Redesigning an Information Systems Course for MBA Students

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Master of Business Administration (MBA) students positively evaluate an Information Systems (IS) course inclusive of a real-world business project compared to one that does not. Blooms' Digital Taxonomy was used to redesign learning concepts covered in an MBA IS course by shifting from "Remembering" to "Applying" as the best teaching method for adult business professionals. A real-world group business project included in an accelerated online MBA program improved online evaluations; integrating IS concepts embedded within actual business processes resulted in a positive perception of the Management Information Systems (MIS) course. Our findings align well with Knowles' theory of Andragogy concerning the learning motivation of adult students. MBA IS Instructors must use experiential learning methods in a problem-solving context so that students understand the "Why" of the impact of essential IS business processes. This knowledge has immediate and lasting effects on student careers.

Keywords: IS MBA, Knowles' Theory of Andragogy, Blooms' Digital Taxonomy, Experiential Learning, America Disabilities Act, ADA

INTRODUCTION

Business students have adverse stereotypes about the Information System (IS) discipline (Akbulut-Bailey, 2013) and difficulty grasping fundamental Information System concepts. This difficulty exists for several reasons. MBA IS courses are usually survey type courses, which cover a broad area of Information Technology (IT) topics without going in-depth in any of them. Students face challenges to remember multiple confusing concepts without understanding differences since there is no real depth of coverage of such ideas. Information System concepts and Information Technology change very fast, as this is the nature of IS/IT. Students and instructors often underestimate the rapidity of change, the lag in textbook publishing, and the need to use more current information to understand current business processes. Staying updated on IT/IS topics is a challenge for both faculty and students, which adds more pressure to prepare for class exams (Dadashzadeh, 2018).

MIS faculty who teach IS courses to MBA students are continually looking for new, interactive ways to keep these students interested in the subject and recognize the subject's value while progressing toward

their business degree. MIS instructors differ from other faculty in that both concepts and technology change dynamically regularly. While some concepts remain the same, new technologies emerge, how and when technologies are applied may change, and the technology's need may go away. Therefore, teaching Management Information Systems (MIS) courses to MBA business students should be more than just lecture-oriented classes. Faculty should consider active learning approaches to integrate the lectures with hands-on activities and student participation in group projects (Chen & Holsapple, 2014), with faculty-student collaborations explaining the concepts and their implications to business practices.

This study focuses on understanding if real-life projects enhance" teaching effectiveness" in an information systems course for MBA students. Two different teaching approaches to an online accelerated MBA program are used and assessed. The next section of this paper includes a literature review on various teaching and testing methods used in information systems courses in existing MBA programs. Later, we will discuss different learning and assessment models (Andragogy and Bloom's Digital Taxonomy), explaining what motivates adult learners and how learning becomes enhanced by acquiring various IT/IS skillsets. The methodology section will discuss the study, the two other teaching methods, and the research findings. The paper will conclude with a discussion on what adds value to an online Information Systems course taught to MBA students.

WHAT TEACHING AND TESTING METHODS TO USE FOR AN ONLINE MBA?

The value-added inclusion of IS courses to an MBA program has been the focus of many research articles over the years. BeachBoard and Aytes (2011) identified the need for an IT course that should focus on the IT domain's strengths and values that complement an MBA student's education. The authors tested the perceptions of MBA students before and after taking an MIS class as part of their curriculum. Before taking the class, students' perceptions were more towards the negative side, reflecting the well-known adverse perception of business students toward MIS courses. The authors redesigned the IT course content to include a consulting project that allowed students to use experience-based learning as a tool to see the connection between IT and the efficiency and integration of business operations. This course redesign made a positive change in the students' perception after the class was over. Students saw the value of IT concepts in preparation for them to become business executives in the future.

Many MBA students have acquired some IS-related background from their undergraduate studies or work-related experiences over the years, resulting in MIS concepts being integrated differently into MBA curriculums. MBA programs recognize the need to update their curricula with teachable skills to satisfy forthcoming MBA students' learning goals. Such students are looking for real-world experience (Hobson, 2019), where students see technology implementations in a practical application in a business setting (Levy and Hadar, 2010).

