burden to coordinate with other classes (Johnson et al. 2004).

Although a fully-integrated design contains inherent difficulties, benefits are substantial. The design positions students closer to practical, real-world experience (Atif et al. 2011).

Analysis

At the foundational level of curriculum design, course content provided by SAP UA does not require customization in order for students to execute integrated processes within their account. However, a review of the literature reveals several other criteria to consider when assessing designs for embedding SAP into curricula (Table 1). A decision matrix then identifies the criteria most applicable to curriculum design outcomes (Table 2).

Table 1 Integrated SAP Curriculum Design Criteria

Item	Criteria	Source
1	Access to SAP UA cases to build upon	(Atif et al. 2011)
2	Available trained/experienced individual as project lead	(Crosling et al. 2008)
3	Support for large face-to-face classes	(Blount et al. 2016)
4	Significant customized transactions/cases	(Antonucci et al. 2004; Blount et al. 2016)
5	Prerequisites include foundational courses for all disciplines	(Johnson et al. 2004)
6	Allows for significant budget constraints	(Hepner and Dickson 2013)
7	Support of all disciplines	(Blount et al. 2016)
8	Support of industry partners	(Atif et al. 2011)
9	Trained/experienced faculty for embedded disciplines	(Blount et al. 2016)

Table 2 Integrated SAP Curriculum Design Matrix

Criteria	Outcomes		
	Fully-integrated	Hybrid	Stand-alone
Access to SAP UA cases to build upon	X		
Available trained/experienced individual as project lead	X	X	X
Support for large face-to-face classes			X
Significant customized transactions/cases	X		
Prerequisites include foundational courses for all disciplines	X	X	X
Allows for significant budget constraints			X
Support of all disciplines	X	X	
Support of industry partners	X		
Trained/experienced faculty for embedded disciplines	X	X	X

Conclusion

Findings from this paper provide business schools a structured approach for designing SAP embedded curriculum, in response to industry demands. Organizations seek business school graduates with a keen awareness of the interactive nature of SAP and the importance of effectively executed business processes (Boyle and Strong 2006; Laosethakul et al. 2016). By using the approach presented in this paper, business schools should improve their likelihood of successfully preparing students, as a basis of selecting a well-fitted curriculum design.

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Using SAP Predictive Analytics and Popular Machine Learning Techniques to Predict Student Learning Outcomes with ERPsim

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Abstract

SAP Predictive Analytics can be used to analyze student learning outcomes, providing SAP University Alliance educators a method to enhance both teaching and research. In this presentation we utilize both SAP Predictive Analytics and a machine learning technique to identify which factors promote learning with ERPsim. Session takeaways will focus on results that provide tips on facilitating student engagement and positive team dynamics to promote stronger learning outcomes.

Keywords: SAP Predictive Analytics, Machine Learning, ERPsim, Simulation Game, Student Engagement, Team Dynamics, Learning Outcomes.

Introduction

ERPsim is a continuous-time simulation game that enables students to learn about ERP by managing their own companies in a competitive environment (Léger 2006). To better understand the learning outcomes associated with using ERPsim, a previous study explored the relationship between student engagement (SE) and team dynamics (TD) with student learning outcomes. Results indicated that stronger levels of SE and TD are positively associated with improved learning outcomes (Eder et al. 2019). This analysis expands on the prior work by examining the predictive effects of student engagement and team dynamics on learning outcomes. The purpose is to understand what factors in the team-based learning process using the ERPsim simulation game contribute to different levels of student learning outcomes.

