ABSTRACT

Title of Thesis:	EXPLORING WEB CONTENT STRATEGY CURRICULA AND BUSINESS PRACTICES IN INFORMATION SCIENCES
	Laura Gates, MIM, 2016
Directed By:	Dr. Katy Newton Lawley, College of Information Studies

This exploratory study seeks to understand the knowledges, skills, abilities, and other characteristics (KSAOs) within web content strategy. In 2009, the IA Summit officially recognized the discipline of web content strategy; however, discussions on web content strategy date back to as early as 1996 in the early days of the internet. Academia and industry have been working within web content strategy but focus on different subject areas. Industry, for example, has over six working definitions for web content strategy that complement and conflict with one another. Academia instead focused on how to separate software code from content. To determine what KSAOs aligned between academia and industry, course syllabi and job advertisements were collected and coded against formal definitions of KSAOs and a KSAO node framework. Additionally, instructors and professionals were surveyed to provide additional insight on web content strategy KSAOs. The study found that while there were several KSAO nodes in

agreement between industry and academia, survey results alluded to where there is room for KSAOs to improve.

EXPLORING WEB CONTENT STRATEGY CURRICULA AND BUSINESS PRACTICES IN INFORMATION SCIENCES

By

Laura Allison Gates

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Advisory Committee:
Dr. Katy N. Lawley, Chair
Dr. Brian Butler
Dr. Paul T. Jaeger
Dr. Kathy Weaver

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Forward

I am not your average information professional. I do not check many of the boxes that one would expect an information professional to exhibit. I have no interest or lasting passion for computer science, data mining, project management, or human-computer interaction, though I can certainly do many of those things. I am a web content analyst and I am a *forgotten user* who manages web content.

Many websites are built for product owners and consumers but almost never for the people responsible for maintaining the health of millions of websites published online today. I am the person who makes sure you read a title before a paragraph on a webpage and that the paragraph does not stop at 300 characters. I am the translator who speaks the many different languages of project managers, business analysts, software developers, technical writers, user experience experts, subject matter experts, and the product owners on any given website. My boss is a web content strategist. In a perfect world, our job is to make sure that the technical writer can understand what an AJAX script call is in plain language and a software developer can understand why a web form requires conditional fields. Our job is to break down the walls between different teams and think about how content should appear and behave on websites and other platforms.

1 Introduction

Web content strategy has been a growing industry discipline since the 2000s. Despite its acceptance in industry, web content strategy appears to lacking the attention that it deserves in academia. There are teams (or an individual) who are responsible for managing the content of websites within a business or organization, also known as content managers. These people perform a variety of tasks while managing web content. Writing and editing, analytics, information architecture, usability, maintaining a web content management system (WCMS) are just some of the knowledge and skills that these people use on any given day. However, professional development opportunities for these people are limited because their roles within industry is to be proficient at many different specialties. Someone who is a content strategist must understand technical requirements alongside usability, search strategy, and technical writing. A content strategist is able to look at the needs of a website holistically. Many practitioners of web content strategy do not have formalized training for the work that they do. It is also very difficult to find formalized academic training specific to this field in both undergraduate and graduate levels.

Through answering the following research questions, the current status of web content strategy as a discipline can be established:

How does knowledge, skills, abilities (KSAs) from academic courses align with KSAs needed for web content strategy related jobs?

a. What KSAs do instructors teach in web content strategy courses?
b. What web content strategy KSAs are emphasized in professional settings?

The goal of this study is to explore the relationship between academia and industry in within web content strategy and whether or not any gaps exist between the two.

2 Literature Review

2.1 Inconsistent Definitions of Web Content Strategy

There are several different accepted definitions for web content strategy. The lack of a uniform definition for web content strategy makes it difficult for those who practice the discipline to have ownership of their roles and responsibility within an organization. Web content strategy practitioners can use six or more different definitions of web content strategy in their daily activities. One must synthesize the different definitions of web content strategy in order to anticipate the various job functions they may encounter. The six definitions of web content strategy in this section provide a sampling of how diversely web content strategy is defined.

2.1.1 Usability.gov

Usability.gov operates under the Digital Communications Division (DCD) within the U.S. Department of Health and Human Services (HHS). DCD works with other federal organizations, private industry, and other experts to provide the following standards, guidance, and best practices:

- Plain language
- Section 508 accessibility
- Usability
- New media
- Web analytics
- Search engine optimization

- Information architecture (Digital Communications Division, 2015, 2016)

Usability.gov defines web content strategy as:

> Content strategy focuses on the planning, creation, delivery, and governance of content. Content not only includes the words on the page but also the images and multimedia that are used. Ensuring that you have useful and usable content, that is well structured, and easily found is vital to improving the user experience of a website (Usability.gov, 2014).

Usability.gov's definition of web content strategy aligns closely with Kristina Halvorson's book *Content Strategy for the Web* (2012). However, Usability.gov's definition of web content strategy is at a higher level compared to the other four definitions of web content strategy that are reviewed in this section.

2.1.2 Content Strategy for the Web

Kristina Halvorson and Melissa Rach (2012) describe in their book *Content Strategy for the Web* that a good web content strategy has the following elements, also known as the quad framework (quad)[1]:

- **Substance**: What kinds of content do we need (topics, types, sources etc.)? What messages does content need to communicate to our audience?
- **Structure**: How is content prioritized, organized, formatted and displayed? (structure can include

Figure 1: Halvorson's Quad Framework from Content Strategy for the Web (Halvorson & Rach, 2012).

[1] Melissa Rach was not an author on the first edition (2009) of *Content Strategy for the Web*. In other texts the quad framework, or quad, is only referenced to Halvorson and/or her content strategy agency, Brain Traffic. For consistency with other texts, Halvorson will be the only reference when referring to the quad.

information architecture, metadata, data modeling, linking strategies, etc.)

- **Workflow**: What processes, tools, and human resources are required for content initiatives to launch successfully and maintain ongoing quality?
- **Governance**: How are key decisions about content and content strategy made? How are changes initiated and communicated? (Halvorson & Rach, 2012)

Halvorson and Rach's definition of web content strategy breaks the overall strategy into four chunks. They also recommend to frequently audit content, understand audiences, and document processes (such as creating a style guide) (Halvorson & Rach, 2012).

2.1.3 The Content Strategy Toolkit

Meghan Casey who authored *The Content Strategy Toolkit* (2015), believes that "Content strategy helps organizations provide the right content, to the people, at the all times, for the right reasons" (Casey, 2015, p. xxiv). When Casey refers to "the right reasons", she refers to the purpose of the content on any particular website. Content, according to Casey, must have a goal that it needs to achieve. Without this goal, it is difficult to create a lifecycle for the content that needs to be created. That lifecycle may include creation, publication, maintenance, and other elements that are pertinent to that goal (Casey, 2015).

2.1.4 The Digital Crown

Ahava Leibtag, author of *The Digital Crown: Winning at Content on the Web* (2014) describes web content strategy as, "a production cycle for creating and managing digital content" (p.14). Leibtag prefers to coin web content strategy as digital strategy and asserts that, "content is conversation. (p. 157)" She stresses that you cannot toss files onto the internet and call it a website. Leibtag states that all content on a website including images, video, infographics, and other media needs to mesh with the overall needs and goals of websites (Leibtag, 2014).

2.1.5 Letting Go of the Words

Similarly to Leibtag, Ginny Redish believes that people use websites and their content to complete tasks. They want their information to be:

- Easy to find
- Easy to understand
- Accurate
- Up to date
- Creditable (Redish, 2014)

Figure 2: Redish's Stool Diagram from *Letting Go of the Words* (Redish, 2014).

Redish demonstrates with her stool diagram that content needs to work with technology in order for users to obtain content. Her diagram helps to explain that the bones of a webpage, such as navigation, search tools, design, etc. are critical to how users find information on websites. Redish believes that websites should not have the goal to be flashy; rather the goal should be whether or not users can find the information they are seeking (Redish, 2014).

2.1.6 Content Strategy at Work

Content Strategy at Work: Real-world Stories to Strengthen Every Interactive Project (2012) by Margot Bloomstein defines web content strategy as, "smart choices [made] to ensure

the content types, tone, and media in an experience support the experience in a way that's appropriate to the brand and is useful to its audience" (Bloomstein, 2012, p.4).

2.2 Analysis of the Definitions

When these six web content strategy definitions are compared side-by-side there are some general themes that can be extracted when they are reviewed as a group. Firstly, Halvorson and Redish both choose to break their web content strategy definitions into chunks. Halverson creates a quad that focuses on substance, structure, workflow, and governance while Redish focuses on navigation, design, search, and technology. Both Halverson and Redish recognize that there are many facets within web content strategy and that the parts make up the whole strategy (Halvorson & Rach, 2012; Redish, 2014). Similarly, Casey and Usability.gov agree with Halvorson's quad approach. Casey chooses to focus on web content strategy as a goal and Usability.gov treats web content strategy as a part of delivering a good user experience. (Casey, 2015; Usability.gov, 2014). Additionally, Bloomstein's definition follows closely to Casey and Usability.gov's definition but does not follow Halverson's quad approach. Most notably, Bloomstein's remarks about "smart choices" and for those choices to be "appropriate" makes her definition standout for providing a good user experience (Bloomstein, 2012).

	Usability.gov	Halvorson & Rach	Casey	Leibtag	Redish	Bloomstein
Content Development	✓	✓	✓	✓	✓	✓
Web Development	✓		✓	✓	✓	
User Experience	✓				✓	✓
Information Architecture		✓				
Content Lifecycle		✓	✓	✓		
Design					✓	
Search & SEO		✓			✓	
Project Management	✓	✓		✓		

Table 1: Comparison of web content strategy definitions

In contrast to Casey (2015), Halverson & Rach (2012), Usability.gov (2014), Leibtag is assertive that web content strategy was about conversations (2014). Leibtag's methodology is very similar to that of Redish (2014) who also believes that conversations are at the core of any good web content strategy. Additionally, Redish goes a step forward compared to the other definitions to demonstrate that content needs to be compatible with technology in order for users to obtain content (2014).

Though Bloomstein (2012), Casey (2015), Halvorson & Rach (2012), Leibtag (2014), Redish (2014), Usability.gov (2014) have their own unique takes on web content strategy, which definition is better? All six definitions, while slightly different, do complement each other. It is easy to understand how the discipline of web content strategy can be difficult to understand based on the variations of verbiage, usage, and scope used by each author. From these definitions, it is clear that web content strategy focuses on all of the following:

- Web and software development

- Project management
- Information architecture (IA)
- Visual design
- Content development (writing, editing, governance policies, etc.)
- User experience
- Search & SEO
- Content lifecycle

Though Halverson's use of the quad stresses the need for web content strategy to be systematic and well-documented, Redish does make the stronger argument that websites need a strong infrastructure in order for content to be usable (Halvorson & Rach, 2012; Redish, 2014). All websites depend on infrastructure to work in ways that support all of the other activities needed to produce content. Additionally, Halvorson & Rach (2012), Leibtag (2014), Redish (2014), Usability.gov (2014) tend to focus on specific content items whereas Bloomstein (2012), Casey (2015) tend to focus on the goals and "smart choices" when creating content.

In 2009, web content strategy became established enough where web content strategy professionals gathered to try to come up with a singular definition for web content strategy at the annual IA Summit. Twenty-two industry participants gathered from a variety of organizations to discuss web content strategy as a discipline. What emerged was the following definition:

> "Content strategy is the practice of planning for the creation, delivery, and governance of useful, usable content" (Bloomstein, 2012; Melendy & Lovinger, 2009).