While research conducted by Thouin et al. (2018) suggests that students learn from each other while working on group projects with their peers, accelerated online courses may not provide adequate time to include such activities in a fast-tracked format. Research on accelerated online MBA courses, which are primarily 5 to 8-week classes', done by Favor and Kulp (2015), shows that adult learners prefer to work alone rather than with other peers in groups. Despite students' perception that working in groups enhances their learning on the subject matter, their preference is to work alone and pace themselves to meet assignment deadlines. Adult learners in accelerated degree programs get frustrated by waiting on others to communicate on the projects, align performance expectations on the tasks, manage, and assign workload within groups. While it is essential to have several approaches to motivating learning in an accelerated online environment, learning from each other as much as learning from the faculty, group work may not be suitable for such learners.

Teaching an online-accelerated MBA class is a much different teaching experience than a regular MIS program in a traditional 16-week full semester setting. Faculty who teach in shorter, more compressed teaching schedules must adjust their teaching goals, lectures, and testing materials to correctly assess the knowledge obtained by such adult learners. In his research, Fan (2009) proposes that a case study approach allows MBA students to understand MIS concepts that better apply what they have learned to practice. Such

a teaching strategy motivates MBA students to improve their analytical and problem-solving skills (Fry, 2008) in managing information systems resources in a company.

Duesing and his colleagues (2016) used a case study approach to assess the learning objectives based on Bloom's taxonomy in an online MBA operations management course. The results of this study support Fan's (2009) recommendation that online MBA students learn by evaluating and appropriately using the resources that a company has on hand. Faculty who teach in such programs (online MBAs) need to be aware of their learning approach and find creative ways to introduce such an audience. Problem-solving, critical reasoning, and quantitative tools should be included in course objectives to improve student performance in an online MBA course.

A quasi-experiment study used two different instructional approaches related to online discussions for an intensive online MBA program. The Socratic questions used on the experimental group treatment lead students to have a better critical thinking approach and more in-depth learning, which improved the online learning environment for that group of students (Strang, 2011). Group comparison analysis, such as Anova and Mancova, suggested that academic quality was much higher by applying Socratic questioning conversation theory. Research indicates that online MBA students learn better when challenged to speak up and participate in an online discussion initiated by faculty. The downside of such methods is that faculty need to customize and participate in online discussions, which may be a time-consuming approach if they teach large sections of online MBA classes.

LEARNING AND ASSESSMENT THEORIES FOR ADULT LEARNERS

Knowles (1988) pioneered Andragogy, the theory of adult learning, whereby adults base their understanding of course materials on integrating their life experiences. Such life experiences influence motivation and how an adult learns. Andragogy assumes adult learners are motivated to learn because 1. the need to know; 2. the self-concept that they are responsible for their own life and decisions; 3. they have life experiences; 4. readiness to learn as they mature in life; 5. orientation to learning towards real-life situations; and 6. motivation for a better life (Knowles et al., 2005).

Online courses should match the course learning objectives, engage students in the learning process, and include various precise assessments. Adult learners can leverage their prior expertise and apply them to real-life projects. Such online learning design bits of advice by Andragogy align very well with Achievement Goal Orientation studies, which suggest that adult learners are motivated to seek and apply knowledge and consider education as a tool to reach the full potential in life. Tanish (2016) mentions that online courses designed with Andragogy principles are particularly useful for online classes populated by adult learners. Therefore, MBA students should actively engage with the faculty to accomplish their learning goals, manage timetables to deliver projects, and become challenged by more complex tasks (Lin and Wang, 2018).

Another school of thought in learning and assessment is Bloom's Taxonomy. Bloom's Taxonomy is a model that "classifies educational learning objectives into levels of complexity and specificity" (Wikipedia). Educators have used Bloom" s Taxonomy in assessment of students' learning for over 50 years. The model adapts to the online learning environment (Chyung, 2003), including new skill sets and revised categories (Wedlock & Growe, 2017). Bloom's Digital Taxonomy is an enhanced model that integrates different cognitive skills introduced in Bloom's Taxonomy and the usage of Web 2.0 and technology as part of the learning experience that students receive. The updated categories suggested by Churches (2009) are a better fit for online education learning goals since such online classes include critical thinking and a broad spectrum of communication tools and technical skills.

Derived from past studies are the hypotheses this study is trying to assess. Teaching methods using real-life projects will enhance teaching effectiveness. We measured teaching effectiveness in two ways: a grade on the quiz/tests and the students' subjective opinions measured at the end of the course. This paper tests two hypotheses:

H1A: Students in a class that employs real-life projects will perform better in learning and understanding than other courses without such projects.