Background

Prior research developed a validated survey instrument to measure student engagement and team dynamics, as well as levels of learning outcome complexity (Eder et al. 2019). Using measures based on student engagement (Csikszentmihalyi et al. 2014; Whitton 2011) and team dynamics (Bhagwatwar et al. 2017; Anderson 2005; Wageman 2001) literature, several factors emerged from a confirmatory factor analysis to determine levels of student engagement and team dynamics, as well as three quantifiable levels of learning outcomes: basic knowledge, applied knowledge, and problem-solving knowledge, as shown in Figure 1. The measures used to determine the outcomes were based on an adapted model based on Bloom's Taxonomy (Anderson and Krathwohl 2000; Charland et al. 2015; LaBonte-LeMoyne et al. 2017).
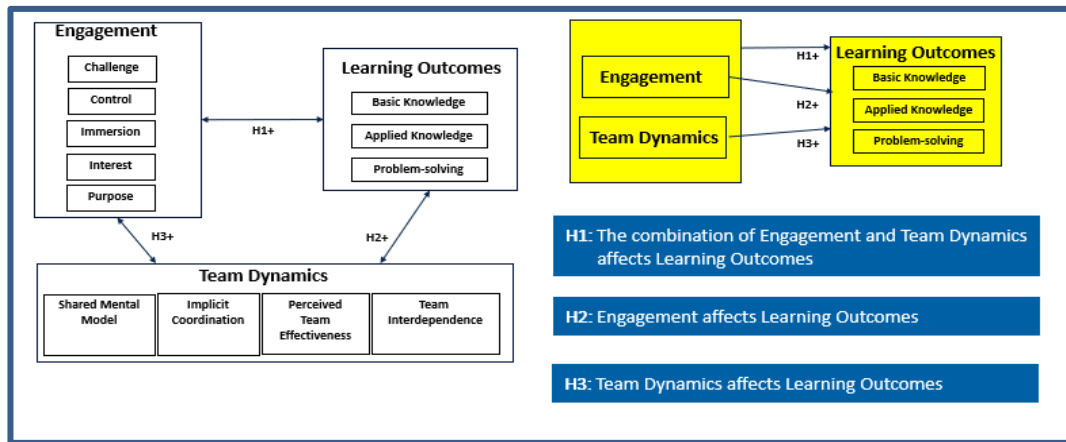
Figure 1 Research Model and Hypothesis

Research Analysis

Building upon this work, it was identified that it would be useful to develop an understand of which specific attributes are associated with different levels of learning outcome complexity. Having a predictive model could prove to be a valuable tool for faculty teaching with ERPsim to gauge whether the intended learning objectives are being realized. We began our analysis with a technique in machine learning called supervised statistical learning, in order to build a statistical model from inputs to predict outputs (James et al. 2013). Using SAP Predictive Analytics, we further analyzed the data to identify additional factors important for creating knowledge.

With supervised statistical learning, we explored some techniques to gain an insight into causation between team dynamics' and engagement's effects on learning outcomes. An initial predictive analysis using Lasso regression produced mixed results, however it did reveal several student responses from the survey that were statistically significant in their relationships to different levels of learning outcomes, as shown in Table 1. Using R, we ran a least squares regression on the training data and using that model we fit the test data. Next in model selection, Lasso was run in order to modify the model by eliminating some of the coefficients. This reduced model was run with the training data to calculate new coefficients. Finally, the test data was run on the reduced model.

Table 1 Significant Student Responses with Lasso Regression

Team Dynamics	Engagement
• My skill/talents are valued/utilized by my team • I understood the decisions made by my team members • I was a productive team member • My team performed better over time • I feel my team was very successful with their communication and interaction • This team kept getting better and better while performing the assigned tasks • It was clear from the beginning what this team had to accomplish • In our team we can rely on each other to get the job done • Members of this team are able to bring up problems and tough issues	• Our team had a fair chance of winning • I could tell what effect my actions had • Playing the game was worthwhile • I knew what I had to do to play the game successfully

To continue data exploration, SAP Predictive Analytics was used to understand the predictive relationship between student engagement attributes and team dynamics attributes and levels of learning outcomes. Several predictive models were developed and tested with the aim of being useful to maximize the benefits of using an interactive learning simulation tool like ERPsim. Early findings suggest that $60 - 75\%$ of student learning outcomes can be explained using the attributes in the model. Furthermore, the predictive confidence, or generalizability of the models generated are promising, with ranges of $85 - 96\%$. A sample of the predictive model output is shown in Figure 2.
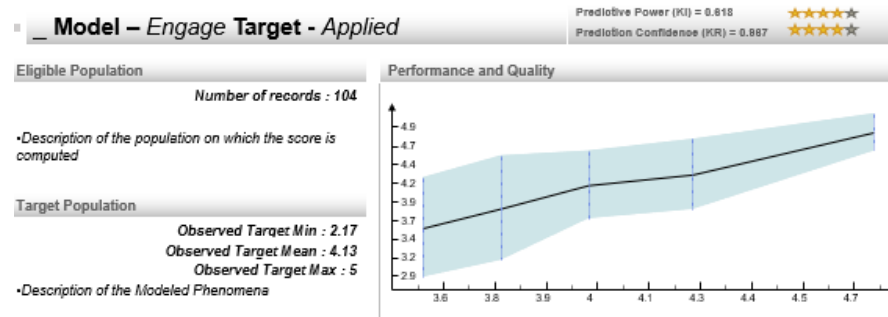
Figure 2 Sample Predictive Model Output