Two years later at Confab 2011, the definition of web content strategy was under the microscope again and discussion of web content strategy as storytelling emerged (Bloomstein, 2012). Today

there is still a lack of singular definition for web content strategy. One can research back all the way to 1996 when Bill Gates published an article titled “Content is King” on Microsoft’s website. In the article, Gates discussed how the internet is going to change how the world interacts with content. Gates predicted that there would eventually be a shift to online content access and that “the Internet is the multimedia equivalent of the photocopier”(Gates, 1996). Gates’ prediction that online content would replace print content was correct and with all of the content floating around on the internet, there needs to be a way to manage it. The “how” behind managing content online was managed became a focus in academia rather than contributing to the emerging definitions of web content strategy.

2.3 Development of Web Content Strategy Products & Processes

While the print media industry was figuring out how to shift from print to online content, technology companies and academic researchers were focused on how to house and manage content online. As Gates noted in his 1996 “Content is King” article there needed to be a way for content to be managed online. On the heels of Gates’ prediction, academics narrowed in on the need to manage content online through separating content from technical infrastructure.

2.3.1 Introduction of Content Management Systems (CMS)

Content Management Systems (CMS) were developed out of the need for non-technical people to be able to add and maintain content on a website or application that they did not build themselves (Clark, 2007; Huizingh, 2000; Mescan, 2004; Nordheim & Päivärinta, 2006). Today, CMS’ are also referred to as Web Content Management Systems (WCMS) and there are several brands[2] of WCMS that can be easily adopted by organizations. However, twenty years ago, there

[2] Drupal, WordPress, Joomla, and Kentico are popular branded WCMS platforms that allow content management to be separated from technical infrastructure. Some WCMS’ are open source and others require a fee; there are also

was no “one fits all” solution for CMS’. By 2004, there were five different types of CMS’ available on the market:

- **Web Content Management**: Known as a WCMS with today’s terminology, focuses on managing web pages and not much else.
- **Digital Asset Management**: A central repository for storing and indexing graphics. This repository would also be searchable.
- **Document Management**: Another repository to store entire documents. This too was indexed and searchable.
- **Enterprise Content Management**: What Mescan considered a “buzzword” since it was developing in 2004. Mescan classified it as strategy rather than a solution.
- **Single-Source Content Management**: A repository that stored multiple file formats that included documents, media (sound and video), and graphics. This system also tended to support more than one language. (Mescan, 2004)

By 2007, the five formats decreased to four as technology evolved:

- **Document Management:** became known popularly as a DMS. It evolved to encompass written documents and other formats such as images. The shift with a DMS also started start to focus on the metadata of a file, such as time stamp, file size, title, etc. The focus on metadata improved search and indexing of data. Digital assets and documents can now be contained in a single platform.
- **Web Content Management System (Web CMS or WCMS)**: this type of CMS is starting to come into its own with platforms like Drupal becoming popular. The WCMS

WCMS’ that are “homegrown” custom-code. In many cases, it is common for a WCMS to be referred to by its brand name.

allows for customization while preventing unauthorized users from accessing developer code.

- **Content Management System (CMS)**: Focuses on metadata and breaking content into levels that are more granular. This is what single-source content management became.
- **Enterprise Content Management (ECM)**: has had time to mature since 2004. It is now considered a one-stop-shop for web, documents, e-mail, record keeping, etc. for an entire organization. (Clark, 2007)

In a span of three years, content management systems matured and became clear and distinct in their usage. An ECM can be connected to the philosophy behind web content strategy because of its need to have everything contained in a uniform system. ECMs are responsible for connecting entire organizations globally so that employees can perform their duties without having to use multiple software systems. The ECM needed to meet the needs of various audiences within a singular organization (Nordheim & Päivärinta, 2006). For example, an accountant who manages payroll and a manager who works in product development do completely different things; however, they both may use the same tools to perform their duties. The need for an ECM is much like the need for web content strategy; information professionals must know their audience.

2.3.2 Separation of Content from Software Code

The need to separate software code from content was being explored in the 2000s. As examined by (Clark, 2007), the separation of content from code helped ensure consistency in presentation on a website. Information appears more reliable to the user if the use of white space, page structure, text, etc. is cohesive. Standardization of how content is displayed in conjunction with a clear navigational menu makes for a more usable website. A simple tree structure is often

the best solution for any website (Clark, 2007; Huizingh, 2000). A tree structure navigation is much the same as how users organize files on their computers today. Usually, in a tree structure, a master folder containing subfolders and sub-files is easy to navigate from one folder to another (Norman & Chin, 1988).

2.3.3 Early Web Content Strategy Practices

There was also some web content strategy work in the early 2000s; however, it was not labeled as web content strategy. Eschenfelder (2004a, 2004b), conducted exploratory research on factors that affect how content is published and managed within state government agencies. While Eschenfelder's specialty is digital rights management and information access (Wisconsin–Madison, 2016), her work does provide insight into why web content strategy is needed as a discipline.

(Eschenfelder, 2004a) work focuses on governance—policies on how and why content needs to be maintained. Her study examines two content facets within a government agency. The first facet is the opinions of staff who work with content being posted on the agency website:

- **Format:** Is it worthwhile to maintain a document as a PDF and comply with federal and state Section 508 accessibility standards[3] or to integrate the document as an HTML page on the agency website? Transforming a PDF to a HTML page does improve search-engine optimization but also has maintenance implications if the content on the page changes frequently.

[3] Section 508 accessibility standards help to ensure that users with disabilities, such as someone who is visually impaired, can access information with assistive technology, such as a screen reader (U.S. Department of Health & Human Services, 2015; United States Access Board, n.d.). There is also a non-United States government mandate for accessibility compliance known as the Web Content Accessibility Guidelines (WCAG) (World Wide Web Consortium, 2012).

- **Style age:** also known as evergreen content, in industry, is content that stays fresh and relevant no matter the age. However, it is common for some maintenance to be made with this type of content to ensure that the style of the content met changing style standards.
- **Rate/degree of change:** How often a content item has to be modified or changed. These changes can be simple or complex. However, complex changes often need to go through an approval cycle before updated content can be published on the agency website.
- **Owner:** Who owns the content? The content owner (CO) or subject matter expert (SME) is responsible for generating the original content and is usually not the person publishing said content to the agency website. The CO can also be too close to the content, thus making it difficult for the web staffer to curate a representative sample of content needed for the website.
- **Sensitivity:** Wording of content is extremely important for government agencies. Many agencies struggle with posting content that could be considered controversial. There must be an understanding of the politics behind specific pieces of content and a degree of patience is needed while vetting and approving sensitive content (Eschenfelder, 2004a).

The second facet is external pressures that affect the production of content focuses on pressures that extend beyond the web team within a state agency. These pressures include, but are not limited to, public inquiries, politics among leading officials, existing maintenance burdens, and program and educational goals (Eschenfelder, 2004a). These external pressures affect how content is produced and managed.

2.4 Insights to how an Academia Library is Applying Web Content Strategy Best Practices

Blakiston & Mayden (2015) provide some insight as to how industry and academia handle web content—particularly with how that content was refreshed over time. Libraries in the 1990s, according to (Blakiston & Mayden, 2015), were once considered to be trailblazers in the early days of the internet. Libraries had funding and launched many of the first publicly available websites. Many websites that have been around since the 1990s have had considerable updates, including changes to IA, navigation, and full scale redesigns. Over time, large organizations such as academic libraries became "bloated" and "[m]uch of the deeper content on [the University of Arizona's] main [library] website and research guides had seen little change, in some cases mirroring handouts that predated the web era" (Blakiston & Mayden, 2015).

Regular maintenance tasks, such as maintaining a style guide[4] and conducting regular content audits,[5] can often be deprioritized and thus cause the "bloating" effect on content. The main goal of (Blakiston & Mayden, 2015) work, however, was to demonstrate why the University of Arizona (UA) needed a content strategist when the university made the shift from Drupal 6 to Drupal 7. UA struggled to find content strategists and examples of good web content strategy at other universities. They only found eight job postings, and only six were compatible with UA's mission: Cornell University, Ball State, College of New Rochelle, Harvard Medical School, Simmons College, and DePaul University. In contrast, a quick Google search yields over 100,000 results for "web content strategist jobs," most of which are in industry. (Blakiston & Mayden, 2015) also found that the majority of their applicants for their web content strategy

[4] "Style guide" is more commonplace language than "editorial standards" within industry. Both terms share the same definition. For consistency, I will defer to the industry terminology.
[5] "Content audits" and "content inventories" are often used interchangeably and do mean the same thing. Generally, "content audits" is used more in the past or present tense and "content inventories" is mostly used in the future tense. For the purposes of this paper, I will follow this model.

position had a strong web development or web design background. However, UA wanted someone who had both design and development skills and that was very difficult for them to find (Blakiston & Mayden, 2015).

(Blakiston & Mayden, 2015)'s findings confirm the disconnect between industry and academia in regards to web content strategy. One can extrapolate that businesses were able to find bloated content earlier than their academic peers. Additionally, funding and other priorities are likely candidates for why academia can lag behind industry when practicing web content strategy. Moreover, academic representation appeared to have been missing from the 2009 IA Summit; there was representation industry and government, however, who participated in the creation of the first definition for web content strategy. However, academic experts appear to be excluded from the representation of web content strategy experts (Bloomstein, 2012). This exclusion of web content strategy academics further supports the history of academia and industry not working together to ensure the health of this discipline.

3 Study Design and Methodology

3.1 Approach and Rationale

This research study blended narrative and case study design with common industry assessment techniques. The study is exploratory and seeks to understand relationship between industry and academia within web content strategy. Additionally, this study aims to discover any gaps that may exist in the current relationship between industry and academia within this discipline. There are unknowns in this field is perceived in their respective communities. Thus, the relationship between industry and academia is not yet fully understood. Another expect outcome of this study is to discovery other areas of research within this field. Because this study

is a blend of qualitative methodologies and industry assessment, this study will be all also include an industry assessment technique called gap analysis.

3.1.1 Gap Analysis

Gap analysis is commonly known as a needs assessment. A gap analysis is a common industry technique used to determine what is missing from a goal, deliverable, service, or product. Gap analysis can be applied to many different activities, from project management to software development. All gap analyses should be structured around the following goals and status:

- Current status
- What is missing (the gaps)
- What needs to be done
- What is the end goal (Viana, 2016; WebFinance Inc., 2016)

3.2 Knowledge, Skills, Abilities and Other Characteristics (KSAOs)

Both industry and academia have requirements for how one should be able to perform on the job or in the classroom. These requirements do not always align across industry or academia but these requirements are always measurable. In industry, it is common for employers to hold performance assessments for employees. In academia, course material and assessments are aligned to course learning objectives. Though the acts of measuring performance are similar in industry and academia, the labels for such acts are different. In order for data collection and analysis to be fair, standardized performance characteristics needed to be identified for this study. This study utilizes the knowledge, skills, abilities and other characteristics (KSAOs), model for data collection and analysis.

The use of KSAOs have been used traditionally by the U.S. Federal Government and the Office of Personnel Management (OPM) until President Obama called for the modernization of OPM's hiring practices (Berry, 2010; Davidson, 2010). Nevertheless, KSAOs are recognized as a national job performance model and are utilized by both academia and industry. The Blackwell Encyclopedia of Management and by the American Psychological Association (APA) provide formalized definitions of KSAOs. The APA's use of KSAOs stems from when O*Net[6] was developed by the U.S. Department of Labor (Peterson, Mumford, Borman, Jeanneret, & Fleishman, 1999; U.S. Department of Labor, n.d.). The APA's definition of KSAOs provides this study with an industry definition of KSAOs. Additionally, the Blackwell Encyclopedia of Management was developed by scholars and instructors providing the academic definition of KSAOs. Likewise, the Blackwell Encyclopedia of Management takes a more concise approach to defining KSAOs than APA's version. The Blackwell Encyclopedia of Management defines KSAOs as the following:

- **Knowledge**: is what a person knows that is relevant to the job.
- **Skill**: is what a person is able to do on the job. This includes both mental tasks and physical tasks.
- **Ability**: include mental abilities, physical abilities, and psychomotor abilities.
- **Other Characteristics**: are other personal characteristics, not covered by knowledge, skill, or ability, attitudes, beliefs, personality characteristics, temperaments, and values (Specter, 2005).

