Mapping information literacy using the Business Research Competencies

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Abstract

Purpose – Librarians in higher education have adopted curriculum mapping in an effort to determine where effective information literacy instruction can help fill gaps in the curriculum and prepare students for both coursework and future research demands. While curriculum mapping has been used widely across academia, few studies have considered business curriculum and the development of information literacy instruction. This paper aims to provide an overview of the current landscape of curriculum mapping across business courses at two institutions and a replicable methodology for other institutions.

Design/methodology/approach – In this paper, the authors will examine two case studies at large research universities that evaluate curriculum mapping against the BRASS Business Research Competencies at the undergraduate and the graduate business levels.

Findings – This study found that the Business Research Competencies are a valid method to evaluate in both case studies. Curriculum mapping also uncovered various gaps in business education across the curricula at both institutions and led to open discussions with faculty in an effort to improve the success of students both during their degree programs and into their careers.

Originality/value – This study provides a framework and methodology for evaluating business curriculums against robust standards to improve student success. With examples from undergraduate and graduate programs, the results of this project promise to have long-lasting implications on the development of curriculums across business programs, including the value of librarian support in developing Business Research Competencies.

Keywords Academic libraries, Curriculum, Assessment, Business education, Information literacy, Competences

Paper type Research paper

Introduction

US institutions of higher education graduate more students with degrees in business than any other field of study, representing nearly 20 per cent of undergraduate and 25 per cent of master's degrees conferred (Institute of Education Sciences, 2013). Business schools, more than most other disciplines, work to graduate students with the skills they will need on the

job (Klusek and Bornstein, 2006; Cheuk, 2008; Sokoloff, 2012; Head *et al.*, 2013). Information literacy, defined as the set of abilities that allows individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information," is essential to business students, as it allows them to make better-informed decisions and therefore be more successful in the workplace (American Library Association, 1989). The Chartered Institute of Library and Information Professionals (CILIP) in the UK further defines information literacy as "knowing when and why you need information, where to find it and how to evaluate, use and communicate it in an ethical manner" (Chartered Institute of Library and Information Professionals, 2017). However, while employers value the skill set that information literacy provides, a study by Conley and Gil (2011) demonstrated that of the 56 business professionals surveyed, the majority were not familiar with the term information literacy (Conley and Gil, 2011).

Information literacy instruction is regularly taught by librarians within the context of business, with 90 per cent of respondents in a survey of libraries at colleges accredited by the Association to Advance Collegiate Schools of Business (AACSB) reporting that they provide instruction to business majors or to those who intend to become business majors (Cooney, 2005). Cooney (2005, p. 10) defined business information literacy as:

> [. . .] specific programs and practices that your library utilizes to help business students 'recognize when information is needed and [gives them] the ability to locate, evaluate, and use effectively the needed information.

While it is admirable that so many business librarians are providing this instruction, it was also found that very few are assessing their efforts (Cooney, 2005). Information literacy instruction requires heuristics to plan, execute and assess teaching so that librarians can ensure they are making the best use of limited instruction time. Additionally, information literacy and business research are missing from the AACSB standards, creating additional barriers in incorporating it throughout the curriculum. Though AACSB Standard 9 lists recommended skills and knowledge for undergraduate, master's and doctoral students, information literacy is only mentioned for doctoral students in the suggestion that they learn to understand scholarly literature in the areas of business and management (Association to Advance Collegiate Schools of Business, 2017).

For these reasons, information literacy needs to be defined in terms that not only better apply to AACSB requirements but also describe information literacy in the context of business research and education. In response to this need, librarians in the Business Reference and Services Section (BRASS) of the American Library Association have been working to develop a framework for business information literacy standards that can be applied to the curriculum at both the undergraduate and graduate levels. These Business Research Competencies (hereafter the Competencies) fill a vital niche in the literature, but prior to this paper, have not been validated using existing course curriculum.

Literature review
Competencies and business intelligence instruction
As with many disciplines, heuristics and standards are an important part of information literacy. Heuristics help people within a discipline track quality, understand needs and plan effectively. In a study analyzing credibility and trust of information, specifically in online environments, Metzger and Flanagin (2013) discussed the relationship between heuristics and information literacy, explaining that:

> [. . .] theories of information processing suggest that Internet information consumers likely cope with the perceived costs of information search and overload by using strategies that minimize

their cognitive effort and time, through the use of cognitive heuristics. Cognitive heuristics constitute information processing strategies that ignore information to make decisions more quickly and with less effort than more complex methods, and thus they reduce cognitive load during information processing.

Given the major shift toward electronic forms of research in academia and the hard reality of information overload for students, drawing the connection between information literacy and heuristics helps librarians and educators alike understand the cognitive processes of students and how to best educate them according to their learning strategies. Indeed, librarians have embedded heuristics in information literacy, perhaps most notably in the Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education, originally published in 2000 (Association of College and Research Libraries and American Library Association, 2000).

In 2012, librarians in the College and University Business Libraries division of the Special Libraries Association partnered with BRASS to start developing a framework for business information literacy standards. In 2015 while this process was underway, the standards were updated with the ACRL Information Literacy Framework for higher education (Association of College & Research Libraries, 2015). The new Competencies are currently in the draft form and awaiting final approval to be adopted by the RUSA (Reference & User Services Association) Standards and Guidelines Committee. The final draft of the Competencies is included in Appendix 1.

Library work does not exist in vacuum and neither do the standards in which librarians operate. When the ACRL transitioned from the Information Literacy Competency Standards for Higher Education to the Framework for Information Literacy for Higher Education, many instruction librarians were conflicted on how they should transition from teaching with what was effectively a checklist to the richer, but decidedly more ambiguous, Framework (Williams, 2015). To address how this should be accomplished within business librarianship, the BRASS Competencies are meant to work in conjunction with the Framework and seek to align with the AACSB goals for accredited business school curriculums.