Additional work is currently underway to refine the models by considering the contribution of various attributes. Our presentation will summarize the findings to date, and also discuss what set of attributes would be most valuable to consider in order to build an effective predictive model that could be applied in practice by faculty seeking to improve learning outcomes. Areas for further educational applications for SAP Predictive Analytics will also be discussed.

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Developing Blockchain Curricula in Business School

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Abstract

Interest in blockchain and potential applications is growing significantly among researchers and industry practitioners. Market analysts predict around significant expansion in blockchain technology in the coming years, and that ten percent of global GDP will be attached to blockchain by 2027. The number of job postings requiring blockchain skills of applicants on a major job recruitment website tripled since last year. This research-in-progress discusses how universities can respond to the growing industry need for blockchain skill set. Since blockchain and its associated technologies most likely will disrupt many key business processes, business schools should aim to integrate basic blockchain lessons and projects in many different courses. Or, better yet, a business school could offer a "blockchain certificate" - basically, a mini-concentration of four courses about blockchain and which would be department agnostic. That is, faculty from different departments could contribute content and the certificate could be earned by students from any major (i.e. finance, accounting, supply chain, information systems). The goal would be to provide students the necessary expertise in blockchain as it relates to their major areas of study.

Keywords: Blockchain, Curriculum Design, Certificate.

Introduction

Interest in blockchain and potential applications is growing significantly among researchers and industry practitioners. Blockchain is one of the top ten technology trends (Panetta 2017). Companies invested $2.1 billion on blockchain solutions in 2018 (Rudder 2018). Market analysts predict around 43% expansion in blockchain technology every year through 2022 (Netscribes 2017), and that ten percent of global GDP will be attached to blockchain by 2027 (Carson et al. 2018). A recent survey of executives reveals that 84% of respondents believe that blockchain technology is largely scalable and will witness broad adoption (Pawczuk et al. 2018). The number of job postings requiring blockchain skills of applicants on a major job recruitment website tripled since last year (Rudder 2018).

In the recent and developing literature focusing on blockchain applications, practitioners and researchers are investigating the different applications that can adopt and benefit from blockchain technology as well as designing innovative frameworks that are built using blockchain technology to achieve goals. Such applications include biotech, medical devices, pharmaceutical, financial services, health care, consumer

products & manufacturing, public sector, media, telecommunications, food, automotive, oil, and supply chain (Pawczuk et al. 2018). The goals sought and targeted comprise less time cost vis-à-vis current systems, new sources of revenue, enhanced security, less risk, and reduced financial cost (Pawczuk et al. 2018).

This research-in-progress discusses how universities can respond to the growing industry need for blockchain skill set. Since blockchain and its associated technologies most likely will disrupt many key business processes, business schools should aim to integrate basic blockchain lessons and projects in many different courses. Or, better yet, a business school could offer a "blockchain certificate" - basically, a mini-concentration of four courses about blockchain and which would be department agnostic. That is, faculty from different departments could contribute content and the certificate could be earned by students from any major (i.e. finance, accounting, supply chain, information systems). The goal would be to provide students the necessary expertise in blockchain as it relates to their major areas of study.

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ERPsim: A Business Simulation for SAP S/4HANA

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Abstract

ERPsim is a business simulation game in which participants use a real ERP system to manage their virtual company in a competitive market. Although available and supported for SAP ERP, the 2018-2019 edition of the games has been adapted for SAP S/4HANA to fully utilize the platforms' capabilities and features. For all the games, Fiori Launchpad has been configured for standard SAP transactions as well as Fiori applications. Moreover, enabled by SAP S/4HANA platform, ERPsim supports analytics in real-time, from SAP Fiori analytical applications (SAP Smart Business) to OData services, as well as many of the self-service BI tools available on the market, including SAP Lumira, Tableau and Power BI. Additionally, all the supporting pedagogical material accompanying the games have been adapted for and updated with the Fiori interface.