H1B: Students' perception of information systems will improve in a class with real-life projects compared to other courses without such projects.

METHODOLOGY

The Participants

The participants of this study are MBA students in an accelerated online MBA program taking an Information Systems class in a five-week online semester. A total of 103 students were in the control group and took the course in Fall 2018, Spring 2019, and Summer 2019. The experimental group had 93 students who took the Information Systems course in Fall 2019. Students in both groups took a voluntary survey before the class started where they shared information about their undergraduate degree; Business work experience, IT experience, the number of courses taken in the MBA program, and years of work experience. Table 1 is a summary of the MBA student's demographics.

As Table 1 indicates, MBA students have a diverse business or other educational and work experience background. Their knowledge of Information Systems or Information Technology concepts is minimal. Most of the students have been working in their industry for more than seven years and are taking an IS course early in their MBA education. Student expectations for the class may differ based on different learning motivations suggested by the Theory of Andragogy.

TABLE 1
DEMOGRAPHIC DATA ON THE MBA STUDENTS WHO TAKE THE IS COURSE IN THE ACCELERATED ONLINE PROGRAM

Education Background	Without Project (Control Group)	With Project (Experimental Group)
Business degree	44%	42%
IT related degree	0%	6%
Other Degrees	56%	52%
Work experience		
Business	64%	55%
Never worked	3%	8%
IT experience	6%	0%
Other (teacher, engineer)	28%	37%
Years of experience in the industry		
less than three years	11%	12%
3- 7 years	17%	34%
More than seven years	72%	54%
MBA classes completed		
1-3 classes	44%	31%
3-6 classes	33%	52%
More than six classes	22%	17%

The Study

This exploratory study is about a real-life project as the experimental treatment during a 5-week MBA IS course.

Control Group

Students in the control group took the Information Systems course in three consecutive semesters (Fall 2018, Spring 2019, and Summer 2019) with the same team of instructors. The Information Systems course included lectures, quizzes (20 Multiple Choice Questions provided in the test bank evaluated student understanding of textbook chapters), and discussions on these chapters. A discussion grade reflected a student's overall knowledge of IS concepts and their ability to apply them to real-world situations. The multiple-choice questions included in the chapter quizzes test definitions or understanding of specific IS/IT concepts. These items belong to the "Remembering" level on Bloom's taxonomy, where they recall, memorize, and list the concepts discussed in the chapters. The course's discussion component required students to share how they implemented each chapter's critical concepts in their professional and personal life and how such ideas improved their productivity.

Experimental Group

Students in the experimental group took the Information Systems course in Fall 2019 using the same team of instructors as the control group. Quiz questions and discussions were reduced by fifty percent to provide time for a real-world project. The group project required students to implement a real-life project affecting our city using knowledge gained from course materials. Several project options were available, like a new soccer stadium, a hospital in a remote area, and a local university with several campuses. Students were allowed to choose one of the scenarios and help the local organization with the IT/IS solutions appropriate for that organization. Faculty assessed students based on the integration and understanding of course materials and the relevant business context. Faculty also considered the information systems domain context and how it aligned with Bloom's Taxonomy's "Apply" level. Faculty looked for technical solutions that improved database architecture, networking technologies, security measures, and other technological problems. Other recommendations might be Business based. Students would reflect an understanding of how technology supports business strategy. The course's underlying objective was for students to understand that information systems support an organization's overall business strategy and not the other way around.

Course and professor evaluations were analyzed for both groups and compared to see if MBA student perceptions of MIS changed after they participated in a real-world IS project. Course surveys for both groups had the same questions. Students could make suggestions on what else instructors could improve to help students understand these course materials and what else they might do differently to increase their learning success.

Analysis and Results of the Study

As shown in Table 1, the descriptive statistics show that students are mainly Business (approximately 40%) or other majors like engineering, healthcare, and education (about 60%). Interestingly, we did not have students with Information Systems and Information Technology majors in this online program. As predicted by the Andragogy framework, the graduate students have life and work experience and are looking for knowledge relevant to their career goals. As the course's pre-survey shows (Table 1), most students have more than seven years of work experience, suggesting they decided to go back to school to advance their knowledge and career. Most are in the beginning phase of their MBA program.