The draft of BRASS Competencies cites both the Standards and the Framework as those are the two main accrediting standards documents that shape modern American business librarianship. Standards, and the language involving them, continue to exist in dialog both with the information literacy literature and pressures for compliance and regulation (Drabinski, 2017). More recently, nuanced and complicated information literacy understandings exist in the literature such as the concept of information literacy landscapes (Lloyd, 2006) and connections between information literacy in higher education and information literacy in the workplace (Donaldson and Inskip, 2017). By focusing on the Framework and Standards, we do not intend to imply that there are no other understandings of information literacy in higher education and in the workplace, but rather the lack of standards documents for business education that address other constructs. These other perspectives are helpful in understanding information literacy practices and should be more fully adopted in later standards and assessments.

Curriculum mapping and benchmarking in business
Since the late 1980's, curriculum mapping has been used to align course content with standards, identify repetitions and gaps in student learning and standardize core curriculums (Jacobs, 1997). Academics at the post-secondary level quickly saw the value of documenting concepts across the curriculum to ensure that the key concepts and skills of a discipline were adequately addressed throughout the career of a student. At graduation,

each student is expected to be equipped with the skills and knowledge to be successful in graduate school or the workforce (Archambault and Masunaga, 2015). Since the early 2000s, librarians have used curriculum mapping "to demonstrate how the library's instruction activities intersect with broader campus goals and outcomes" (Belanger and Oakleaf, 2013, p. 355). Librarians share the responsibility of preparing students to enter the workforce, and are in a unique position to step in with programming and instruction to fill any gaps.

Despite the number of studies and projects that have considered the importance of curriculum mapping in the development of a strong core curriculum, few have assessed the presence of particular competencies across business courses at a programmatic level. In her brief 2015 article, business librarian Nataly Blas sets forth a process for thinking about curriculum mapping at Loyola Marymount University, without in-depth elaboration on the results of the study (Blas, 2015).

With the development of the Competencies, there now exists a set of standards upon which curriculums can systematically be mapped. This study proposes a new methodology that can be adapted for use across business programs at a variety of institutions to promote student success and improve student subject knowledge. For the purposes of this study, curriculum mapping will be defined as the process of evaluating curriculum at a programmatic level to identify gaps or redundancies in student subject knowledge as defined by the Competencies, as seen in a simplified map later in this paper.

While studies in business literature do not typically use terminology such as curriculum mapping and information literacy when discussing best practices, many articles and books address curriculum mapping and information through alternative terminology. One study that analyzed learning outcomes in undergraduate business education used the term benchmarking to discuss much the same process as describe in curriculum mapping (Ruhul Amin and Amin, 2003; Levy and Ronco, 2012). This paper addressed:

> [. . .] the impetus for continuous improvement of curriculum in higher education, and demonstrates the findings of a conceptual model toward benchmarking learning outcomes in general education and functional areas of business curriculum toward best practices of outcomes assessment in higher education (Ruhul Amin and Amin, 2003).

Various studies also use terminology such as threshold standards and business intelligence to discuss best practices in developing business education curriculum, both at the undergraduate and graduate levels (Armstrong *et al.*, 2014; Datar *et al.*, 2010; Gupta *et al.*, 2015). Therefore, the process of comparing existing curriculum alongside a set of learning outcomes or standards has long been practiced within the field of business education. As librarians, using similar practices can help ensure that the support and assistance we offer, outside of the confines of the traditional classroom, appropriately meet the needs of our students as they work through their degrees.

Teaching and learning
Using prior knowledge and leveraging students' experiences during instruction provide opportunities for deeper learning and retention. Curriculum mapping, course sequencing and scaffolding provide a greater depth of experience and understanding than any single occurrence of subject discussion can provide. During a study of first-year engineering students at the University of Cape Town, Walton and Archer (2004) found that, despite the intentional scaffolding of content and skills implemented within the curriculum, students had difficulties transferring what they previously learned about online searching to new contexts.

Researchers from several disciplines studied the sequencing or timing of programmatic courses in relation to curriculum planning and development. Within these studies, the authors analyzed methods for exposing students to content and methodology that would ultimately lead to grade improvement and enhanced student comprehension. In one study, the authors sought to determine when undergraduate students should take methods and statistics courses relative to one another within a psychology program, to study how the sequencing of classes affects students' grades and performance on exit exams (Barron and Apple, 2014). Another research study focused on how the sequencing of courses within communications departments can enhance students' grade performance during their course of study (Richards, 2012).

In a La Trobe University study, researchers emphasized the need to make students' information literacy skills replicable over time and across disciplines, specifically arguing that through scaffolding instruction, students can "build, apply, and practice basic generic skills in a non-confronting and comfortable learning environment," preparing them for future discipline-specific learning activities (Salisbury *et al.*, 2012, p. 10). Scaffolding allows students to learn and create meaning from instructional experiences, as they build and use prior knowledge during the process (Walton and Archer, 2004). The intention of scaffolding is to provide students with sufficient practice in dealing with increasingly complicated tasks or content knowledge over time. Ideally, this results in students who are capable of flexibly transferring developed skills or knowledge to new situations. In their unique role outside of the curriculum, librarians can serve to help students apply scaffolding, providing mentorship and guidance along the way.

In this paper, the new Competencies are mapped to business information literacy efforts at two large public research institutions, both with enrollments of more than 40,000 students. One case study will focus on mapping undergraduate curriculum, the other graduate. Our research questions were as follows:

RQ1. Do the Competencies serve as a good framework for understanding business information literacy and its effects on an undergraduate curriculum and graduate level curriculum?

RQ2. How do the Competencies inform our scaffolded instruction?