Keywords: *Enterprise Resource Planning (ERP), SAP S/4HANA, ERPsim, Simulation, Games.*

Introduction

ERPsim solutions are innovative 'learning-by-doing' approaches to teaching ERP concepts. Several administrative functions in SAP are automated, so that students can focus on making business decisions. Using a mix of the ERP system's standard transactions and customized reports, students must analyze information and make business decisions to ensure the profitability of their operations. The main learning objectives of this game are: (i) to develop a hands-on understanding of the concepts underlying enterprise systems, (ii) to experience the benefits of enterprise integration, (iii) and to develop technical skills using an ERP software (i.e., SAP S/4 HANA system).

Being used by the educators for the past 15 years, the ERPsim games are positioned to showcase the evolution of technology from SAP ERP to SAP S/4HANA. The features and capabilities of the S/4 HANA platform are used in ERPsim games in 3 main ways: 1) using Fiori Launchpad for standard SAP transactions as well as Fiori applications, 2) incorporating smart tiles or KPI tiles which provide cues on possible issues, providing better visibility on operations and 3) providing flexible use of analytics featuring built-in analytical/visualization tools as well as OData services. The material

accompanying the games have been updated and transformed to provide a seamless transition for educators and their students from ERPsim based on SAP ERP to ERPsim based on S/4 HANA.

Fiori Launchpad for ERPsim

SAP Fiori launchpad is an entry point (interface) to SAP system that could be accessed via a web browser. For improved user experience, the launchpad displays a homepage with tiles, rather than a list of transactions.

In the SAP Fiori Launchpad homepage, there are three different kinds of tiles: transaction tiles, analytic tiles and status tile(s).

The tiles are grouped into process categories. For example, all sales related transactions and reports are grouped under the *Sales* category.

Transaction tiles allow accessing SAP transactions without using a truncation-code (t-code). Most of the tiles have their t-code written underneath the transaction name. Some transaction tiles show an indicator referring to whether or not an action needs to be taken. Those indicators are colour coded (green and orange) to show the urgency of the situation.

If enabled, analytic tiles allow the preview of some of the KPIs directly from the homepage. Clicking on these tiles provide in-browser analytic capabilities. Features include filtering, using pre-specified dimensions and measures, choosing different chart types or switching to tabular view, drilling up and down, and exporting to spreadsheets. This tool does not allow creating new measures (calculated fields) or changing the data source.

Although it is possible to introduce the analytics tiles from the very beginning, we suggest that teachers wait for after students have gained enough familiarity with the new Fiori interface. To do so, teachers could simply 'disable' these tiles on their SAP admin account and via transaction ZSTART.

Currently, there is one status tile (named the 'Simulation Date' tile) that shows the current state (round and step) of the simulation. This tile is not interactive and cannot be opened.

Analytic Capabilities in Real-Time

Being able to create visualizations and validate their effectiveness on data that they own and on which they can have an impact is a powerful way for learners to improve their analytical skills. To this end, ERPsim supports analytics in real-time, ranging from SAP Fiori analytical applications (SAP Smart Business) to OData services.

OData is a technology that allows access to pre-designed views for instant, real-time analytics using data directly from the SAP HANA in-memory database. This feature is available for all ERPsim systems on HANA and is compatible with many of the self-service BI tools available on the market, including SAP Lumira, Tableau and Power BI.

OData services and their compatibility with a range of BI tools enable the educators to incorporate analytics topics into their already existing syllabus based on ERPsim games or into new courses and programs that feature analytics.

Conclusion

Our recommendation to educators is to embrace the new features and capabilities that S/4 HANA platform has to offer. To do so, we suggest that educators take an incremental approach through which evolution of technology could be showcased. For example, teachers could use SAP GUI interface for the first few rounds of playing an ERPsim game and then introduce the new interface – Fiori Launchpad. Upon introducing Fiori - having analytics tiles disabled - teachers could highlight challenges of running a business by relying on tabular reports. Then, by enabling the smart tiles, the emphasis could shift to analytics and the value of real-time data analytics and visualization. In the next steps, if desired, teachers could assign a dashboard exercise using an analytical tool such as SAP Lumira via OData services.