[6] https://www.onetonline.org/

The APA's evaluation of job performance competencies support the Blackwell Encyclopedia of Management definition of KSAOs. APA recognizes that knowledge, skill, and ability are core competencies of measuring job performance. Additionally, APA makes a point in stating, "skills are more dependent on learning" whereas abilities "develop over time with exposure to multiple situations" (Peterson et al., 1999). APA's discussion of skill and ability in particular clarify that an ability must develop over time through exposure and reputation.

3.2.1 Excluding "Other Characteristics"

Analyzing "other characteristics" did not have an impact on how job and course data was coded or analyzed since personal characteristics are not measurable within the scope of this study. Other characteristics presented in syllabi and job advertisements were in many cases personality traits. Some traits described by instructors and employers were for people to be the following:

- "Self-starter[s], quick learner[s], able to work independently…"
- "[P]roactive and think[s] strategically"
- "Superior interpersonal, communication, and presentation skills"
- "Extraordinary attention to detail and quality"
- "[B]right, creative, [and] detail-obsessed"

If other characteristics were not personality traits, they were related to generic or baseline qualifications. Many of these qualifications were also like each other:

- "Bachelor's degree in a web, marketing, computer or writing related field"
- "3 years' experience managing content and production for high traffic websites"

One's personality, academic degree, or previous work experience does not equate to a measurable knowledge, skill, or ability (KSA). If an employer wants someone with 3 years' experience managing content and production for high traffic websites, they know that they want to find someone who has been employed for at least three years and who did something with web content. However, it is unknown exactly what that individual did with content and therefore it is not a measurable skill or ability.

Other characteristics give voice to the type of person an instructor wants in the classroom or as an employee, but does not measure the capacity of the person to learn or perform tasks on the job. For these above reasons "other characteristics" must be excluded from use in this study. This exclusion does not mean that "other characteristics" are not important towards measuring the value of an individual or individuals who exhibit these "other characteristics" in the field. Rather "other characteristics" are difficult to measure accurately and without bias and should not be used for its potential to negatively skew data.

3.3 Restatement of Research Questions

How do knowledge, skills, abilities and other characteristics (KSAs) from academic courses align with KSAs needed for web content strategy related jobs?

a. What KSAs do instructors teach in web content strategy courses?
b. What web content strategy KSAs are emphasized in professional settings?

3.4 Data Collection

3.4.1 Course Materials and Participant Recruitment

The primary method for collection of course materials was publicly indexed online course syllabi. Instructors who teach these courses were then recruited to participate in the survey and to supply course materials for this study.

3.4.1.1 Gathering Course Materials

Course syllabi were collected using Google search. The initial search for "content strategy syllabus" yielded 28,700 possible results. "Content strategy" was searched for instead of "web content strategy" because it created a broader bucket of syllabi than with "web content strategy" alone. Google's advanced search functionality afforded a broader keyword search because its ability to search by site, domain, language, file type, and other facets. The advanced Google search used the following search string:[7]

```
syllabus "content strategy" site:.edu
```

The advanced search narrowed the 28,700 results to 170. In addition to the advanced search string, the geographic location for syllabi was set to the United States and for only results in English to be displayed. The initial 170 results were then sorted to 60 possible syllabi results for closer examination. Of the 110 search results that were initially excluded, many were duplicates, schedule of classes, faculty and student news, incorrect discipline, link rot, or from hitting a password wall.[8]

3.4.1.2 Excluding Syllabi

The 60 syllabi were examined and narrowed to a list of 33 syllabi that were then coded. The exclusions for syllabi focused on subject matter and robustness of the resource.

3.4.1.2.1 Excluding Similar Subject Areas

Twenty-seven syllabi were excluded because they were not a similar enough discipline to web content strategy. As seen in Table 2, these exclusions included educational technology, journalism, and typography, among others. However, the largest subject area for exclusions was

[7] See Appendix A

[8] Some of the more notable exclusions from the initial evaluation for the 110 search results included: marketing for Christian ministry, K-12 reading comprehension, reading in the content fields pedagogy, public relations, and FAQ sheets about syllabi banks and how to develop university courses

within the field of marketing. Marketing is a field that does share some subject areas with content strategy. For example, branding, SEO, and analytics can often apply to both fields.

Subject Area	Number of Exclusions
404 Error	4
Change Management	1
Computer Science	1
Digital Publishing/ Journalism	3
Educational Technology	1
Marketing	9
Not Robust; Missing Pedagogical Data	6
Supply Chain Development	1
Graphic Design	1
Total Exclusions	27

Table 2: Summary of syllabi exclusions

If syllabi contained shared subject topics, they were coded in this study. The most common shared Marketing topics found in syllabi were SEO and branding. For a syllabus to be codded, it had to have two or more topics in a web focused marketing class. Branding and SEO, for example, were usually presented in two different ways. The first way branding and SEO were taught was in e-commerce and customer acquisition type courses. These topics were taught in a way where the student was learning to retain returning customers. The second way branding and SEO were used in marketing classes leaned more towards usability and user experiences. SEO was more about seeing where customers traveled on a website rather than how to sell more effectively. Additionally, branding was focused on making logos and other design features recognizable and relatable to consumers. The second way that branding and SEO were taught are frequently used within web content strategy, and thus were coded. The distinguishing factor between these two types was whether the syllabus focused on building commerce or a user's experience while shopping. Nevertheless, if a syllabus contained marketing specific subjects that did not lean towards a user's experience, it was excluded. For example, five of the excluded

marketing syllabi included, “inbound marketing,” “market research,” and “artificial intelligence marketing (AIM)” and were excluded from the study.

Digital publishing and graphic design were two other subject areas that pulled in search results. Similarly, to marketing, digital publishing and graphic design can also share subject areas with web content strategy. One digital publishing course that appeared in the search results discussed how magazines production when from print to Adobe Illustrator. The course’s focus was in creating digital magazine page templates in Illustrator and thus was excluded from the study. Graphic design courses were excluded when syllabi discussed print media and advertising. Digital publishing and graphic designs syllabi were kept when they discussed topics like branding, visual design, writing for the web, etc.

3.4.1.2.2 Selecting Robust Syllabi

The robustness of syllabi affected whether or not it was excluded in this study. Several syllabi were excluded for lacking its source university and/or instructor. The university branding or instructor’s email address allowed the document to be verified as a syllabus. Additionally, the university branding allowed for an updated version of a course syllabus to be located, if available. Three syllabi were also excluded because they did not provide a robust description of the course the document was describing. Additionally, three syllabi excluded because they were reading lists with 350-character course descriptions. If syllabi did not contain pedagogical information, it was excluded. Syllabi that contained pedagogical information such as, course learning objectives, assignments, lab work, and course descriptions were kept.

3.4.2 Instructor Participant Recruitment

Course instructors were recruited via email from the 33 syllabi that were kept for further analysis. In the recruitment letter,[9] instructors were requested to participate in a written survey[10] and asked to share their course's materials as a part of the data call for this study. A written survey, distributed by an online survey tool, was chosen for this study because it was the most flexible method to reach out to instructors. The instructors that were recruited were located throughout the United States and like most professionals have limited availability to interact with on the phone or face-to-face.

During the recruitment process, 12 possible participants responded back with comments whether or not they would take the survey and/or provide course materials. One respondent stated that she had retired and no longer teaches the course. Two more respondents who co-taught the same course said that their course was no longer offered after it was initially piloted. Overall, 10 instructors started the written survey but only six completed it.

When examining the fall-off data for the written survey given to instructors, it appears that the three participants who dropped off at the second question. These participants may have missed that the survey was written when scanning the recruitment email.

[9] See Appendix B
[10] See Appendix C

Survey Page	Participant Fall-off	% Who Left Survey
Page 1: IRB Human Subject Research Statement	0 Left	0%
Page 2: Publication Consent	0 Left	0%
Page 3: Content information if participant wished to be identified	1 Left	10%
Page 4: Consent to participate in study	0 Left	0%
Page 5: Question 1	0 Left	0%
Page 6: Questions 2 & 2a	3 Left	30%
Page 7: Questions 3–5	0 Left	0%
Page 8: Questions 6, 6a, & 6b	0 Left	0%
Page 9: Questions 7, 7a, & 7b	0 Left	0%
Page 10: Questions 8 & 8a	0 Left	0%
Page 11: Exit info	0 Left	0%

Table 3: Fall-Off Data for Instructor Written Survey

The remaining six participants were able to complete the written survey successfully. Care was taken when the survey and data calls went out to instructors. The recruitment emails were sent out at the start of the fall 2016 semester. This study aimed to recruit instructors when they would not yet be heavily involved in the day-to-day administration of their classes and students.

3.4.3 Job Advertisements and Participant Recruitment

Job-hunting websites like Indeed, LinkedIn, Monster, Glassdoor, etc. are popular search tools when one is seeking employment. These sites contain millions of jobs that users can filter through at any given moment. Social media is another tool where professionals can network and share ideas with one another.

3.4.3.1 Gathering Job Advertisements

Since many job-hunting websites are commercial, gaining permission to use content from their website in a study or publication is required. This study reached out to Indeed.com,

LinkedIn.com, and Monster.com for permission to use their job advertisements for this study.[11] Monster.com was the only website that gave me permission to use their content for this study.[12]

"Web content strategy" and "web content strategist" were two search terms used on Monster.com to look up job advertisements. Searching by "content strategy" and "content strategist" yielded over 2,000 search results.[13] Since Monster.com does not have the same search functionality as Google.com, using a two-term search was able for "web content strategy" and "web content strategist" yielded 214 search results. The 214 search results were then narrowed to 55 results for further analysis.

3.4.3.2 Excluding Job Advertisements

Job advertisements were primarily excluded based on relevance and the ability to preserve the advertisement as a PDF.[14] If the job advertised could not be saved in a readable format, it was excluded. This activity resulted in 32 job advertisements that were preserved for this study. However, there were three Monster.com job advertisements were excluded because the page was customized by an employer and did not successfully convert to a PDF.

Job advertisements were also analyzed for their robustness. Eleven generic job advertisements were excluded because they did not provide anticipated job duties. These 11 job advertisements did contain relevant experience, minimum experience, and/or software knowledge. However, this information is only useful when the advertisement provides job duties

[11] Glassdoor was excluded from use in this study because they coded their website in a manner that did not allow printing to a PDF. Printing to PDF in order to preserve formatting of web content is a great way to preserve data without worry of losing formatting. MS Word was also considered but there is a risk of missing content when it is copied and pasted from a webpage into a word document.

[12] See Appendix D

[13] Monster.com does not provide exact number of search results and maxes out at "1000+".

[14] The ability to preserve the job advertisement in a readable format was critical to the success of this study. Job advertisements typically have a life span associated with the advertisement. In many cases, once the job is filled the advertisement will be removed.

that that enhance the importance of prior experiences and software knowledge's. Likewise, eight content marketing jobs that were in job advertisement search results were excluded in this study, in addition to one advertisement for a SharePoint administrator. The process for excluding these 8 marketing advertisements followed the same exclusion criteria for course syllabi.

Subject Area	Number of Exclusions
Did not convert to PDF	3
Marketing	8
Not Robust	11
SharePoint Administrator	1
Total Exclusions	23

Table 4: summary of job advertisement exclusions

Marketing job advertisements were kept if the advertisement had web content strategy topics that were user experience focused. This criteria was important when marketing job advertisements sought candidates to perform SEO and branding tasks. Six marketing jobs were excluded because they were focused on market research, purchasing ad space, and/or storefront performance. Another two-excluded job advertisements sought a candidate who specialized in marketing automation technologies.

3.4.4 Professional Participant Recruitment

Recruitment for the professional written survey[15] was focused via social media on MeetUp.com and LinkedIn. These sites were targeted because each host web content strategy professional organizations targeted on networking and professional development. Using MeetUp and LinkedIn provided greater opportunities to reach more participants across the United States than through networking opportunities in the Washington D.C.—Baltimore metropolitan areas alone.