RQ3. Do the Competencies relate to the overall curriculum of the business school?

This study will explore the use of the Competencies and contribute to the work of the BRASS toward inclusion in the AACSB requirements. This paper also will also highlight the way librarians can use the Competencies to engage business departments, better understand their impact and benchmark their programs against one another.

Methodology
Business librarians at Purdue University and University of South Florida mapped the curriculum in the Purdue University Undergraduate Management Program and the University of South Florida Master of Business Administration (MBA) Program to the draft BRASS Competencies. The authors of this study compared each section on the Competencies with that of the core curriculum for each program. The syllabi of record were gathered for each course in the core curriculum, and when available, course assignments and projects were also evaluated to determine if the competencies were being addressed, met and to what degree.

The authors created a matrix based on each section of the Competencies, then assigned a level of zero to four to denote how deeply the course covered the competency topic. In some

cases, librarians were already involved in either instruction or planning for a course, and so they had a deeper understanding of what was covered. However, in other cases, determinations were made strictly from the course syllabi. Throughout the process, the librarians normed their evaluation by exchanging rubrics and then reevaluating to ensure standardization. Once all courses were evaluated, we were able to evaluate the prevalence of each competency within the curriculums.

Case Study 1: Purdue University

Purdue University is a large, land-grant university with an enrollment of over 40,000. At Purdue University, the Krannert School of Management and Economics has a combined undergraduate and graduate enrollment of 3,153 (Purdue, 2017). Undergraduate degrees include Accounting, Economics, Finance, Industrial Management, General Management, Marketing and Supply Chain, Information and Analytics. Students graduating from the General Management program have an 89 per cent placement rate within six months of graduating (Krannert School of Management, 2017). The STEM focus of the Purdue campus is prominent in management degrees from Krannert, which have a heavy quantitative focus.

For this curriculum mapping project, we chose the General Management major, as it has the most overlap with other majors and is the most reflective of the undergraduate experience as a whole (Appendix 2). Students in this program are required to take 33 credits of core business classes. These include: Introduction to Organizational Behavior, Business Statistics, Management Science, Financial Management, Marketing Management, Operations Management, Management Information Systems, Human Resources Management, Strategic Management, Managerial Economics and Labor Economics.

Additionally, students who are directly admitted into the program are required to take Introduction to Management and Information Strategies, a course co-taught by a Krannert faculty member and faculty from the business library. This course teaches information literacy in the context of evidence-based decision-making, alongside areas of management and basic business principles (Stonebraker and Howard, 2018). Approximately 20 per cent of incoming Krannert's freshmen are directly admitted into the program and are required to take this course, and there is a desire in the management school to increase this number in the upcoming years. Librarians at Purdue University have had success scaling up courses using flipped classrooms, and the same idea is planned to address future growth in this course (Stonebraker, 2015). Although there have been plans to scale this specific instance of information literacy instruction, Purdue University currently only employs three business librarians. While this is significantly more than many other institutions, it still sets up a ratio of 1 librarian to 1,000+ students, not including liaison responsibilities outside of the school of management, such as agricultural economics or hospitality and tourism management. Owing to these factors, it is impossible for the librarians to teach comprehensive information literacy instruction throughout the four-year curriculum. Instead, librarians must rely on business faculty to integrate information literacy into their courses as well.

Mapping results at Purdue University

In the undergraduate core management curriculum, mapping to the BRASS Competencies showed where topics were covered more than once, and competencies that were not covered at all. Many competencies are taught once or twice throughout the curriculum, and the competencies shown in Table I are taught three or more times. Alternatively, the areas shown in Table II are not covered at all in the undergraduate curriculum.

While the two outliers The Business Information Environment 1.4 and Company Research 5.5 are topics well integrated into the curriculum, the Purdue University librarians need to examine why students are passing through all of the core curriculum courses without learning International Business Research at all. Because there is no required course related to international business, perhaps some assignments in current courses could be redesigned to look at issues from an international perspective to cover these competencies.

Mapping the Competencies to the Introduction to Management and Information Strategies course provided valuable information regarding what we are and are not covering, and will be helpful in redesigning future iterations of the course. Much as expected, the results of the mapping showed that the course provides a wide overview of the Competencies; however, it also identified the same primary area missing as in the core curriculum: International Business Research. All of the projects the students complete focus on markets, industries and businesses in the USA and fail to address International Business Research altogether. Because business librarians design the information literacy and research components of this course, there is an excellent opportunity to adjust the content to cover these neglected areas.

Case Study 2: University of South Florida

University of South Florida is a large, public four-year university with an enrollment of over 49,000 students (University of South Florida, 2017a). At the University of South Florida, the Muma College of Business has approximately 4,500 undergraduate students, 1,000 graduate students and 170 instructional faculty (includes tenured/tenure track, continuing and limited-term lecturers, clinical and visiting faculty and post docs) (University of South Florida, 2017b). According to the 2017 Muma College of Business Annual Report, 555 master's degrees and 8 doctoral degrees were awarded in the 2015-2016 academic year. This number is an 11 per cent increase from the previous year and reflects the steady growth of the graduate program since 2011-2012 when the college awarded only 325 master degrees and 6 doctoral degrees (University of South Florida, 2017c). Given the growth of the graduate programs within the Muma College of Business, this case study focused on the presence of the Competencies within the graduate curriculum (Appendix 3).