The first research hypothesis (H1A) of this study is related to the students' performance if they included a real-life project. Table 2 shows the student's combined total score, including all semesters (Fall 2018, Spring 2019, Summer 2019, and Fall 2019) with and without projects. We created two datasets based on the assessment included in those four semesters. The dataset "No project" included the following semesters: Fall 2018, Spring 2019, and Summer 2019, where we had 103 students scores—only students completing the course count. The dataset "With Project" included the assessed the Fall 2019 semester, where only 93 students' scores are in the analysis. Table 2 reflects the group statistics.

TABLE 2
GROUP STATISTICS FOR MBA STUDENTS' GRADES WITHOUT AND WITH REAL-LIFE PROJECTS

	Project	N	Mean	Std. Deviation	Std. Error Mean
MBA Grades	No Project	103	865.52	140.30	13.82
	With project	93	915.60	97.30	10.08

The normality test for both data is negatively skewed. A t-test is not appropriate. Therefore, a nonparametric test, the Mann-Whitney U test, is used to determine any significant difference between the course performance of the MBA students if they work in a group and real-life project. Based on the result of the nonparametric test shown in Table 3, we can say that statistically, the course score in the group "With Project" was significantly higher than the group "No Project" ($U = 196$, $p = .000$).

TABLE 3
INDEPENDENT-SAMPLES MANN-WHITNEY U TEST SUMMARY

Total N	196
Mann-Whitney U	6700.50
Wilcoxon W	11071.50
Test Statistic	6700.50
Standard Error	396.54
Standardized Test Statistic	4.82
Asymptotic Sig.(2-sided test)	0.000

Although the nonparametric test concluded that students did better in a course that included a real-life project, the effect size calculations suggest the opposite. The computed effect size is 0.11, based on Cohen's recommendations; 0.11 is a small or insignificant value. Cohen's effect size calculations advise that only 11% of the course variance's total score is explained by having a course assessment project. Therefore, we conclude that we reject the hypothesis H1A. MBA students in an accelerated online program will not get a better or lower score when a real-life project is a part of an Information Systems course or assessment.

The second hypothesis H1B of this study was to identify what expectations students have on an IS course as part of their MBA curriculum. Furthermore, we want to discover if there is any difference if adult learners will learn better by applying the knowledge obtained in this class by working on a real-life business project.

To address this second hypothesis (H1B), we collected students' expectations about the IS course in a pre-survey questionnaire and a post-survey, which is part of the course and instructor evaluation. Part of the pre-course survey was an open-ended question: "What are your expectations about the Introduction to MIS course? What do you expect to learn, and in what format?" Students' thought in terms of "having a stronger grasp of IS concepts," "leveraging IS at work, especially from the management perspective,"; "I want to understand better how IT is implemented in business without being an IT expert," etc. A second follow-up question asked what the best format to learn or use in a course is. Students provided very constructive feedback by sharing they know from: "the instructor and peers"; "... love to receive constructive feedback and always looking for ways to improve..."; "being in similar format from previous MBA courses...", etc.