[15] See Appendix E

On MeetUp.com, recruitment letters[16] were distributed to web content strategy meetup organizers via private message to ask for permission to post the survey to their meetup's message boards. If approved by the organizer, the recruitment letter with the link to the written survey was posted to the message board. The same permissions process was repeated for LinkedIn's web content strategy groups.

Forty-two people participated in the professional web content strategy written survey with 16 completed responses. However, there was one participant exclusion because the participant discussed content marketing topics in their written survey.[17] The fall-off point for the professional written survey is at the same place as the instructor written survey, confirming that most people dropped off when they saw that the survey responses were open-ended.

Survey Page	Participant Fall-off	% Who Left Survey
Page 1: IRB Human Subject Research Statement	0 Left	0%
Page 2: Publication Consent	3 Left	7%
Page 3: Content information if participant wished to be identified	2 Left	5%
Page 4: Consent to participate in study	0 Left	0%
Page 5: Questions 1-3	17 Left	40%
Page 6: Questions 4-5	0 Left	0%
Page 7: Questions 6 & 6a	1 Left	2%
Page 8: Questions 7-8	0 Left	0%
Page 9: Questions 9 & 9a	0 Left	0%
Page 10: Question 10	1 Left	2%
Page 11: Exit info	1 Left	2%

Table 5: Fall-Off Data for Professional Written Survey

[16] See Appendix F

[17] Content marketing and web content strategy are not the same discipline. This participant defined knowledges for the field as "Buyer Personas, Buyers Journey, Storytelling, Market Research, and Inbound Marketing". These knowledges are not qualities of web content strategy.

3.4.5 Coding Data

Data collected through the collection of syllabi, job advertisements, instructor survey data, and professional survey data were coded using NVivo, a qualitative analysis software tool. These sources were kept in their own folders in order to facilitate running queries in NVivo.

3.4.5.1 KSA Node Framework

A framework of 15 domain nodes[18] was established under the facets of knowledge, skills, and abilities. Each facet was its own node and had identical domain nodes within framework. Domains also contained terms and sub-term nodes. The node framework was setup as the following:

- **Content Analysis**: review and assessment of content, performing content audits, site crawls, etc.
- **Content Development**: content creation, editorial, marketing, and social media
- **Content Lifecycle**: operations and maintenance (O&M), workflow, publishing processes, etc.
- **Content Performance**: analytics, search, and search-engine optimization (SEO)
- **Content Style Guide**: governance and branding
- **Design**: Responsive design and visual design
- **Information Architecture**: taxonomy, site maps, metadata

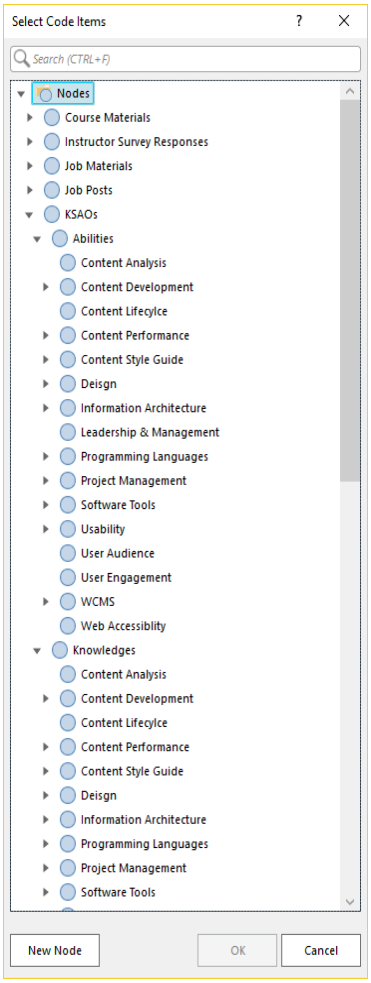


Figure 3: KSA Node Framework as seen in NVivo

[18] Nodes are containers of information that one can tag content to. Using nodes to tag content allows for trends or patterns to be discovered in qualitative research. Columbia University has an informative wiki that complements Nvivo's programmatic help guide (Columbia University Libraries, 2016; QSR International, 2016).

- **Leadership & Management**: subject matter expert (SME), leading tasks or teams, provides training to others, etc.
- **Programing Languages**: HTML, CSS, PHP, JavaScript, etc.
- **Project Management**: project plan, business process and goals, scope of work, etc.
- **Software Tools**: MS Office, Photoshop, Github, etc.
- **Usability**: user experience, user centered design (UCD) usability testing, stakeholder interviews, etc.
- **User Audience**: targeting or studying users
- **User Engagement**: measuring what motivates users; decision making
- **Web Content Management Systems (WCMS)**: Drupal, WordPress, Oracle UCM, etc.
- **Web Accessibility**: Section 508 and Web Content Accessibility Guidelines (WCAG)

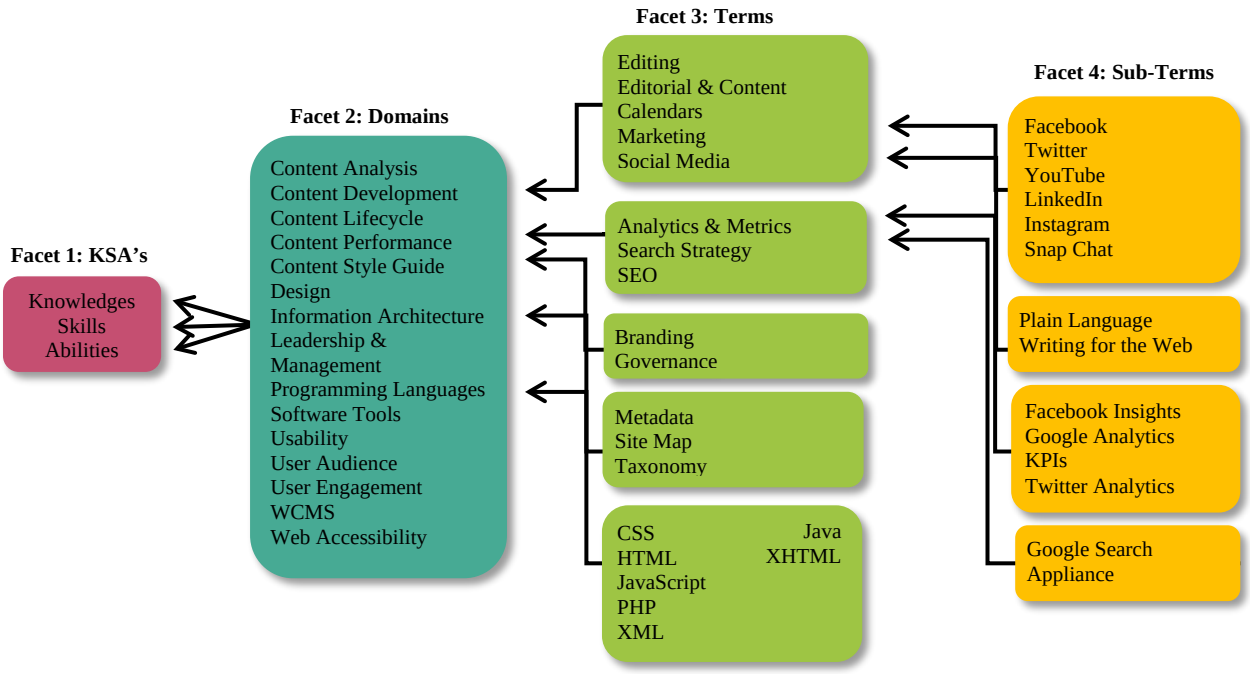


Figure 4: Section of the KSA Node Framework displaying domains, terms, and sub-terms

Additionally, these first-level nodes under KSAOs had their own child nodes within the framework; such as, "Information Architecture" are "Taxonomy," "Site Maps," and "Metadata"

within the node framework. All KSAO coding was keyword-based with action words and verbs making the distinction between where an item would be coded.

3.4.5.2 Coding Skills vs. Abilities

Coding was largely based on keyword usage for tagging nodes within the KSAO framework. The assistance of formalized KSAO definitions assisted in categories where an item was coded. The formalized definition was particularly useful when making the distinction between a skill and an ability. Using a content audit as an example, “conduct an audit of current web content and make recommendations for new content” was considered a skill. The process of conducting an audit and providing recommendations is focused around a task. In contrast to a skill, “demonstrate an ability to analyze data and select appropriate metrics for measuring the success of online content” was considered an ability. The use of the word “demonstrate,” for example, provides insight that the skill to “analyze data and select appropriate metrics for measuring the success of online content” has been completed enough times that it is considered to be an ability. “Employ,” “Exhibit,” “Direct,” “Lead,” “Train,” “Administer,” and “Execute” were other action words that industry and academia used to differentiate a skill from an ability.

4 Findings and Results

4.1 Data Agreement

Before findings for this study can be applied, it is important to understand all of the numerical data presented is a result from coding qualitative data. When analyzing data for this section, a trend became noticeable where there were always 2-3 coded domains that were the most frequently coded for KSA facets. Moreover, the most 2-3 coded domains were often the same coded domains for academic and industry materials across the KSA facets. For example, the content development domain was coded frequently for academic and industry sources among

KSA facets. However, the level of agreement of coded domains often starts to decline after the top three most coded domains. This is because coded domain results start to be identical with one another. For example, in Table 7, seen below, there are 5 domains each coded at 5%. These domains coded at 5% have either identical or were within a hundredth of a percent from one another. Thus the ability to analyze these nodes becomes difficult.

Additionally, the degree of parallelism between different KSA facets and data sources was also important for data agreeing within this study. Parallelism between domains occurs when they are coded similarly, if not identical to, academic and industry sources and/or within KSA facets. For example, the content performance domain from course syllabi knowledges (14%) is parallel with the content performance domain from job advertisement knowledges (13%) because they were each coded as similarly one another despite being from different data sources.

Furthermore, how KSAs were defined in Section 3.2, was also important to the corroboration of findings in this study. The KSA facets were coded per the following:

- **Knowledges** are basic concepts that a person needs to know in order to complete a task correctly. Knowledges domains and terms were coded by keyword within passages. For example, a person needs to know what a taxonomy is and why it is used before they are given a task to create one—that is a knowledge. Knowledges were also coded based whether or not someone learned what something was and if the individual could define it (Peterson et al., 1999; Specter, 2005).
- **Skills** as previously defined in places knowledge into practice. Skills depend on the ability to learn, and skills dependent on knowledges learned from academia and/or industry. (Peterson et al., 1999; Specter, 2005).

- **Abilities** are skills that form over time through repetition and can be mental, physical, or psychomotor. Someone who has become an expert at a skill is should consider that skill be an ability. (Peterson et al., 1999; Specter, 2005).

4.2 Findings

4.2.1 What KSAs do instructors teach in web content strategy courses?

4.2.1.1 Knowledges

Syllabi that were coded in this study suggest that the content development (17%), usability (15%), and content performance (14%) domain were the most knowledges taught in the classroom. Information architecture (8%) and content analysis (7%) were also frequently coded passages within course syllabi.

	Course Syllabi Knowledge Results	% of Total Syllabi Course Knowledges
Content Analysis	37	7%
Content Development	93	17%
Content Lifecycle	28	5%
Content Performance	80	14%
Content Style Guide	21	4%
Design	56	10%
Information Architecture	46	8%
Programming Languages	24	4%
Project Management	32	6%
Software Tools	1	0%
Usability	86	15%
User Audience	30	5%
User Engagement	4	1%
WCMS	14	2%
Web Accessibility	9	2%
Total Coded Passages	561	

Table 6: Coded course syllabi within the knowledge facet

When reviewing the top three coded domains in more detail, it becomes easier to distinguish why passages were coded under their assigned facet. For example, when reviewing the Content performance domain there was a focus on why analytics and SEO are important on the web.