For this curriculum mapping project, the core classes within the MBA program were assessed. Students in the MBA program are required to take 24 credits of core classes,

Competency	Section
The Business Information Environment	1.0, 1.1
Research Strategies	2.0
Theory-Based Discipline Research	3.0
Company Research	5.0, 5.1, 5.2

Table I.
Competencies addressed in [Institution 1] curriculum more than three times

Competency	Section
The Business Information Environment	1.4
Company Research	5.5
International Business Research	7.0, 7.1, 7.2, 7.3, 7.4

Table II.
Competencies not addressed in [Institution 1] curriculum

www.

including: Operations Management and Quality Enhancement, Leadership/Management Concepts, Social, Ethical, Legal Systems, Communications Skills for Managers, Financial Analysis, Strategic Business Analytics, Data Analytics for Business and Integrated Business Applications.

In addition to the required core courses, MBA students take five graduate-level business electives to complete the degree. Concentrations in Sports and Entertainment Management and Supply Chain Management are available for students who decide to specialize.

Mapping results at University of South Florida
Mapping the University of South Florida's MBA core curriculum to the BRASS Competencies highlighted where there are gaps in the MBA curriculum. This exercise allowed the business librarian to identify which courses addressed specific competencies and also where certain competencies were not addressed at all or only minimally.

The majority of the competencies are covered three or more times throughout the core MBA curriculum. These can be seen in Table III.

Although there is generally a strong coverage of most of the competencies across the curriculum, our results show a lack of emphasis on International Business Research and Business Law. It is our hope that through discussion with the course instructors, the International Business Research component can be remedied by altering current assignments to make them more global in scope. Regarding Business Law Research, however, there is a gap that would require a more drastic redesign to address this competency.

Results: suggested new competencies
In mapping the Competencies to our curriculums, we also mapped areas not addressed within the current draft of the Competencies that we nevertheless were covering in our classes. For example, librarians at both of our institutions assist students in researching careers and participate in courses related to ethical use of information, intellectual property and decision-making. Given our current work in these areas, we developed competencies with additional subsections relating to these categories. These areas are described in further detail in Appendix 4, Suggested Additional Research Competencies.

Discussion, limitations and next steps
This study has found that the Competencies were a good model for evaluating course curriculums. It also helped to identify several areas not addressed by the current Competencies that could be added. Curriculum mapping at both institutions reveals both curriculum strategy strengths and weaknesses.

Competency	Section
The Business Information Environment	1.0, 1.1, 1.2, 1.3, 1.4
Research Strategies	2.0, 2.1, 2.2
Theory-Based Discipline Research	3.0, 3.1
Industry Research	4.0, 4.2, 4.3, 4.5, 4.6, 4.7, 4.8, 4.9
Company Research	5.0, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8
Market Research	6.0, 6.1, 6.2, 6.3
Financial Research	8.0
Business Law Research	9.0

Table III.
Competencies addressed in [Institution 2] curriculum

Our findings have implications for other libraries interested in evaluating information literacy in course curriculums. This was the first study in the library literature that mapped multiple business curriculums against each other using information literacy benchmarks. While benchmarking is often done during accreditation, the AACSB standards do not include information literacy, so it is vital that librarians at multiple institutions work together to compare information literacy outcomes like that in this study. Before the existence of benchmarking documents like the Competencies, it was very challenging to compare information literacy programs against each other in business librarianship. Outside of program development, such benchmarking could prove useful as libraries continue to find ways to better describe library value to business school stakeholders, especially in terms of rankings or awards. For example, a business school may wish to include successful benchmarking using the Competencies in an annual report, or include them on their website, or describe them in comparison to a rival institution.

When evaluating opportunities in curriculums, it is important to consider limitations in addressable scope. At the University of South Florida, providing comprehensive support across all departments in the business school is not feasible owing to the size and structure of the existing library liaison program. The University of South Florida Libraries operate on a lean liaison model where each liaison supports multiple departments and sometimes multiple colleges. Currently, the business librarian serves as the direct point of contact for the departments of business undergraduate studies, business graduate studies, marketing, finance, accounting, advertising, economics and career services. The breadth of departments covered by this librarian necessarily limits the depth to which the librarian can address curricular needs. This lean model results in inconsistent coverage of the whole business curriculum and limits the number of new projects that can be pursued. Therefore, the business librarian at the University of South Florida must rely on key partnerships within the business school and across campus to ensure that students are graduating with an adequate level of business intelligence.

While there was some attempt to standardize by having each library evaluate the other cases' maps for inaccuracies, this study also lacked interrater reliability. The course syllabi contain institutional jargon and contextual information that make outside evaluation challenging. While it did not seem suitable to enforce standardization, this may be an area for future work. Certainly if the Competencies were to be implemented for certification, further work might be needed to standardize the wording of information literary principles in syllabi and plans of study. As previously mentioned, even using the wording "information literacy" versus "business research" or "research" would probably help the evaluators and the evaluated.

This study was limited in scope and time. We chose to evaluate only core programs at Purdue University and the University of South Florida even though many libraries interact primarily with capstones or elective classes. Those courses were not the focus of this study, as we wanted to conduct research on the largest quantity of the student population. This study did not take into account extracurricular activities such as internships, workshops, intercollegiate competitions or club activities. Depending on the program, the Competencies could also be used to address these areas. Additionally, we chose to evaluate only the current curriculum and not past or future models. It could prove useful for others to study how a given curriculum might be changing or have changed over time, and how they might affect library involvement.

Our next step is to share our findings with our departmental collaborators and with the larger information literacy community. It is our hope that curriculum mapping model application of the Competencies and mapped results would prove useful not only to

librarians, but also to other campus collaborators who may be looking for more ways to plan and assess information literacy experiences in the curriculum. We also have worked and hope to work further with the BRASS Committee charged with drafting the Competencies to add additional components we observed from our results. One of the strengths of this study is that we both used the same metrics and found some of the same issues, strengthening the rationale for tweaks to the Competencies while also validating their use in curriculums.