To assist educators with their transition to use the features enabled by S/4 HANA, ERPsim Lab team has updated all the accompanying material including job aids, slides, and guides and books. Moreover, additional documentation is available on how to use OData services and on how to connect to different analytics tools. These material and guides could be found on learning portal of ERPsim website.

References

ERPsim Learning portal (2019), https://erpsim.hec.ca/en/learning

Managerial Accounting Concepts with SAP transition from ERP to S/4HANA

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Keywords: Curriculum innovation, managerial accounting, ECC, SAP S/4HANA

Introduction

Karpak, in conjunction with Wright and Henderson, introduced integration of SAP ERP into managerial accounting, in a unique way, to the best of their knowledge, to nascent managerial accounting students during academic year 2018-2019. They went through the entire procurement process, first by checking inventory levels for certain materials, and if they are not sufficient, procured additional material. As soon as the material is received into inventory, a portion of the material is issued into production, and they continued with invoice receipt and payment to the vendor. At each transaction, students not only executed the transaction, they also learned impacts of certain transactions on different business processes; they learned some information systems concepts as well as business concepts, especially managerial accounting concepts, concurrently. Authors would like to share this experience and its transformation into SAP S/4 HANA.

While a broad discussion surrounding enterprise resource planning ensued to harness the interest of all business majors, specific discussion was held with regard to the "Financial" business process, more poignantly "controlling" due to the nature of managerial accounting course at Youngstown State University. Students, lacking practical knowledge or enterprise-wide conceptualization, were engaged, intrigued and appreciative. Authors indicated that SAP ERP would be succeeded by SAP S/4HANA.

Highlighted below are the author's expectations in terms of learning outcomes and concepts learned, conveyance of SAP ERP to SAP S/4HANA and finally their pedagogy, just-in-time (JIT) learning approach.

Learning Outcomes

1. Students will demonstrate a multidisciplinary comprehension of SAP ERP key business functions and processes.
2. Students will be able to define and articulate relationships within the "controlling" module as it pertains to concepts mastered in Managerial Accounting.
3. Students will comprehend and be able to articulate the impact of certain transactions of the procurement process on inventory, on financial as well as on cost accounting and on master data of material.
4. Students will understand the differences as well as similarities of S/4 HANA to ERP
5. Students will be able to articulate for what kind of transactions Fiori Apps are more convenient and what kind of transactions still need GUI by necessity or by choice and they will implement it as needed.

Concepts Learned

Authors' class curriculum included, but was not limited to, the tracking mechanism in SAP ERP associated with the movement of goods. The main objective was to illustrate managerial accounting concepts and how it is used in practice. Students, while familiar with raw materials, work-in-process, and finished goods via classroom introduction, are usually not only unable to envision enterprise-level activities, but also proper segregation in terms of record keeping. Authors introduced key concepts such as cost centers, primary and secondary cost elements and corresponding general ledger account activity with a fictitious company—Fitter Snacker (FS). Students learned some information systems concepts as well as business concepts, particularly managerial accounting concepts on FS. Particularly beneficial was the conceptualization of organizational and master data. Students were surprised by the necessary organizational data required, such as having to define the company code, plant, etc. for various transactions. They learned that in order to do any managerial accounting transaction they need to let the ERP (SAP) system know where managerial accounting is done. Participants were provided with a bill of materials and expected to order one raw material component, receive into inventory, and subsequently issue the item into production, hereby supplementing and enforcing classroom concepts on an ERP system. Students also learned impacts of certain transactions on different business processes such as what is the impact of goods received on inventory and on accounting; which accounts are posted automatically, for what kind of accounts are there open item management. Both students and the instructors enjoyed the power of experiential learning provided by the ERP system.

Transition to SAP S/4 HANA

The similar approach is followed for S/4 HANA, introducing cost centers, primary cost elements, secondary cost elements and performing procurement and production business processes. Yet S/4 HANA is similar as well as different than ERP. For vendor master data we needed to introduce business partner approach (SAP learning content, SAP S/4 HANA, procure to pay processing, accessed May 15, 2019). FI vendor and Supplier are introduced as a business partner. A big difference exists in accounting; now there are account types of balance sheet accounts, non-operating expense or income, primary cost and revenue, and secondary costs. Authors recognize that general ledger (G/L) accounts are now available for secondary cost elements in addition to primary cost elements. Universal Journal---ACDOCA table (SAP learning content, SAP S/4 HANA, accounting, accessed May 15, 2019) are introduced.