Additionally, when reviewing the content development domain, writing was the most coded term. Students were instructed to understand the following when specific writing knowledges were given:

- Writing for the Web
- Plain Language
- Informative, persuasive, and narrative writing
- Scannability and chunking of content

When reviewing, usability the following terms were coded often in passages:

- User-centered design
- Designing usability tests
- Best practices for wireframes and prototypes
- Stakeholder interviews and personas

When these coded syllabi domains are compared again instructor interviews, changes do occur with the domains that were coded the most. Content development (28%) and usability (12%) align with course syllabi in the top two most coded domains. However, content style guide is the third largest coded domain for instructors.

	Instructor Knowledge Results	% of Total Instructor Knowledges
Content Analysis	3	5%
Content Development	17	28%
Content Lifecycle	3	5%
Content Performance	4	7%
Content Style Guide	6	10%
Design	4	7%
Information Architecture	3	5%
Programming Languages	3	5%
Project Management	2	3%
Software Tools	0	0%
Usability	7	12%
User Audience	2	3%
User Engagement	2	3%
WCMS	3	5%
Web Accessibility	1	2%
Total Coded Passages	60	

Table 7: Coded instructor survey results within the knowledge facet

When examining why content style guide knowledges were coded frequently in the instructor survey results, several instructions brought up the importance of branding and web governance as important terms related to content style guides. One instructor in particular stated,

> "I think [students'] biggest takeaway is that [web content strategy] is broader than most people think. Certainly, they come in with preconceived notions that it's about web writing or editorial calendars, but most really don't think about the governance piece, for example."

This instructor's statement was in response to a question about essential skills that students needed to master upon entering the job market. While the instructor could not "pick just one" skill, his or her insight about the preconceptions of web content strategy makes it understandable why other domains in the node framework were prioritized by instructors in the written survey.

Web content strategy, as suggested by the instructor, has a misconception of being a narrow specialty.

	Combined Academic Passages for Knowledges	% of Total Academic Passages
Content Analysis	40	6%
Content Development	110	18%
Content Lifecycle	31	5%
Content Performance	84	14%
Content Style Guide	27	4%
Design	60	10%
Information Architecture	49	8%
Programming Languages	27	4%
Project Management	34	5%
Software Tools	1	0%
Usability	93	15%
User Audience	32	5%
User Engagement	6	1%
WCMS	17	3%
Web Accessibility	10	2%
Total Coded Passages	621	

Table 8: The combined total of coded syllabi and instructor survey passages within the knowledge facet

Nevertheless, when the coded passages for syllabi and instructor interviews are merged together, the elevation of content style guide as a domain is negligible. The content development, usability, and content performance domains; however; do secure their positions as the most coded academic nodes within the knowledge's facet.

4.2.1.2 Skills

Similarly to the knowledge's facet, content development (17%) and usability (15%) were within the top three coded domains for skills. However, content analysis (11%) also elevated itself over content performance (8%) within this facet.

	Course Syllabi Skill Results	% of Total Course Syllabi Skills
Content Analysis	52	11%
Content Development	81	17%
Content Lifecycle	27	6%
Content Performance	39	8%
Content Style Guide	16	3%
Design	42	9%
Information Architecture	31	6%
Programming Languages	32	7%
Project Management	36	8%
Software Tools	8	2%
Usability	71	15%
User Audience	24	5%
User Engagement	3	1%
WCMS	12	3%
Web Accessibility	5	1%
Total Coded Passages	479	

Table 9: Coded course syllabi within the skills facet

The evolution from knowledge to skill for content development and usability in this facet is observed through students' transitioning from learning how to do something to completing related tasks to these two domains. For example, in content development student's start to copy editing their peers' content along with writing their own. One course had students practicing rewriting content for the web using the "inverted pyramid" style of writing. Students were instructed to "place the most important information at the top of the page" that they were editing. For usability, students conduct real user testing, such as card sorts, and performing stakeholder interviews with real clients. The evolution in this facet changes from learning about best practices to applying them.

Additionally, content analysis rose from 7% as a knowledge domain to 11% as a skill domain. Examining this domain suggests content analysis is more hands learning. "Perform content audits" and "make recommendations for new content" were two tasks that were coded the most often within the content analysis domain. In the knowledge facet, students learned about

heuristic evaluation, competitive analysis, and other auditing techniques but for the most point those techniques are theories and that became useful to students through practicing implementing those theories.

However, when the instructor written survey results are reviewed data presented in syllabi verses data produced in the survey do not align for the third most coded domain. Syllabi present content analysis as the third most coded domain whereas instructors place WCMS' at the third highest coded node.

	Instructor Skills Results	% of Total Instructor Skills
Content Analysis	2	5%
Content Development	11	27%
Content Lifecycle	2	5%
Content Performance	2	5%
Content Style Guide	1	2%
Design	3	7%
Information Architecture	2	5%
Programming Languages	2	5%
Project Management	2	5%
Software Tools	0	0%
Usability	5	12%
User Audience	2	5%
User Engagement	2	5%
WCMS	4	10%
Web Accessibility	1	2%
Total Coded Passages	41	

Table 10: Coded instructor survey results within the skills facet

Two instructors stated in their responses that maintaining content in a CMS is an important skill to learn before entering the job market. One of these instructors went on to say, "[so students] feel comfortable [using a CMS] in the work place after they leave school" when asked why their selected essential skill was important. It appears that these two instructors put emphasis on

hands-on skills training in their classrooms in order to simulate real-world working environments.

Nevertheless, when course syllabi and instructor interviews data sets are combined, content development and usability are the top two coded domains. Additionally the content analysis domain was coded more than the WCMS domain, moving its ranking to within the top three domains for the skills facet.

	Combined Academic Passages for Skills	% of Total Academic Skills
Content Analysis	54	10%
Content Development	92	18%
Content Lifecycle	29	6%
Content Performance	41	8%
Content Style Guide	17	3%
Design	45	9%
Information Architecture	33	6%
Programming Languages	34	7%
Project Management	38	7%
Software Tools	8	2%
Usability	76	15%
User Audience	26	5%
User Engagement	5	1%
WCMS	16	3%
Web Accessibility	6	1%
Total Skill Passages	520	

Table 11: The combined total of coded syllabi and instructor survey passages within the skills facet

Additionally, the design and content performance domains round out the top five coded domains for academia within the skills facet. Project management, in comparison to the knowledges facet in academia rose from 6% to 8% of total coded domains within the skills facet. This trend was observed in syllabi where students are assigned to work with real-world clients by their instructors. Creating project proposals and business cases are examples of two project management skills gained through coursework.

4.2.1.3 Abilities

The number of coded passages in the abilities facet is significantly lower than the knowledges or skills facets. However, since abilities are also mastered skills the lower number of coded passages was expected for this facet. As the definition for ability described, an ability only forms through the practice of a skill in multiple scenarios. It cannot be guaranteed that all courses provided enough classroom or real life experiences for students to walk away from courses with ability level mastery for web content strategy domains. There simply is not enough time in a six or eight week course for student skills to mature into abilities. Nevertheless, the content development and project management domains tied with 19% of the ability passages coded.

	Course Syllabi Abilities Results	**% of Total Course Syllabi Abilities**
Content Analysis	2	10%
Content Development	4	19%
Content Lifecycle	1	5%
Content Performance	1	5%
Content Style Guide	0	0%
Design	3	14%
Information Architecture	2	10%
Leadership & Management	1	5%
Programming Languages	0	0%
Project Management	4	19%
Software Tools	1	5%
Usability	1	5%
User Audience	0	0%
User Engagement	1	5%
WCMS	0	0%
Web Accessibility	0	0%
Total Ability Passages	21	

Table 12: Coded course syllabi within the abilities facet

The content development domain was parallel to its counterpart domains in the knowledges and skills facets. The ability tasks found directly correlated to the skill reputations

required for that skill to mature to an ability. Writing content that users were successfully able to resonate with was an outcome of an end of year assessment in a course. Moreover, the observed uptick in the number of times project management increased as a codded name has a direct relationship to courses that provided hands on projects with a real-life client. In several courses, students constructed a project plan with a real-life client and then excited that plan over the course of the semester. By the end of the semester, students were able to use project management software and other tools to monitor milestones within a project.

Design also experienced an uptick that doesn't align with the knowledge or skills facets, which is most likely due to the lower number of ability passages for syllabi. When the passages under the design domain are examined in greater detail, responsive design is the primary reason why it scored so highly. One syllabi, for example, has students applying the same wireframe into 4 different screens that are reflective of responsive design. The ability deploy content in a responsive format is an ability that has broader impacts on a website than just web content strategy.

When the instructor survey results are examined, only the content development domain has a clear lead as the most coded. Design, programming languages, usability, and WCMS', however, all align with one another at 13%. As seen with the skills facet, instructors placed emphasis on technology based abilities with the understanding that students need to be proficient and comfortable with technology before entering the workforce. Moreover, the design and usability domains aligned closely with coded nodes from the knowledges and skills facet.

	Instructor Abilities Results	% of Total Instructor Abilities
Content Analysis	0	0%
Content Development	4	27%
Content Lifecycle	0	0%
Content Performance	0	0%
Content Style Guide	1	7%
Design	2	13%
Information Architecture	0	0%
Leadership & Management	0	0%
Programming Languages	2	13%
Project Management	1	7%
Software Tools	0	0%
Usability	2	13%
User Audience	0	0%
User Engagement	0	0%
WCMS	2	13%
Web Accessibility	1	7%
Total Ability Passages	15	

Table 13: Coded instructor survey results within the abilities facet

Nevertheless, when total academic pages are combined, content development (22%), Design (14%), and Project management (14%) are have the most coded domains for the abilities facet. Unlike the knowledge or skills facet, usability falls to 8% of coded domains in the abilities facet. Content analysis, information architecture, programming languages, and WCMS all follow at 6% for academic ability domains.

	Combined Academic Passages for Abilities	% of Total Academic Abilities
Content Analysis	2	6%
Content Development	8	22%
Content Lifecycle	1	3%
Content Performance	1	3%
Content Style Guide	1	3%
Design	5	14%
Information Architecture	2	6%
Leadership & Management	1	3%
Programming Languages	2	6%
Project Management	5	14%
Software Tools	1	3%
Usability	3	8%
User Audience	0	0%
User Engagement	1	3%
WCMS	2	6%
Web Accessibility	1	3%
Total Ability Passages	36	

Table 14: The combined total of coded syllabi and instructor survey passages within the abilities facet

4.2.1.4 What Instructors Teach

Through the examination of syllabi and instructor data, the specific KSAs used in web content strategy are defined in this section. However, if all KSAs what instructors teach in the classroom has a distinct value. Content development (19), usability (15%), and content performance (11%) are the domains that were coded the most in the passaged used for this study. Design (10%) and content analysis (9%) also are distinguishable as frequently coded domains in the passages used in the study.

	Combined Academic Passages for KSAs	% of Total Academic KSAs
Content Analysis	96	9%
Content Development	210	19%
Content Lifecycle	61	5%
Content Performance	126	11%
Content Style Guide	45	4%
Design	110	10%
Information Architecture	84	8%
Leadership & Management	4	0%
Programming Languages	62	6%
Project Management	75	7%
Software Tools	17	2%
Usability	167	15%
User Audience	58	5%
User Engagement	13	1%
WCMS	33	3%
Web Accessibility	76	7%
Total KSA Passages	1117	

Table 15: The combined total of coded syllabi and instructor survey passages for all KSA facets

Developing content for the web is the primary outcome of all content strategy courses and what KSAs instructors want students to leave their classroom with. Content performance, design, usability, and content analysis are also KSAs that are taught in the classroom. The other domains presented in table 13 are also taught in the classroom, but not to the same level as the five domains noted above.