Conclusion

Mapping the Competencies to undergraduate and graduate business curriculums proved to be a valuable exercise for the authors. We found it interesting that both institutions were lacking in International Business Research, and posit that this may be a larger gap in schools beyond the two examined in this paper, and an area for further research. Part of the problem may be that many business databases are not international in scope, so one must go beyond the standard resources to find information in this area. If instructors are not being intentional in their use of international business instruction, it could easily be unintentionally missed. Now, more than ever, it is essential that we take steps to ensure this competency is not omitted from our curricula, as many of the firms hiring our students are global in reach and scale.

We also found the document created a useful system for benchmarking our instruction and further defining what information literacy means in a business context. The Competencies have many applications and implications beyond what we have discussed in these case studies, including assisting in the development of new instruction programs, benchmarking current instruction activities and serving as a useful tool for new business librarians. We believe curriculum mapping processes like those described in this paper will be a helpful tool for librarians at other institutions.

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Appendix 1. Draft Business Research Competencies

Background (i.e. Development)
A task force of business specialist librarians was formed to create a Business Research Competency document. The Task Force first convened in X, and developed the document over X years, and it was put to discussion at X, and voted upon at X. Members included: W, X, Y, Z.

Introduction

To prosper, businesses of all types must successfully translate data, information and knowledge, into actionable wisdom for competitive advantage. To accomplish this, businesses rely on the performance of knowledge workers, who are often graduates of business programs, to apply their critical thinking and problem-solving skills toward managing the research challenges inherent in today's information-saturated world.

We information professionals and librarians have a common goal of empowering our clientele to become savvy research navigators and information consumers, to become those knowledge workers that enable businesses to prosper. We do that by teaching our clientele how to establish and strengthen their portfolio of Business Research Competencies, wherein business students should be able to:

- articulate their strategic information needs;
- appreciate the high value of business information;
- discern what information is available or restricted;
- gather ethically and assess available information; and
- analyze, develop, and present informed recommendations or take actions that impact the organization

Having these Business Research Competencies makes business program graduates workforce ready in the knowledge economy, whether as employees or entrepreneurs. Furthermore the majority of all college graduates in every discipline will enter the professional world (vs academe), meaning anyone can benefit greatly from developing these competencies.

Purpose

This document contains suggested learning proficiencies and outcomes for business students in alignment with the Association to Advance Collegiate Schools of Business (AACSB) goals for accredited business school curriculum.

Each competency section begins with the statement of a desired educational outcome and then lists examples of ways to achieve that outcome. These competencies may be adapted for use in class assignments, library instruction sessions and tutorials.

The competencies will:

- Allow business librarians to use these competencies as an outreach tool within their institutions.
- Plan individual lessons and instruction programs.
- Allow business librarians to assess their community's learning of the competencies as defined.
- Allow business librarians to map these competencies to the standards of business school excellence as outlined by the AACSB.
- Help business librarians nationally and internationally articulate and standardize the goals for their instruction and outreach efforts within their business educational communities.

Speaking plainly, we'd all be on the "same page" for what we should be teaching our researchers/ community. The intent is that these competencies will resonate with the ALA/SLA literature on standards of information literacy (though the ACRL standards are currently in flux, and SLA standards which are currently in development).

The Business Information Environment

- The researcher recognizes what information is available in the business disciplines. Included in this information may be various types of business articles, public company information including financials, private company information, international companies, statistics, market research, and economic theories, accounting and business ethics.
- Understands the purposes of different business resources, including academic/scholarly journal articles, market research databases, company databases, trade journals, popular magazines, business trade books, business news, accounting standards, various internet sources and government resources.
- Is able to distinguish and collect from different data sources which includes macroeconomic monetary statistics, local economic statistics, national and international market demographics, US Government statistics, international statistics, company financials and industry financials.
- Understands the importance of being able to evaluate and compare the quality of information found in library resources such as article databases and books, versus information found from conducting a basic web search. In addition, the researcher is also able to identify and evaluate quality sources coming from the web that includes universities, trade organizations, Google Scholar and government resources such as the Census Bureau, and the Bureau of Labor Statistics. The researcher will be able to evaluate information based on specific evaluative criteria such as credibility, relevance, authority, accuracy and purpose.
- Conducts research ethically, e.g. in alignment with guidelines established by the nonprofit organization called Strategic & Competitive Intelligence Professionals (SCIP).

For example, a researcher should not deliberately misrepresent themselves in order to gain company information.

Research Strategies

- The researcher executes effective search strategies. This includes knowledge of universal database search descriptors (such as author or subject), the ability to modify or refine a search and how to define a research idea and articulate a topic with applicable keywords. For more information about search strategy competencies please see section 2.2 of the ACRL Information Literacy Standards.
- Understands and utilizes the business subject specific terms and codes that are relevant to their field of research inquiry, like NAICS, ticker, etc.
- Creates queries based on the research criteria (companies fitting a profile, countries, etc.) to generate lists of data that can be ranked.

Theory-Based Discipline Research

- The researcher recognizes the importance of business-discipline related theories, e.g. management, organizational behavior, ethics, corporate strategy, finance, economic theories, etc. Also understands the fundamental assumptions and construction of economic theories and models. Uses theories and the statistics and models derived from those theories to predict outcomes of policy, economic data or stages of an economic cycle.
- The researcher uses the library catalog, article databases and other discovery tools, to locate and read critical academic books, peer-reviewed journal articles, conference proceedings and practical trade publications. Subject headings, book reviews, literature reviews and citation analysis are understood to be effective aids to identifying, interpreting and gauging the importance of critical texts and data.