FIGURE 1
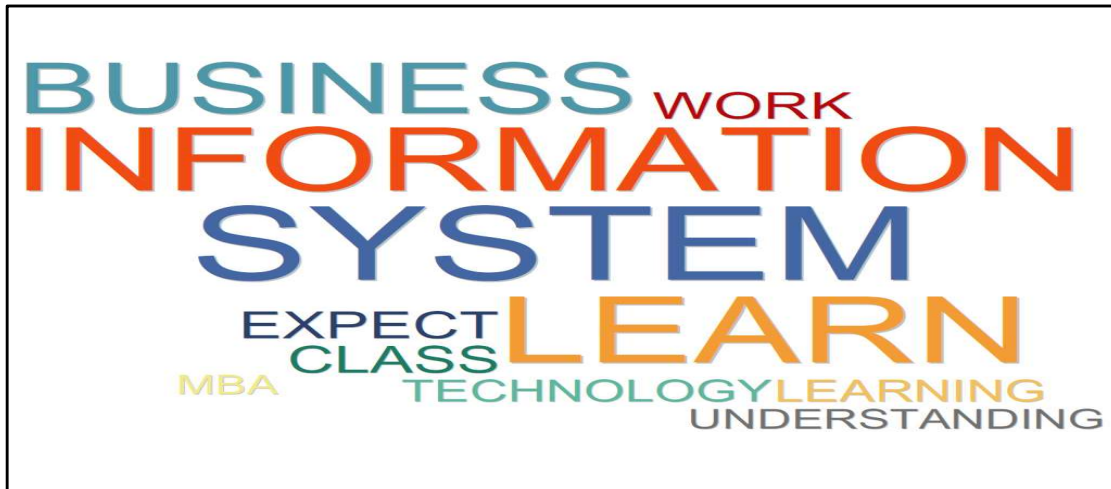**PRE-SURVEY EXPECTATIONS COMMON WORDS OF MBA STUDENTS**

TABLE 4
PRE-SURVEY EXPECTATIONS OF MBA STUDENTS

KEYWORDS	FREQUENCY	% TOTAL	% of CASES
SYSTEM	41	1.71%	42.86%
LEARN	37	1.55%	45.71%
INFORMATION	35	1.46%	44.29%
BUSINESS	28	1.17%	34.29%
EXPECT	15	0.63%	18.57%
CLASS	14	0.59%	20.00%
WORK	14	0.59%	20.00%
LEARNING	12	0.50%	17.14%
TECHNOLOGY	12	0.50%	15.71%
UNDERSTANDING	11	0.46%	14.29%

Pre-survey expectations of the written responses of seventy MBA Students were analyzed using WORDSTAT 8.07. Students responded to a question reflecting upon their hopes for the upcoming course. Figure 1 is a visual representation of the ten most frequently used words based on relative use and proximity of phrasing. Table 4 lists word frequencies from high to low. MBA students anticipated being in an MBA course focused on learning about information systems and technology. Their interest identifies an expectation to learn in the business context but also to understand IS technology. Students used the word "Business" to expect information systems to be used and discussed in a business context. There is also an association with the word "Work," suggesting students sought useful information they could use at their places of work.

Figure 2 shows students' most common repeatable phrases in their comments as to what they expect in the upcoming course. WORDSTAT 8.07 searches for and identifies common words used by students as part of their writing style. Students expressed an expectation to learn, hope to learn, and were excited to learn at the beginning of the course. The word "Business" is associated and used with the name "World," suggesting that these MBA students were seeking additional information about business-related information technology within their sphere of influence at their places of work.

FIGURE 2
PRE-SURVEY COMMON PHRASES FOR MBA STUDENTS

MBA students were most concerned and stressed about quizzes and discussion boards. They felt time pressure to complete course work and desired timely and relevant feedback from quizzes and discussion boards. Several American Disabilities Act (ADA) students felt especially pressured to learn promptly enough to take examinations. One student even went so far as to state, "this is the first college course I have been asked to read a textbook from beginning to end." They did like the video lectures but were overwhelmed with the amount of reading material.

FIGURE 3
**END OF COURSE COMMENTS FOR MBA STUDENTS WITHOUT BUSINESS PROJECT**
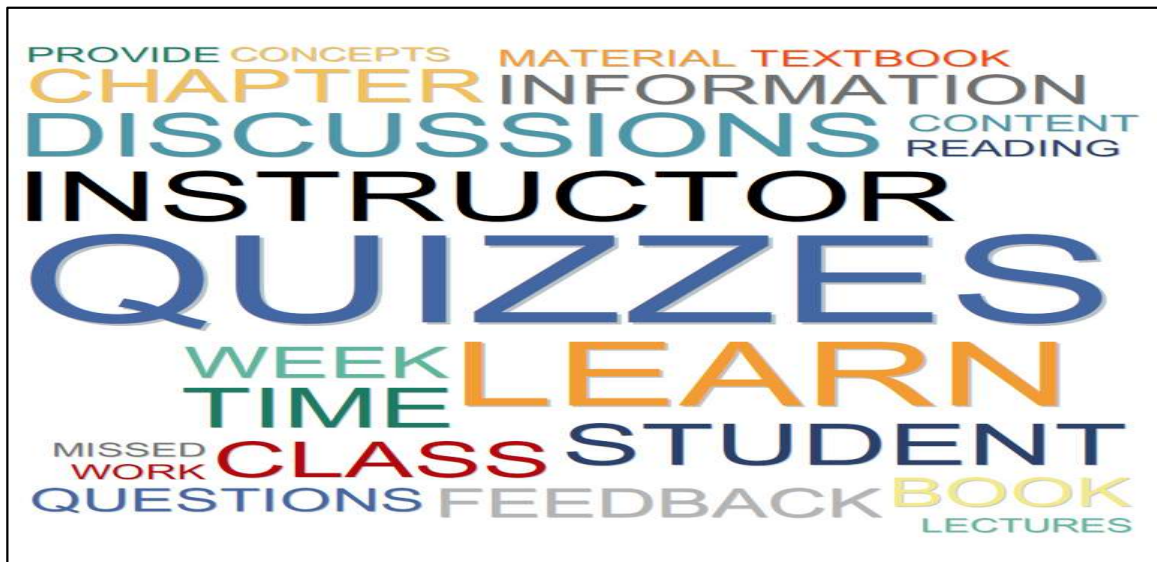
TABLE 5
FREQUENCY OF KEYWORDS FOR MBA STUDENTS WITHOUT BUSINESS PROJECTS