S4 HANA can be used with GUI or via Fiori apps. Authors explain what kind of transactions are more convenient with Fiori Apps and which still need GUI by necessity.

Authors' pedagogy

The idea of introducing an innovation into managerial accounting classes started with Wright. In fall 2018 Wright and Karpak came together to develop joint material. The initial idea was going through the entire procurement process. They practiced together prior to presenting to the students. From this meeting they came to the conclusion that they needed to narrow the scope and only concentrate on managerial accounting concepts. Karpak originally presented while Wright assisted students. Students paired; classes went very smooth. SAP was introduced in the section of managerial accounting this instructor teaches.

In spring 2019, Wright was very confident and took the lead by teaching it in her three sections. Again, students were paired. After every session students' feedback was collected for possible improvement. When it was the turn to teach the sections taught by Henderson, Wright was ready to introduce to Henderson's classes as well. Pedagogical improvements will be further delineated during the presentation.

Conclusion

The introduction to SAP/ERP and S/4 HANA as it relates to managerial accounting and general exposure to enterprise-wide planning has been an incredibly enjoyable and well received experience for authors and students. As the authors have developed a curriculum for SAP S/4 HANA they are excited to share their work with the SAP alliance community. Authors still believe that students need to learn processing transactions with GUI. Since most of the current companies have ECC, they need human capital who are

knowledgeable to process transactions on ECC. Even with SAP S/4 HANA on-premise users need people who understand processing transactions via GUI. Authors thank the anonymous reviewers for their feedback/suggestions which improved the manuscript greatly; they are looking forward to implementation of the material they developed for S/4 HANA in fall 2019 and hope to publish it in a learning pedagogy journal.

References

SAP learning content, SAP S/4 HANA, procure to pay processing, accessed May 15, 2019 https://saplearninghub.plateau.com/icontent_e/CUSTOM_eu/sap/self-managed/elearning/TS410e_EN_Col09/lgroup7/default.htm

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S/4HANA: Introduction, Configuration and Fiori

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Abstract

The proposed contribution will outline the progress of implementing SAP S/4 HANA in the current curriculum for both the University of Arkansas and Missouri University of Science and Technology. The focus at the University of Arkansas has been in the ERP Minor (15 hours) which contains 9 hours focused on ERP Fundamentals, ERP Configuration and ERP Development. The main course impact has been in the 2nd course (ERP Configuration) where the curriculum will completely shift from ECC 6.0 to S/4 HANA beginning in Fall, 2019. Part of this shift has been the design of a Fiori Launchpad in order to outline the units used in the configuration of the FI/MM modules and the SD module.

The focus at Missouri University of Science and Technology is on developing teaching material for S/4HANA, BASIS for S/4HANA, BW on HANA, and HANA Appliance in the areas of ERP core business process, analytics, and mobile app development. Specifically, a new multi-company code introduction to ERP case and its teaching materials in S/4HANA have been completed, teaching materials have been converted from BW to BW on HANA, new data warehouse design and implementation case and materials have been completed for HANA Appliance (standalone data warehouse), several mobile app development teaching cases were developed to pull data from S/4HANA, BW on HANA, and HANA Appliance. ERP system administration and enterprise security and supply chain case and teaching materials using S/4HANA are being developed.

Keywords: S/4HANA, Configuration, Fiori Launchpad, Fiori Tile Creation.

Content

The following is a bullet pointed list of what we may cover.

- Configuration of FI and MM Module (including teaching material)
- Configuration of SD Module (including teaching material)
- Fiori Launchpad Unit Layout for Configuration
- Fiori Tutorials for personalization, tile creation, and administrative assignment
- University of Arkansas ERP curriculum and extent of HANA usage

- Multi-company code Introduction to ERP in FI, MM, SD, and PP modules and analytics using oData service using the free ERPSim Water Distribution Case (including teaching case, PowerPoint slide sets, lab exercises, test bank, semester project)
- Data Warehouse design and implementation using HANA Appliance (teaching materials, test bank)
- Dashboard, scorecard, and mobile app cases in visualizations and mobile app development (teaching materials, data files, test bank, and project)
- Missouri S&T's ERP, mobile app, BI, and Supply Chain curriculum and extent of HANA usage.