Industry Research

- The researcher understands major issues and factors to consider in analyzing industries. Also knows where to look and techniques to use in finding information about such issues and factors.
- The researcher recognizes the importance of clearly defining industries under study. Brainstorms possible keywords and consults relevant industry codes such as NAICS and SIC. Understands possible problems in use of these codes, as in study of niche and emerging industries.
- The researcher knows and understands important industry analysis models such as "five forces" and uses them in framing analysis.
- The researcher locates and uses industry surveys and reports to gain an overview of industry statistics, geographic factors, trends, leading companies, and other key factors.
- The researcher updates industry surveys and reports with more recent news, trends, and forecasts.
- The researcher obtains insights from articles in academic journals, trade journals, business magazines and newspapers, and uses these sources to supplement industry surveys and reports or to address niche and emerging industries not well covered in more general sources.

- The researcher identifies relevant industry/business-to-business and trade association websites for insider perspectives. Considers how agenda affects point of view. Studies their public information and consults human sources directly when primary research is needed.
- The researcher identifies the leading competitors in the industry, whether public companies, private companies or other organization types, and their market shares and other rankings.
- The researcher gains understanding of how the industry functions by studying the SEC 10-K reports of its leading public companies.
- The researcher analyzes the financial and operating characteristics of the industry by studying its industry averages.

Company Research

- The researcher is familiar with the range of sources of company information for public, private, national, regional, and international companies.
- The researcher recognizes that company size, location and structure (e.g. public vs private; parent vs subsidiary) can affect availability and extent of information. Recognizes that some company information may be restricted and unavailable to outside researchers.
- The researcher understands the need to diversify sources to provide a more comprehensive picture of a company. Understands how and why stakeholder positions, regulatory contexts, and source types may impact information from and about a company (example: a company press release vs. an independent news report.)
- The researcher understands how to gather company, competitor and industry financial statistics and ratios to benchmark companies against competitors and industry norms.
- The researcher understands how to locate company stock data as well as competitive and index data for comparative purposes, and can search by stock exchange ticker or other code.
- The researcher creates a competitor, prospect or investment screening list by executing a search according to desired criteria (NAICS/SIC code, GICS, financial data, employees, geographical location, etc.).
- The researcher locates market share and business rankings information to analyze competitive position.
- The researcher locates analytical reports such as SWOT reports and stock reports, and uses qualitative and quantitative information included as a starting point for analysis.
- The researcher locates company financial filings (10-K, 10-Q, Proxy Statements, etc.) and related materials in order to analyze matters of company strategy, financial health, marketing, risk, and operations.
- The researcher searches for company information by Ticker or other relevant company codes.

Market Research

- The researcher knows the foundational information elements used to comprehend a given market. These market research elements include: characteristics about consumers within the target market(s), the potential size of the market(s), and the share and brand identity of existing competitor products or services in the market(s).

The researcher also appreciates the difference between primary research, which refers to gathering original information (e.g. conducting surveys or interviews) and then analyzing it, and secondary research, which refers to means reading primary research reports.

- The researcher understands that consumer characteristic data varies in type, geographic scope, and cost, based on the supplier. To elaborate, the U.S. Census freely provides demographic characteristic data (e.g. age, sex, race, income) at the national, state and local geographies, whereas commercial market research companies provide fee-based psychographic data (e.g. leisure activities, media consumption, product/brand preferences, social class, etc.) at those geographies.

  Uses any combination of secondary industry and/or market research reports, news content about the market, and primary research, to compile enough data to help them best identify their target consumers.

- The researcher understands that all industries vary in relative established maturity. Therefore, the more established the industry, the more that is known about the size of its target market.

- The researcher uses any combination of secondary industry and/or market research reports, news content about the industry, and primary research, to compile enough data to help them best calculate an estimated market size.

- The researcher understands that company market share information varies based on relative established industry maturity, plus the varying amounts of information that private and public companies choose to disclose about their status in that industry. The researcher uses any combination of secondary industry and/or market research reports, news content about the industry, disclosures from private and public companies (e.g. Press Releases and SEC filings) and primary research, to compile enough data to help them best parse out the estimated market share of constituent companies.

International Business Research

- The researcher can analyze international economic data and country backgrounds to identify potential markets, develop marketing strategies, assess opportunities and threats from the international environment, and understand the international economic and legal environment.

- The researcher can locate economic development statistics to assess the level of development and potential economic needs of a country. Examples of these statistics include purchasing power parity, access to water and electricity, educational attainment, and more.

- The researcher can locate monetary and financial statistics to analyze market potential, comparative advantage of the country's industry, and reaction to changes in the financial environment. Examples include current imports and exports, currency valuation, balance of payments, national income, disposable income and more. An example of a database would be the International Monetary Fund database.

- The researcher respects that the culture of a country or region is unique and important; locates foreign news, language learning materials; and uses any available secondary literature combined with primary research to gain an understanding of a culture.

- The researcher understands how to research the regulatory and legal background of the international environment. The researcher understands the laws governing foreign investment in the country and what form of incorporation is most appropriate for that market (export, subsidiary, partnership, etc.)

Financial Research

- The researcher can interpret and analyze the finances of the company or entity and its industry to maximize successful operations and future planning. The researcher is furthermore familiar with industry-specific accounting and auditing practices in order to manage and plan the company's successful financial operation. Finally, the researcher is familiar with tax codes and financial regulations.

Business Law Research

- The researcher knows how to access legal and regulatory information and professional standards in order to apply them to a business environment.
- The researcher understands the range of legal systems and standards (U.S. local, state, federal, foreign, and international) and accesses the appropriate sources for legal, regulatory and standards information, including information applicable to applicable to specific businesses and industries such as business registration, zoning and licensing.
- The researcher uses secondary sources such as legal encyclopedias and handbooks to gain background knowledge and insight into legal issues, as well as prepare for further searching.
- The researcher locates needed legal publications and case law, or standards information by navigating through structure of code, codification or other established framework
- The researcher can find relevant codes, related codes and trace previous codes, to determine the proper interpretation of accounting or tax principles and applications. Can locate statements and guidelines published by accounting governing bodies (FASB, AICPA, GAAP) to assist in interpretation of accounting principles.
- The researcher understands that the research process may necessitate consulting with people who have more advanced legal expertise, e.g. HR professionals, corporate attorneys, etc.
- The researcher searches appropriate sources for legal and standards information by citation, names of parties, organizations, specific laws and concepts, and topics.