4.2.2 What web content strategy KSAs are emphasized in professional settings

4.2.2.1 Knowledges

Knowledges found in job advertisements suggest that content development (27%), content performance (13%), and usability (10%) were the most coded domains for knowledges. Additionally, The WCMS domain was coded at 7% which is the fourth highest result before domains become too similar be distinctive from one another.

	Job Advertisement Knowledge Results	% of Total Job Advertisement Knowledges
Content Analysis	16	4%
Content Development	96	27%
Content Lifecycle	22	6%
Content Performance	48	13%
Content Style Guide	14	4%
Design	14	4%
Information Architecture	23	6%
Programming Languages	16	4%
Project Management	12	3%
Software Tools	10	3%
Usability	37	10%
User Audience	14	4%
User Engagement	11	3%
WCMS	25	7%
Web Accessibility	4	1%
Total Knowledge Passages	362	

Table 16: Coded job advertisements within the knowledges facet

The three most coded domains for knowledges agree with knowledges found in academic sources. Like with the academic sources, the terms most coded matched in job advertisements. Additionally, content development has a lot of writing and editing nodes, usability focuses on types of usability research, and content performance was SEO and analytics that aligned with academic sources.

Moreover, the coded professional passages for the knowledges facet also aligns academic and job advertisements with the content development domain at 27%. However, the next two most coded domains project management (13%) and information architecture does not align with the job advertisement knowledges. However, project management and information architecture domains were coded frequently with academic sources.

	Professional Knowledge Results	% of Total Professional Knowledges
Content Analysis	13	7%
Content Development	43	24%
Content Lifecycle	9	5%
Content Performance	4	2%
Content Style Guide	5	3%
Design	5	3%
Information Architecture	21	12%
Programming Languages	10	6%
Project Management	22	13%
Software Tools	1	1%
Usability	20	11%
User Audience	10	6%
User Engagement	6	3%
WCMS	5	3%
Web Accessibility	2	1%
Total Knowledge Passages	176	

Table 17: Coded professional survey results within the knowledges facet

The professional survey participants, do however, place emphasis on project management as a knowledge. One participant remarked that, when training a new-coworker essentials about web content strategy methodology, there is a "need for a solid foundation in project management technique and skills." Several participants also mentioned the importance of knowing how to meet business needs, goals, and processes, all of which are important terms within the project management domain.

Though a content strategist may not be a project manager or a business analyst, understanding how those disciplines are within the confines of a project can be very useful when working together to meet project goals. Additionally, professionals who participated in the written professional survey cited information architecture at 12% verses job advertisements at 6%. Content development and usability, however, remained at roughly the same-codded percentages between job advertising and professional survey.

When examining the total sum of job knowledges when job advertisements and professional survey data are combined, content development, usability, and content performance are the top domains for knowledges. Information architecture is the fourth most codded domain at 8%.

	Combined Industry Passages of Knowledges	% of Total Industry Knowledges
Content Analysis	29	5%
Content Development	139	26%
Content Lifecycle	31	6%
Content Performance	52	10%
Content Style Guide	19	4%
Design	19	4%
Information Architecture	44	8%
Programming Languages	26	5%
Project Management	34	6%
Software Tools	11	2%
Usability	57	11%
User Audience	24	4%
User Engagement	17	3%
WCMS	30	6%
Web Accessibility	6	1%
Total Knowledge Passages	538	

Table 18: The combined total of coded job advertisements and professional survey passages within the knowledges facet

Lastly, to sum up one participant's viewpoint for web content strategy industry knowledges, one needs to understand:

> "Editorial knowledge and basic calendaring, quantitative and qualitative content, curation skills and interest, marketing, metadata, information architecture, content management, taxonomies, traffic analysis, SEO, workflows, design, competitive analysis, etc."

4.2.2.2 Skills

Content development (30%) and content performance continues its trend in leading other domains with the most coded passages. However, content lifecycle (12%) has elevated itself as a top coded domain.

	Job Advertisement Skill Results	% of Total Job Advertisement Skills
Content Analysis	12	5%
Content Development	73	30%
Content Lifecycle	29	12%
Content Performance	34	14%
Content Style Guide	22	9%
Design	2	1%
Information Architecture	4	2%
Leadership & Management	9	4%
Programming Languages	3	1%
Project Management	18	7%
Software Tools	3	1%
Usability	15	6%
User Audience	7	3%
User Engagement	6	2%
WCMS	9	4%
Web Accessibility	1	0%
Total Skill Passages	247	

Table 19: Coded job advertisements within the knowledges facet

Closer analysis of content lifecycle indicates that employers are looking for candidates who can perform manage content at all steps within the software development lifecycle. However, professionals emphasized programming languages (10%) and project management (14%) domains after content development (27%) for most coded domains.

	Professional Skills Results	% of Total Professional Skills
Content Analysis	6	8%
Content Development	21	27%
Content Lifecycle	1	1%
Content Performance	2	3%
Content Style Guide	0	0%
Design	3	4%
Information Architecture	6	8%
Leadership & Management	0	0%
Programming Languages	8	10%
Project Management	11	14%
Software Tools	1	1%
Usability	6	8%
User Audience	6	8%
User Engagement	4	5%
WCMS	2	3%
Web Accessibility	0	0%
Total Skill Passages	77	

Table 20: Coded professional survey results within the skills facet

This shift is likely because, employers look at key features for a project or business goal whereas the employees tend to think more granularly about their skill sets. One participant stated, "[c]ontent without good underlying structure is difficult to re-deploy across different channels, but it's often an afterthought" when responding to a question about skills they wanted to learn in the classroom. This participant in particular was discussing XML in relationship to information architecture, metadata, and taxonomy. Like with instructor survey results, professionals are also seeking the opportunities to get hands-on with technology. Other professionals stated that being able use HTML, CSS, and JavaScript were valuable skills. Database management was another skillset that occurred amongst professionals.[19]

Additionally, professionals holding a higher regard for project management also aligns with the number of times the project management domain was coded in the knowledge facet. The

[19] No specific database language was provided by the participant.

elevated emphasis on content performance and content lifecycle appears to have a close relationship with daily operations and maintenance of industry websites. “Develop,” “Design,” “Edit,” “Maintain,” “Optimize,” and “Improve” were heavily used keywords in job advertisements for both content performance and content lifecycle when referencing websites.

Content development (29%) maintains its status as the most codded industry domain when job advertisements and professional survey results are added together. Overall, the skill facet aligns with the knowledge facet for this domain for professional and academic sources. Moreover, the project management (9%) and content lifecycle (9%) domains also manage to rank within the five most coded domains for total industry skills. Content performance (11%) also secures its alignment as a top coded domain across skill and knowledge facets.

	Combined Industry Passages of Skills	**% of Total Industry Skills**
Content Analysis	18	6%
Content Development	94	29%
Content Lifecycle	30	9%
Content Performance	36	11%
Content Style Guide	22	7%
Design	5	2%
Information Architecture	10	3%
Leadership & Management	9	3%
Programming Languages	11	3%
Project Management	29	9%
Software Tools	4	1%
Usability	21	6%
User Audience	13	4%
User Engagement	10	3%
WCMS	11	3%
Web Accessibility	1	0%
Total Skill Passages	324	

Table 21: The combined total of coded job advertisements and professional survey passages within the skills facet

Overall, the skills domains coded in industry passages were comparable the knowledge facet.

4.2.2.3 Abilities

Job advertisements have the least coded abilities compared to knowledge and skill facets. The number of ability passages coded most likely relates to the type of positons found on Monster.com. Many content strategists are managers of some form; thus, they lead others in some capacity. Therefore, it is reasonable to estimate that eventually, content strategists who are in positions of leadership end up managing large teams or even departments. This theory is supported by how often the leadership & management (19%) and project management (14%) domains were coded within the abilities facet. Though content development (21%) presents itself parallel to other facets and academic sources, this shift towards managerial domains is nonetheless significant.

	Job Advertisement Abilities Results	**% of Total Job Advertisement Abilities**
Content Analysis	13	5%
Content Development	57	21%
Content Lifecycle	18	7%
Content Performance	26	10%
Content Style Guide	19	7%
Design	2	1%
Information Architecture	3	1%
Leadership & Management	53	19%
Programming Languages	3	1%
Project Management	38	14%
Software Tools	3	1%
Usability	15	5%
User Audience	7	3%
User Engagement	6	2%
WCMS	9	3%
Web Accessibility	1	0%
Total Ability Passages	273	

Table 22: Coded job advertisements within the abilities facet

Moreover, many of the coded leadership and management nodes suggest that the content strategist is running a team of people. The passages also suggest that the content strategist

performs the role of a web content strategy subject-matter expert (SME). Some common leadership and management tasks within job advertisements sought content strategists perform the following duties:

- “Lead usability research and information architecture tasks as well as guide and oversee the work of staff on tasks”
- “Provide training and support for content authors across departments”
- “Lead productive teams of UX practitioners to deliver quality user experiences in a collaborative, cross-disciplinary structure, bringing out the best in their teams”

However, professionals who responded to the survey did not place an emphasis on the leadership and management (0%) domain for the ability facet. Professionals did, however, place emphasis on project management (13%) as an ability. This continued coding of the project management domain follows the overall trend for industry project management domains within the KSA facets. In addition to content development (35%), the user audience (16%) domain is elevated to the top three most coded domains for professional abilities.

	Professional Abilities Results	% of Total Professional Abilities
Content Analysis	1	3%
Content Development	11	35%
Content Lifecycle	0	0%
Content Performance	0	0%
Content Style Guide	0	0%
Design	1	3%
Information Architecture	2	6%
Leadership & Management	0	0%
Programming Languages	1	3%
Project Management	4	13%
Software Tools	0	0%
Usability	2	6%
User Audience	5	16%
User Engagement	2	6%
WCMS	2	6%
Web Accessibility	0	0%
Total Ability Passages	31	

Table 23: Coded professional survey results within the abilities facet

User audience, also known as target audience, has previously not been in the top three most coded domains for the KSA facets for either industry or academic sources. Upon additional review of source material, there is an industry need for professionals to able ability to reach audiences effectively. In addition to web content strategy, user audience ties into many business goals and other web-based disciplines. Professionals who participated in the written survey emphasized the following about user audiences:

- “It's part of the job for writers, journalists, and editors to take the audiences' perspective in organizing and presenting information.”
- “Empathize with the end customer and have the confidence and the zeal to prioritize customer needs over business pushes and requirements”

- "Target different audiences effectively; if you can do that with the same master content source, even better. Technology is great, but understanding people and processes are equally important."

Making content work with audiences and making it a goal for that content to be meaningful is a difficult skill to master, let alone making it into an ability.

Overall, content development (22%), leadership & management (17%), and project management (14%) secured their positions as the most coded industry domains within the abilities facet, after summing the job advertisement and professional interview datasets together. Notably, content performance (9%), usability (6%), and content lifecycle (6%) followed the pattern that was established in the knowledges and skills facet.

	Combined Industry Passage of Abilities	% of Total Industry Abilities
Content Analysis	14	5%
Content Development	68	22%
Content Lifecycle	18	6%
Content Performance	26	9%
Content Style Guide	19	6%
Design	3	1%
Information Architecture	5	2%
Leadership & Management	53	17%
Programming Languages	4	1%
Project Management	42	14%
Software Tools	3	1%
Usability	17	6%
User Audience	12	4%
User Engagement	8	3%
WCMS	11	4%
Web Accessibility	1	0%
Total Ability Passages	304	

Table 24: The combined total of coded job advertisements and professional survey passages within the abilities facet

4.2.2.4 Emphasized KSAs in the workforce

The KSAs that are emphasized the most in industry are the content development (26%), content performance (10%), and project management (9%). Additionally, the usability (8%) and content lifecycle (7%) domains are distinguishable as frequently coded amongst the remainder of the industry KSA domains.