KEYWORDS	FREQUENCY	% SHOWN	% PROCESSED	% TOTAL	NO. CASES	% CASES	TF • IDF
QUIZZES	65	12.97%	3.17%	1.24%	54	28.57%	35.4
LEARN	48	9.58%	2.34%	0.92%	34	17.99%	35.8
INSTRUCTOR	37	7.39%	1.81%	0.71%	29	15.34%	30.1
DISCUSSIONS	32	6.39%	1.56%	0.61%	28	14.81%	26.5
TIME	31	6.19%	1.51%	0.59%	26	13.76%	26.7

STUDENT	31	6.19%	1.51%	0.59%	24	12.70%	27.8
CLASS	27	5.39%	1.32%	0.52%	22	11.64%	25.2
CHAPTER	25	4.99%	1.22%	0.48%	23	12.17%	22.9
WEEK	23	4.59%	1.12%	0.44%	19	10.05%	22.9
INFORMATION	22	4.39%	1.07%	0.42%	20	10.58%	21.5
FEEDBACK	21	4.19%	1.02%	0.40%	17	8.99%	22.0
BOOK	21	4.19%	1.02%	0.40%	15	7.94%	23.1
QUESTIONS	17	3.39%	0.83%	0.32%	15	7.94%	18.7
MATERIAL	13	2.59%	0.63%	0.25%	12	6.35%	15.6
READING	12	2.40%	0.59%	0.23%	12	6.35%	14.4
TEXTBOOK	12	2.40%	0.59%	0.23%	11	5.82%	14.8
CONTENT	12	2.40%	0.59%	0.23%	11	5.82%	14.8
WORK	11	2.20%	0.54%	0.21%	11	5.82%	13.6
PROVIDE	11	2.20%	0.54%	0.21%	10	5.29%	14.0
MISSED	10	2.00%	0.49%	0.19%	10	5.29%	12.8
LECTURES	10	2.00%	0.49%	0.19%	9	4.76%	13.2
CONCEPTS	10	2.00%	0.49%	0.19%	8	4.23%	13.7

As seen in Figure 4, Common phrases found in the responses from students who did not have a real-world business project were concerned about testing. They were "anxious and paranoid," did not like the lock-down browser, focus on the textbook, and found the quizzes and discussions to be a waste of time. The class size is too small ferrets out these differences, but they seem to exist. MBA students did not like Power-Point slides. Students with ADA appeared to have a particular problem with this kind of course structure.