Appendix 2

Case Study 2: core curriculum general management

Krannert School of Management Fall 2017	Program: MGMT-BS Code: GMGT Credit Hours: 120 Graduation Index: 2.00 minimum Major Index: 2.00 minimum

Note: Students are encouraged to use this advising worksheet as a resource when planning progress toward completion of degree requirements. An Academic Advisor may be contacted for assistance in interpreting this worksheet. This worksheet is not an academic transcript, and it is not an official notification of completion of degree or certificate requirements. The University Catalog is the authoritative source for displaying plans of study. The student is ultimately responsible for knowing and completing all degree requirements.

Required Major Upper Division Courses (33 credits)

___ (3)   OBHR 33000 Introduction to Organizational Behavior
___ (3)   MGMT 30500 Business Statistics **(Prerequisite: STAT 22500 C- or higher)**
___ (3)   MGMT 30600 Management Science **(Pre or co-req MGMT 30500 or STAT 35000 C- or higher)**
___ (3)   MGMT 31000 Financial Management **(Prerequisite: MGMT 20100 & ECON 25100 C- or higher)**
___ (3)   MGMT 32400 Marketing Management **(Prerequisite: MGMT 20100 & ECON 25100 C- or higher)**
___ (3)   MGMT 36100 Operations Management **(Prerequisite: STAT 22500 C- or higher)**
___ (3)   MGMT 38200 Management Information Systems **(Prerequisite: CS 23500 C- or higher)**
___ (3)   MGMT 44428 Human Resource Management
___ (3)   MGMT 35200 Strategic Management **(Prerequisite: MGMT 20100 & ECON 25100 C- or higher)**
___ (3)   ECON 30100 Managerial Economics **(Prerequisite: ECON 25100)**
___ (3)   ECON 38500 Labor Economics

Major Selectives (15 credits)
Choose a minimum of 9 credit hours from the following:
___ (3)   MGMT 44362 Leadership & Organizational Change
___ (3)   MGMT 44690 Negotiations and Decision Making
___ (3)   MGMT 44710 Competitive Strategy
___ (3)   MGMT 44810 Technology Strategy
Choose up to 6 credit hours from the following:
___ (3)   ECON 37000 International Trade
___ (3)   ECON 46100 Industrial Organization
___ (3)   MGMT 44310 Managing Human Capital Globally
___ (3)   MGMT 44429 Talent Management
___ (3)   MGMT 45200 Manufacturing Strategy
___ (3)   MGMT 45900 International Management
___ (3)   MGMT 48400 Management New Entrepreneurship
___ (3)   MGMT 35500 Management Consulting Tools & Skills

Other Departmental/Program Course Requirements (59 credits, including MAI Core courses)
___ (3)   MGMT 25400 Legal Foundations of Business I
___ (1)   MGMT 29500 Professional Career Management
___ (3)   COM 11400 Fundamentals of Speech Communication **(0 *UC* satisfies Oral Communication for core)**
___ (3)   CS 23500 Organizational Computing **(0 MA 16010)**
___ (3)   ECON 25200 Macroeconomics **(*UC* satisfies Behavioral/Social Science for core)**
___ (3)   ENGL 42000 Business Writing **(Prerequisite: ENGL 10600/ENGL 10800)**
___ (3)   MGMT 20100 Management Accounting I **(Prerequisite: MGMT 20000 C- or higher)**
(3)   STAT 22500 Introduction to Probability Models **(Prerequisite: MA 16020 C- or higher)**
___ (3)   PSY 12000 or SOC 10000
___ (3)   Cultural Competency Selectives I
___ (3)   Cultural Competency Selectives II
___ (3)   University Core: Human Cultures (Humanities)
___ (3)   University Core: Science

___ (3)   University Core: Science
___ (3)   University Core: Science, Technology & Society

Management Admissions Index (MAI) Core*

___ (3)   ECON 25100 Microeconomics **(CC,*UC* satisfies Behavioral/Social Science for core)**
          ENGL 10600 First-Year Composition or ENGL 10800 (3cr) Accelerated First-Year Composition
___ (4)   **(CC, *UC*   satisfies Written Communication for core)**
___ (3)   MA 16010 Applied Calculus I **(CC, *UC* satisfies Quantitative Reasoning for core)**
___ (3)   MA 16020 Applied Calculus II **(CC, Prerequisite: MA 16010 C- or higher)**
___ (3)   MGMT 20000 Introductory Accounting **(CC)**

Electives (13 credits)

The number of general electives will vary for each student and can include AP credit, transfer credit, and/or Credit by Exam.

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____   _____ ____) _____ ____) _____ ____ _____
       ( )   ((( )
____   _____ ____) _____ ____) _____ ____   _____

*Management Admissions Index (MAI) Core

- To be admitted into Upper Division, students who have completed all courses in the MAI must have at least a 3.00 MAI GPA and a 2.50 cumulative GPA, have a C- or higher in all MAI and required School of Management courses, and may not be on academic probation.
- Requirements for Upper Division can be found online:
- University Policy states students may only attempt a course 3 times and grades of W or WF are included in this limit. Per the School of Management, no more than three different MAI courses, or their equivalents, may be taken two times for a grade.
- Students are responsible for consulting their advisor about re-take options available to them.
- Previous enrollments in MA 16100, 16200, 16500, 16600 do not count against the retake policy for the MAI.