	Combined Industry Passages for KSAs	% of Total Academic KSAs
Content Analysis	61	5%
Content Development	301	26%
Content Lifecycle	79	7%
Content Performance	114	10%
Content Style Guide	60	5%
Design	27	2%
Information Architecture	59	5%
Leadership & Management	62	5%
Programming Languages	41	4%
Project Management	105	9%
Software Tools	18	2%
Usability	95	8%
User Audience	49	4%
User Engagement	35	3%
WCMS	52	4%
Web Accessibility	8	1%
Total KSA Passages	1166	

Table 25: The combined total of coded job advertisements and professional survey passages for all KSA facets

As seen with the academic KSA passages, developing content for the web is the primary outcome of all job advertisements and professional survey results. Developing and maintaining content on the web is a critical job duty for web content strategists. Gaging that content's performance through SEO and analytics is another important duty for a content strategist as the ability to measure content helps to ensure that the content is useable. Lastly, project management in important to professionals and employers for the need to complete one's work on time and

within project scope. Not only do content strategists need to track the completion of their own work, but subordinates as well.

4.2.3 How do KSAs from academic courses align with KSAs needed for web content strategy related jobs?

Overall, the alignment of KSAs between academia and industry domains are strong between one another. Content development has the strongest alignment between academia and industry, followed by content performance. Other domains, such as content analysis and usability, among others, only differ by a few percentages. Based on the data in table 24, a student will leave the classroom and have the KSAs they need to enter the workforce.

	Combined Academic Passages for KSAs	% of Total Academic KSAs	Combined Industry Passages for KSAs	% of Total Academic KSAs
Content Analysis	96	9%	61	5%
Content Development	210	19%	301	26%
Content Lifecycle	61	5%	79	7%
Content Performance	126	11%	114	10%
Content Style Guide	45	4%	60	5%
Design	110	10%	27	2%
Information Architecture	84	8%	59	5%
Leadership & Management	4	0%	62	5%
Programming Languages	62	6%	41	4%
Project Management	75	7%	105	9%
Software Tools	17	2%	18	2%
Usability	167	15%	95	8%
User Audience	58	5%	49	4%
User Engagement	13	1%	35	3%
WCMS	33	3%	52	4%
Web Accessibility	76	7%	8	1%
Total KSA Passages	1117		1166	

Table 26: Side-by-side comparison of coded academic and industry passages

5 Discussion and Implications

5.1 GAP Analysis of Results

5.1.1 Current Status

The status of web content strategy is a discipline that works parallels with other disciplines. Its history is seeded in the transition of print media to digital media. Web content strategy was also established out of a need to manage web content and was discussed at both the IA Summit and ConFab conferences in the 2000s. Even one of the leading experts in the field, who participated in the professional survey, stated:

> "Content strategy is a field with myriad definitions, which has resulted in scattered courses and programs, as well as really different job descriptions."

Web content strategy, like many other information technology disciplines, is a young field that is working to define itself. Nevertheless, coded academic and industry passages used in this study aligned with one another. This alignment suggest that though web content strategy is a new field, one can take courses in web content strategy and be prepared for the workforce.

Moreover the analysis of KSA facets found that content development was a key domain for web content strategy. Project management, usability, content performance, and other domains were also coded often. Many of the web content strategy domains work together to ensure that content developed in a way that is usable and meets needs of users and business owners. The coding of the project management domain results primarily impacted industry sources in the skills and abilities facets. However, project management was also coded within knowledge facets for industry and academia. Additionally, project management should be expected within industry since just about every web project utilizing project management and the software development life cycle (Hussung, 2016). For one to do their job effectively,

understanding how deliverables are to be prioritized, built, and realized is an important part of any role. A project manager may be responsible for keeping everyone on task and within project scope. All project members must work together to deliver their projects on time and within budget.

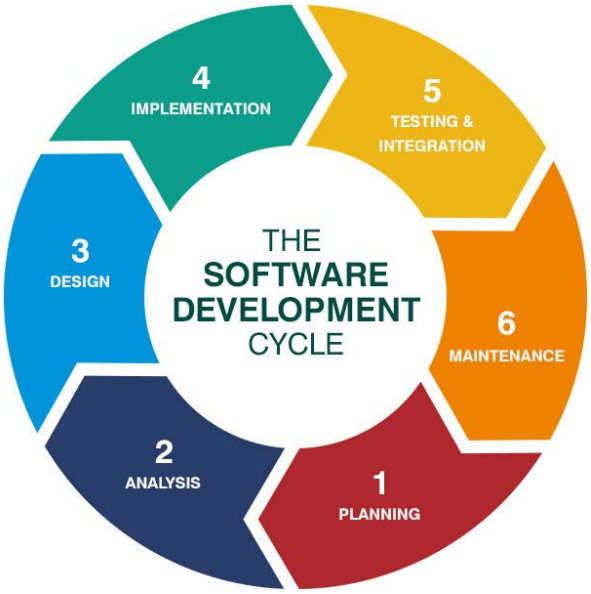


Figure 5: Software Development Lifecycle (Hussung, 2016).

Information architecture, content analysis, content lifecycle, and design nodes consistently appearing in the top ten for KSAs was an expected result based on the types of data found before coding. While these domains may be more focused around knowledge and skill rather than ability, they are important domains for web content strategy, nonetheless, because knowledges and skills form abilities through practice. Content analysis tends to occur during the requirement analysis phase of the software development lifecycle. Information architecture may occur in any of the project. Content lifecycle is the whole project in its entirely, partially around how content is developed, edited, published, maintained, and eventually retired. Lastly, design is important to any web content strategy because how a page is designed affects how content appears on a page. Not only is a strategist working with a designer to create the look and feel for a website but also all technology needed for that content to be visible to users. Design does not have to be an ability for content strategists. However, design should be a knowledge and skill. Content requirements, such as character limits, have an impact on design and thus a content strategist needs to be able to communicate best content practices with other team members in order for the best possible outcome on a website.

5.1.2 Gaps and Other Findings

This study found areas where web content strategy can be improved. Technology based domains, along with web accessibility, style guides, and user engagement domains constantly were coded at lower rates than expected within data sets and KSA facets. In some cases, such as technology based domains, instructor and professional survey data stress the importance of technology KSAs that were found to be coded less frequently than other domains within the KSA facets.

5.1.2.1 Style Guides

Style guides can be editorial or technical in nature and are effective tools to develop for internal use and for product owners. A style guide has the capacity to dictate everything from color palette to vocabulary use. Additionally, style guides can be effective at disseminating governance policies, such as what external authoring tools are compatible with the technical infrastructure of a website. A style guide has the ability to be as broad or as granular as an organization needs it to be, which is also why it is so valuable. Additional training and transparency is needed around style guides because of how infrequently content style guide domains were coded across KSA facets. The only times that the content style guide domain was coded frequently was as a knowledge (10%) for instructor survey results and as a skill (9%) for job advertisements. When these two data sources are investigated further, instructors placed emphasis on defining governance and other guidelines; whereas job advertisements stressed the need to “establish and maintain best practices” along with producing consistency within content through the creation of editorial standards for content and technology. Additionally, establishing strong branding was another goal of style guides. Despite these two sources being coded for a knowledges domain and a skill domain, the content style guide domain was constantly coded

below 7% and often at 2%-3%. Given how important style guides are to instructors and employer it was a surprise to see style guide domains coded infrequently across KSA facets.

5.1.2.2 Programming Languages and WCMS

Technical KSAs are also extremely valuable to learn in academia and industry. A content strategist does not need to have programming languages or WCMS' as an ability but it should be a knowledge and skill set. As described by Bloomstein (2012, p.105-119), content strategists need to understand some of the "challenges and functionality [that a CMS] might need to support" and that web content strategists enable other teams, such as writers and editorial staff to complete "really specific tasks" through their "understanding [of] what [a] CMS can do." Casey (2015) also supports the need for web content strategists to understand technology. This includes working closely with content managers and software developers to be the "liaison in [the] discussions about web operations" (p.202-214). Content on a webpage is driven by technology. Without an understanding of that technology, a project deliverable can be compromised.

Web content strategy is about understanding what drives content on a webpage. This is why instructors and professionals are vocal about hands-on experience with WCMS' and programming languages. Instructors made the point that students will most likely be working in WCMS' upon graduation and that they must understand "the processes around the creation and maintenance of web content" and to be able to "make decisions" about web content. Professionals also stated in the survey that understanding of programming languages helps them become better web content strategists and that content that lacks good infrastructure is difficult to use, but that infrastructure "[is] often an afterthought". Technology as stated by survey participants, Bloomstein (2012), and Casey (2015) help web content strategists do their job more

effectively. For these above reasons, technology KSAs in web content strategy should be emphasized more often in the classroom and in industry.

5.1.2.3 User Engagement

Measuring user engagement and understanding user audiences is also an interesting gap. Content is meant for the user. However, making that content engaging and effective with the users one targets is much more difficult than it seems. It takes a writer to create good content and a content strategist to ensure that it is delivered in the best way possible. As one professional stated in this study, "you [need to] empathize with the end customer and have the confidence… to prioritize customer needs over business pushes and requirements." Instructor survey responses and job advertisements echoed this sentiment by making a point for user engagement to be "measurable" and "support the mission and vision of an organization". If content isn't user focused, then it isn't good content. Moreover, if that content isn't measurable then how can one be sure that it was delivered in the best way possible. While user engagement and user audiences were not the most coded domains across KSA facets, these domains still play a significant role in monitoring whether or not content is successful on a website.

5.1.2.4 Web accessibility

Web accessibility was also tagged slightly lower than expected. As of 2014, 12.6% or 39,737,900 persons living in America have been reported to have one or more disabilities (Cornell University, 2014). Many design and usability disciplines can have accessibly incorporated with daily practice, particularly with the principal of user-centered design. Accessibility is not an issue that is going to go away, either. As populations grow and age, the rates of disability increase, too. People are living longer and consume technology more today

than twenty years ago. 39.7 million people are a lot of users who deserve to have technology and content enrich their lives.

5.1.2.5 Software Tools

Lastly, software tools nodes rank low within the KSA framework. This is likely because use of software, such as Microsoft Office, can be a given in many cases. Additionally, software like Microsoft Office could be a minimum technical skill that accompanies a job posting. Nevertheless, it was interesting to see that more specialized tools, such as specific content auditing software or open source software, are not mentioned by academia or industry. Tools such as Xenu, PowerMapper, GitHub, Slack, Jira, Team Foundation Server (TFS), etc. are specialized tools that can be very desirable to employers. Yet, job advertisements rarely mention these software tools. The lack of specialize software tools being posted on job advertisements supports the suggestion that human resources restricts what tools can be listed on an advertisement verses questioned in a job interview.

5.1.3 What Needs to be Done?

The discipline of web content strategy in many ways acts as intermediary between its self and several other fields. This is an acceptable practice; however, web content strategy still needs to figure out what specialties they pull from makes their job role unique. Industry and academia need to work together in order for this specialty to be distinct from others. Additionally, there needs to be one web content strategy definition for practitioners of web content strategy to follow. Academia cannot teach web content strategy when industry uses six or more definitions, just like industry cannot hire content strategists whose education is not compatible with their day-to-day operations. The only way this can be accomplished is if academia and industry work more closely together.

Additionally, there needs to be more academia and industry training for technology. Programming languages and WCMS' may evolve over time but the core principles remain the same. A content strategist who is able to communicate with designers, user experience experts, writers, software developers etc. will ensure that web products reach end users. The goal of any web project is about reaching users, and that means understanding the technology behind the product. Instructors and professionals who participated in the study agree that understanding technology is important to success on the job. Style guides, software tools, and understanding users also need to have a stronger focus within academia and industry. These should not be forgotten amongst anything else. Of course, there may be some overlap with other KSAs, but they are still important to master.

5.1.4 What is the End Goal?

The end goal of this study was to explore how closely KSAs align between industry and academia. While many web content strategy domains agree with the industry and academic passages used for this study, future research will need to be applied to domains that were not in agreement. It would be ideal that web content strategy would get to the point where it can have a formalized career track that can be founded in academia. As a younger field, web content strategy should continue to analyze its KSAs as the field matures. Web content strategy has only been an accepted discipline since 2009. Given the pace at which technology grows and changes, one would expect web content strategy's place within information technology to change again in the future.