FIGURE 4
END OF COURSE COMMON PHRASES FOR MBA STUDENTS WITHOUT BUSINESS PROJECT
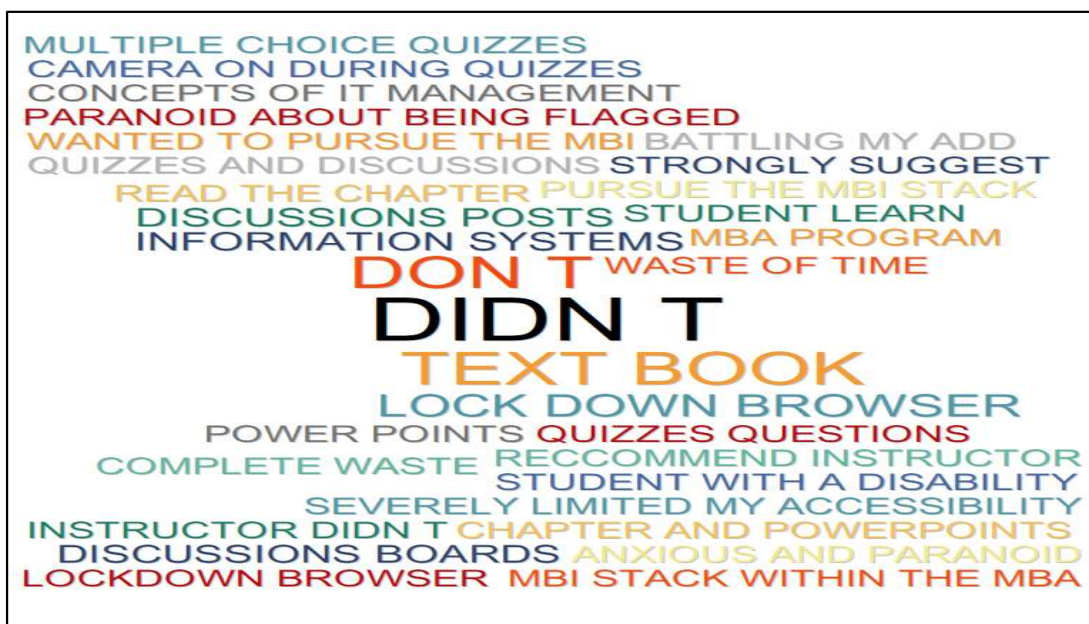
The second group of MBA students worked on a real-world business project. Figure 5 and Table 6 show the responses of 144 students. Student responses in this group were more focused and complimentary

than the group without a business project. References to quizzes and discussion boards were positive, and class time more effective than the group without a class project. Table 6 found the word "Group," the most common phrase related word suggesting MBA students liked the project and were complimentary of it. Its proximity to the name "Project" and the frequency of the expression "helpful" suggest that students wanted this kind of course structure. Students found the inclusion of a course project enhanced class time, improved lectures' effectiveness, and made quizzes seem more appropriate.

Figure 5 shows the most commonly used phrases used by students with a real-world project in their course. "Group Project" is vital along with do not "change a thing" and "Instructor was perfect." Differences exist between students who worked on a real-world-class project instead of those who did not. Student evaluations of the instructor were more positive, as were comments about quizzes and discussion boards. Students in both courses liked the recorded lectures, but using power points within the recorded lectures for MBA students in a real-world project course was more positive. Therefore, we conclude that we could support the H1B hypothesis that students' perceptions would improve if an IS class will include a real-life project.

FIGURE 5
**END OF COURSE COMMON PHRASES FOR MBA STUDENTS WITH A**
BUSINESS PROJECT

TABLE 6
FREQUENCY OF KEYWORDS FOR MBA STUDENTS WITH A BUSINESS PROJECT

KEYWORDS	FREQUENCY	% SHOWN	% PROCESSED	% TOTAL	NO. CASES	% CASES	TF • IDF
GROUP	43	13.35%	3.25%	1.29%	29	20.28%	29.8
PROJECT	36	11.18%	2.72%	1.08%	24	16.78%	27.9
TIME	25	7.76%	1.89%	0.75%	21	14.69%	20.8
CLASS	23	7.14%	1.74%	0.69%	20	13.99%	19.6
LECTURE	23	7.14%	1.74%	0.69%	20	13.99%	19.6
VIDEOS	19	5.90%	1.43%	0.57%	18	12.59%	17.1
WEEK	19	5.90%	1.43%	0.57%	16	11.19%	18.1
WORK	19	5.90%	1.43%	0.57%	12	8.39%	20.4
STUDENTS	18	5.59%	1.36%	0.54%	15	10.49%	17.6

HELPFUL	17	5.28%	1.28%	0.51%	16	11.19%	16.2
INSTRUCTOR	15	4.66%	1.13%	0.45%	15	10.49%	14.7
DISCUSSION	12	3.73%	0.91%	0.36%	12	8.39%	12.9
INFORMATION	11	3.42%	0.83%	0.33%	9	6.29%	13.2
ONLINE	11	3.42%	0.83%	0.33%	10	6.99%	12.7
RECORDED	11	3.42%	0.83%	0.33%	10	6.99%	12.7
GRADE	10	3.11%	0.75%	0.30%	7	4.90%	13.1
QUIZZES	10	3.11%	0.75%	0.30%	8	5.59%	12.5