University Core Requirements

Human Cultures Humanities	Δ _____	*Science, Technology & Society Selective*	Δ _____
Human Cultures	Δ _____	*Written Communication*	Δ _____
Behavioral/Social Science			
Information Literacy	Δ _____	*Oral Communication*	Δ _____
Science Selective	Δ _____	*Quantitative Reasoning*	Δ _____
Science Selective	Δ _____		Δ _____

General Information

- MGMT, OBHR and ECON courses numbered 30000 can only be taken after being admitted to Upper Division.
- Transfer credit for upper level MGMT, OBHR and ECON courses will only be considered if taken at a 4 year AACSB accredited school, (www.aacsb.edu).
- Courses taken on approved study abroad programs may be used to satisfy degree requirements. Students   participating in a approved study abroad program are registered as full-time students during their semester abroad. Schedule an appointment with your advisor to discuss study abroad opportunities.
- Minors outside of the School of Management are also available.

◊   Completion prior to admittance to Upper

UC   Division strongly encouraged
        Fulfills University Core requirement
CC
        Critical Course to satisfy MAI requirements

Revised 03.09.17 (effective Fall 2017)

(*continued*)

General Management

Suggested Arrangement of Courses:

Credits	Fall 1st Year	Prerequisite	Credits	Spring 1st Year	Prerequisite
3	MA 16010 (CC)	ALEKS 75 or MA 15400 or MA 15800 C- or higher	3	MA 16020 (CC)	MA 16010 C- or higher
4	ENGL 10600/ENG 10800 (CC)		3	COM 11400	
3	PSY 12000 or SOC 10000		3	ECON 25100 (CC)	
3	UC Science		3	UC Science	
2	General Elective or AP/CR by Exam/TR (if necessary)		3	UC Human Cultures (Humanities)	
15			15		
Credits	Fall 2nd Year	Prerequisite	Credits	Spring 2nd Year	Prerequisite
3	MGMT 20000 (CC)		3	MGMT 20100	MGMT 20000 C- or higher
3	CS 23500	MA 15400/MA 15910/ MA 15800/ MA 6500/ MA 22300/MA 16010	3	MGMT 30500	STAT 22500 C- or higher
3	STAT 22500	MA 16020 C- or higher	3	ECON 25200	
3	UC Science, Tech & Society		3	MGMT 25400	
3	General Elective		1	MGMT 29500	Must complete in the first or second year
			2	General Elective	
15			15		
Credits	Fall 3rd Year	Prerequisite	Credits	Spring 3rd Year	Prerequisite
3	MGMT 31000	MGMT 20100 C- & ECON 25100 & STAT 22500 C- or higher	3	MGMT 30600	Pre or co-req MGMT 30500 or STAT 35000 C- or higher
3	MGMT 32400	MGMT 20100 C- & ECON 25100 C- or higher	3	Required Major Selective	
3	OBHR 33000		3	MGMT 35200	MGMT 20100 C- & ECON 25100 C- or higher
3	MGMT 38200	CS 23500 C- or higher	3	ENGL 42000	ENGL 10600 or ENGL 10800
3	Cultural Competency Selective I		3	Cultural Competency Selectives II	
15			15		
Credits	Fall 4th Year	Prerequisite	Credits	Spring 4th Year	Prerequisite
3	MGMT 36100	STAT 22500 C- or higher	3	ECON 38500	
3	MGMT 44428	MGMT 30500 or STAT 35000 C- or higher	3	Required Major Selective	
3	ECON 30100	ECON 25100	3	Required Major Selective	
3	Required Major Selective		3	General Elective	
3	Required Major Selective		3	General Elective	
15			15		
				Total Credits	120

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The student is ultimately responsible for knowing and completing all degree

requirements.   The knowledge source for specific degree requirements and

completion is my[Institution]Plan.

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Appendix 3

Case Study 2: core curriculum MBA

University of South Florida MBA BUSINESS FOUNDATION COURSES

The business foundation courses provide background in several functional areas in order to prepare for more advanced studies. Students who have a recent undergraduate degree or coursework in business may be able to waive some or all of the business foundation courses.

Business Decision Making
- MAN 6055 - Organizational Behavior and Leadership
- ISM 6021 - Management Information Systems

Business Measurement
- ACG 6026 - Accounting Concepts for Managers
- QMB 6305 - Managerial Decision Analysis
- FIN 6406 - Financial Management

Market Orientation
- ECO 6005 - Introduction to Economic Concepts for Managers
- MAR 6815 - Marketing Management

REQUIRED COURSES

Advanced core courses are required courses for every MBA student. No exceptions are granted.
- QMB 6603 - Operations Management and Quality Enhancement
- MAN 6147 - Leadership/Management Concepts
- GEB 6445 - Social, Ethical, Legal Systems
- GEB 6215 - Communication Skills for Managers
- FIN 6466 - Financial Analysis
- MAN 6726 - Strategic Business Analysis
- QMB 6358 - Data Analytics for Business
- GEB 6895 - Integrated Business Applications

Appendix 4

Suggested additional research competencies

(1) Career Research
- Can locate geographically relevant employment information, such as average salary, cost of living and housing information.
- Uses business information in the process of preparation and execution of an interview, a cover letter or for conversations with recruiters.
- Recognizes the value of conducting research into companies, industries, and markets using credible resources.

(2) Decision-Making
- Use information in the decision making process. Information use in decision making includes development of decision making processes, recognition of bias in the

decision making (such as confirmation bias or underreporting) and incorporation of new information.

- Understands how and why information should be used ethically.

(3) Critical Information Evaluation

- Recognizes how information can be manipulated and that authority is constructed.
- Understands the basics of Intellectual Property: how Intellectual Property is created, regulated and ethically used.

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www.