FIGURE 6
COMMONLY USED PHRASES OF MBA STUDENTS WITH A BUSINESS PROJECT
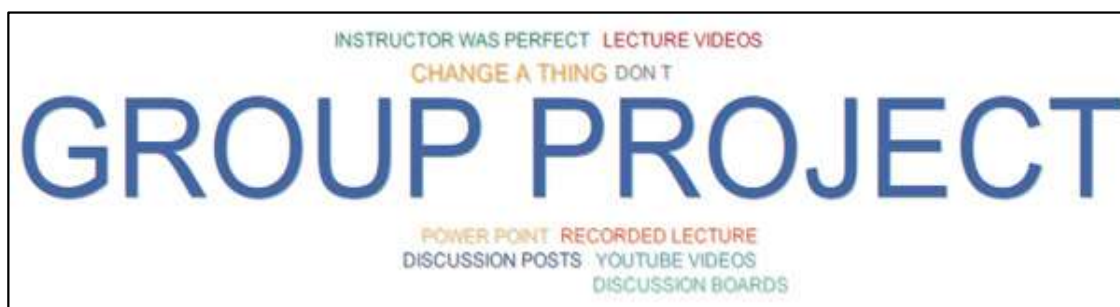
CONCLUSION

MBA IS Instructors must use experiential learning methods in a problem-solving context so that students understand the "Why" of the impact of IS business processes and that this knowledge has immediate and lasting effects in their careers. Our findings aligned well with Knowles' Theory of Andragogy concerning the learning motivation of adult students. In a real-world group business project in an online MBA program, project participants could better integrate and use information system concepts embedded within actual business processes. The inclusive nature of a real-world project in an IS Course resulted in a more positive perception of MIS and student realizations that successful IS implementations have real-world benefits to the organization. Text mining techniques used to evaluate student course comments provided before and after the course shed light on MBA students' perceptions of how IS concepts add value to their education and careers. By reaffirming the perceived value of an IS course by MBA students, business students overcame any negative stereotypes of the IS discipline (Akbulut-Bailey, 2013). The inclusion of a real-world project in an information system MBA may overcome the traditional difficult time students had in grasping the IS concepts (Dadashzadeh, 2018) and accelerated the learning of IS concepts effectively and efficiently (Chen & Holsapple, 2014).

MBA programs are one of the most well-attended graduate programs. The online format allows the students to take classes when they can and fit them into their busy lives. While faculty and business leaders acknowledge the importance of understanding IS as the backbone of the modern organization, this perception may differ for the typical MBA student. Such students need to see that the inclusion of an IS course to their MBA degree adds value to their education and is relevant to their everyday work experience. We confirm that the misalignment between student educational goals and industry perceptions of needed skills is not so much a mental block, but how such IS knowledge relates to work history and future advancement opportunities for career MBA students. It is essential to appreciate the student's background or lack of education in IS work experience to better design and chose class projects that are challenging, relevant, and engaging.

From the MBA IS curriculum perspective, businesses benefit from IS courses that ensure managers and employees understand the importance of information systems. The importance of IS in the MBA curriculum has not always been positive. As Shore and Briggs (2007) pointed out, many, if not most, business schools are changing perceptions towards IS courses; more schools have dropped stand-alone IS courses from their core program of MBA. However, this study showed the need for an IS course: most students expected to learn how IS is used in the business world but were surprised and overwhelmed with technical knowledge about IS systems needed to operate a modern organization effectively. For the most part, IS is new information, or at least a unique perspective, for MBA students. An IS course counters the prevailing view that the IS function is too technical for regular managers, and it is safe to leave it to the professionals. However, with concrete examples in a business project, student perceptions change to the positive side. Now they understand the importance of the IS functions in business practices and how they, even though we're not professionals, can help businesses and organizations improve and make faster decisions.

LIMITATIONS AND NEXT STEP

We gathered data through the course evaluations from one particular Introduction to an Information System course. Students' comments seem mixed with complaints about course formats, availability of materials, quizzes, and applicability to work, which are not necessarily specific to this IS course. More focused and detailed questionnaires about what students expect and perceive information system functions should be developed and used to update existing data. This research didn't collect feedback if an MIS class should be part of the MBA curricula. Further research should address whether MBA students will perceive a traditional MIS or an Information Systems Analytics (a blend of critical concepts in MIS and software tools like R programming for data visualization) course as a better curriculum. Also, the number of respondents is limited as some course evaluations were opted out. Opportunities to examine larger sample sizes may deepen our understanding of what students are experiencing.

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