5.2 Implications

This study showed that content development is the strongest KSA for both academia and industry. However, both instructors and professionals surveyed agree that there is a need for

stronger technology KSAs within the field of web content strategy. Content strategists need to be able to understand the technology behind content, and formalized training in this area is lacking. In addition to content development, usability and content performance KSAs also align well across academia and industry. However, the other thirteen KSAs are open to greater interpretation. The study does show that information architecture, project management, content analysis, content lifecycle, and design KSAs do well between industry and academia. However, until a web content strategy framework can be developed, it is difficult to say which KSAs are essential to web content strategy. Sixteen web content strategy domains were identified in this study and twelve of them have data that aligns closely to academic and industry KSAs.

5.2.1 Implications for Academic Programs and Instructors

The academic programs that students choose and the instructors they encounter have a direct impact on their career paths. However, all programs have a maximum capacity at which they can offer new and different curriculum. As seen with the academic results of this study, many of the web content strategy domains are already covered in the classroom. Table 13 in the results section placed content development, usability, and content performance as the most coded domains for web content strategy. These domains are already being taught in the classroom and are valued KSA by instructors.

At the onset of this study, it was expected that there was a large gap between academia and industry. Through the course of the study, however, the alignment between academia and industry were similar, if not parallel, to one another on the most frequently coded KSAs domains.

However, the domains that weren't coded frequently present an opportunity for growth in information studies. Instructors who participated in the written survey stated that they wanted

their students to walk away with from the classroom and be able comfortable with technology, such as working in a WCMS. Yet, the domains for programming languages and WMCS did not receive a high number of coded nodes within KSA facets.

Instructors and academic programs should use peer feedback, such as the data provided in this study, to provide greater opportunity for the development of students' technical KSAs. Incorporating more hands-on activities in to the classroom, for example, could introduce knew technical and web content strategy KSAs to students. For example, content analysis could be a lecture in a usability or writing for the web course. Students could utilize software tools to run a site crawl and create a content inventory. Additionally, classroom changes could also be assignment based. The use of a WCMS tool could be a requirement for students to use while working on a web project, such as redesigning a website's UI or taxonomy. It would even be feasible for students to spend a semester to build one website from scratch and practice taking on different roles within that project.

5.2.2 Implications for Industry Recruiters

The examination of this study found that, while industry recruiters post job advertisements online, they need to be presented in a robust and readable format for professionals. The fact that many job advertainments could not be printed or saved meant that potentially valuable data was left out of this study. Many job advertisements were excluded from this study because they only presented generic requirements; such as, relevant experience, minimum experience, and basic software knowledge. While these general requirements can be useful, without job duties to accompany those requirements it can be difficult for candidates to understand exactly what they're applying for. Moreover, it's okay for recruiters to be specific on a job advertisement. Though use of Microsoft Office is a basic tool, information professionals are expected to use

software that is far more complex that word processing tools and spreadsheets. If a project for example uses agile and they use a help desk tool to assign work items, there is no harm in stating what that tool is. After all, being specific on job advertisements may yield more qualified candidates for open positions.

Moreover, it is imperative for industry recruiters to gage feedback about job advertisements from their experienced colleagues. As seen section 4.2.2 in this study, there were significant differences between what professional survey respondents thought were essential to web content strategy verses what was published in job advertisements. The following examples were illuminate what those significant differences were:

- **Knowledges:** Job advertisements listed project management at 3% where as professionals rated it at 13% for how often the domain was coded. The feedback from survey respondents illuminated to that not only does a candidate need to understand how to manage their own time but also have a finger on the pulse of the entire project that they are working on.
- **Skills:** Content lifecycle rated at 13% for job advertisements compared to 1% by professionals. Job advertisements focused in on whether a candidate could operate at any state within the software development lifecycle whereas the lifecycle of content is second nature to the professional.
- **Abilities:** Leadership & Management was 19% for job advertisements and 0% for professionals which was a perplexing result. While it probable that a web content strategists eventually lead teams of people rather than to support the team in deliverable, it was interesting to see this domain ranked highly. The job advertainments that were used in this study where distributed in leadership roles. Similarly to providing more

robust job advertisements, recruiters should also pay attention to the verbiage they use in advertisements for non-managerial roles

5.2.3 Implications for Individual Web Content Strategists

A web content strategist job is a diverse and multidisciplinary profession. The literature review for this study discussed several different approached to how web content strategy is implemented in the field. Thus, web content strategists must be flexible when working with others because of the diffident approaches to web content strategy practice. It is, however, promising to see that academia for the most part is covering the basics for web content strategy as a discipline.

However, the differences between the domains that were coded frequently verses infrequently dose pose a concern for those who are new to the field. For example, based on how often content development was coded within KSA faces and sources it is easier to train someone within that domain. However, there are also the weaker domains, such as programming languages and web accessibility, that could prove move difficult for professionals who are new to the discipline. Professionals who are new to the content strategy discipline may need extra support in these areas when they join a project for the first time.

5.3 Study Validity

This exploratory study focused around using four different sets of data and coding them against formalized definitions for knowledges, skills, and abilities. Additionally, coding checks with a third party were performed during the coding process and while creating queries. The study of the data in this study supports Eisner (2005)'s theory of structural corroboration[20]. The

[20] "Structural corroboration is a process that seeks to validate or support one's conclusions about a set of phenomena by demonstrating how a variety of facts of conditions within the phenomena support the conclusions drawn. It is a process of demonstrating that the story hangs together, that the pieces fit" (Eisner, 2005).

alignment of KSA data despite being sourced from course syllabi, job advertisements, instructor surveys, and professional surveys corroborated each other within the KSA Node Framework. Additionally, the utilization of a formalized coding framework assisted with the validity of this study. The shared domains, terms, and sub-terms with the KSA facets allowed for quantitative measurement to occur from qualitative data sets. Thus allowing domains, like content development, usability, and content performance, to be monitored across KSA facets and sources. Moreover, while there were slight variations in how often domains within facets were coded these variations are negligible because they often only differ by a hundredth of a percent.

	Combined Academic Passages for KSAs	% of Total Academic KSAs	Combined Industry Passages for KSAs	% of Total Academic KSAs
Content Analysis	96	8.59%	61	5.23%
Content Development	210	18.80%	301	25.81%
Content Lifecycle	61	5.46%	79	6.78%
Content Performance	126	11.28%	114	9.78%
Content Style Guide	45	4.03%	60	5.15%
Design	110	9.85%	27	2.32%
Information Architecture	84	7.52%	59	5.06%
Leadership & Management	4	0.36%	62	5.32%
Programming Languages	62	5.55%	41	3.52%
Project Management	75	6.71%	105	9.01%
Software Tools	17	1.52%	18	1.54%
Usability	167	14.95%	95	8.15%
User Audience	58	5.19%	49	4.20%
User Engagement	13	1.16%	35	3.00%
WCMS	33	2.95%	52	4.46%
Web Accessibility	76	6.80%	8	0.69%
Total KSA Passages	1117		1166	

Table 27: Combined academic and industry KSA passages with exposed hundredths places

Additionally, the use of Eisner (1991, 2005)'s referential adequacy[21] supports study findings. At the onset of this study, there was an expectation that the data sets would be drastically different between academia and industry. Considering that academia and industry have historically followed different initiatives around web content strategy, the fact that data sets corroborated was a surprise. Additionally, the frequency at which some domains were coded compared to others was unexpected. The project management domain, for example, was coded frequently for both the knowledges and skills facets but it was not an expected outcome. In addition to monitoring one's own work, many web projects in industry have project managers and business analysts to help ensure that the project completes deliverables and meet project deadlines. Nonetheless, the project management domain was codded frequently across KSA facets. It was also interesting that WCMS and programming languages nodes were not tagged at higher rates considering that survey results for instructors and professionals placed emphasis on the use of technology in the classroom and workplace. Lastly, content development ranking so highly was also a surprise. Generally, the role of a content strategist is to oversee writers and editors produce content and not to produce content themselves. It was the expectation of this researcher to see less emphasis on creating content and more emphasis on the technology that makes content appear on the page. Overall, the structural corroboration and referential adequacy of data along with third party coding checks helped to ensure the validity of this study.

[21] "Referential adequacy suggests the importance of criticism, and Eisner (1991) describes the goal of criticism as illuminating the subject matter and bringing about more complex and sensitive human perception and understanding" (Creswell, 2012).

6 Study Limitations and Future Research

6.1 Literature Review

The resources available for web content strategy was vast and crossed several different areas of study. This study limited itself to the use of 6 industry definitions of web content strategy. However, there are dozens of related books and materials to web content strategy. Another study should be completed in the future to see exactly where these definitions stack up with one another. Likewise, the evolution of WCMS can be traced to other areas of study, such as marketing and communications. As seen in the literature review, available sources that study WCMS in information sciences becomes rather difficult to find – but that doesn't mean it's not there. Information and computer scientist could have traded this niche area of study for something else. Additionally, with how common WCMS are used today, there is great likelihood that another discipline picked up where information and computer science academics left out. Fleshing out this timeline for when this hand off occurred would help provide additional context and insight to how WCMS evolved between the mid-2000s and today.

6.2 Participant Recruitment & Sample Size

6.2.1 Participant Recruitment's Impact on Sample Size

This study was limited by the sample size of instructor survey results. Though the written survey sample sizes were small, web content strategy is still an emerging field. Thus, an online written survey was the measurement tool with the greatest potential to reach as many instructors and professionals as possible. Ideally, this study should be repeated several times over the next 20 years, as a longitudinal study. Twenty years' worth of date would yield a wealth of changes that follows web content strategy as the discipline continues to grow.

Another limitation of this study is the physical location of its participants. Many participants were scattered across the United States. If this study were afforded additional

resources and funding, recruitment completed at conferences would be the preferred method to seek instructor and professional participants. The opportunity to have a booth or hold a workshop has the potential to yield richer data. Moreover, several professionals surveyed stated that they too were instructors of courses so if they were recruited at confab, IA summit, UXPA, etc. they would be able to provide insight to courses that are otherwise locked behind a password wall or not yet indexed by Google. The face-to-face interaction of instructors at conferences would have allowed for their syllabi and other course resources to be obtained with greater ease. The issue of participant fall-off would also be negligible because the face-to-face interaction has more buy-in and personal engagement with the participant.

6.2.2 Sample Size's Impact on Coding Data

The qualitative data analysis was limited by coding noise introduced by the small sample size for this study. The sum of course syllabi, job advertisements, instructor interviews, and professional interviews yielded a sum of 87 pieces of information. Through the process of coding nodes via the KSA facets, a total of 2,283 nodes were tagged in the process. Nevertheless, these 2,283 nodes exhibited a parallelism between KSA facets and their domains. This parallelism yield domains within the KSA facets and across sources that were indistinguishable from one another after the two or three most coded domains for that facet—creating noise in the data. It would be very valuable to repeat this study with a larger sample size to see if the noise caused by parallel datasets dissipated.

6.3 Hands on Classroom Experiences

An interesting finding of analyzing instructional data was that students could leave the classroom with an ability, rather than a skill, if their course offered in person interactions with real clients. Moreover, the prospects of forming that ability came from a project that progressed

throughout an entire semester. Another study should be conducted with comparable syllabi to track when a skill becomes an ability through the completion of a semester long project with a real client versus the same course without a semester long project. Another aspect of this study would be to track the immersion of the students into the semester long project and what roles and responsibilities those students take on for that project. Performing action research would probably yield a good preliminary study using small sample sizes. However, this study would have to occur with the same variables such as:

- Course
- Project
- Client
- Project deliverable
- Semester

The study would most likely have to be done in the same course with two different sections within a singular semester.

7 Conclusion

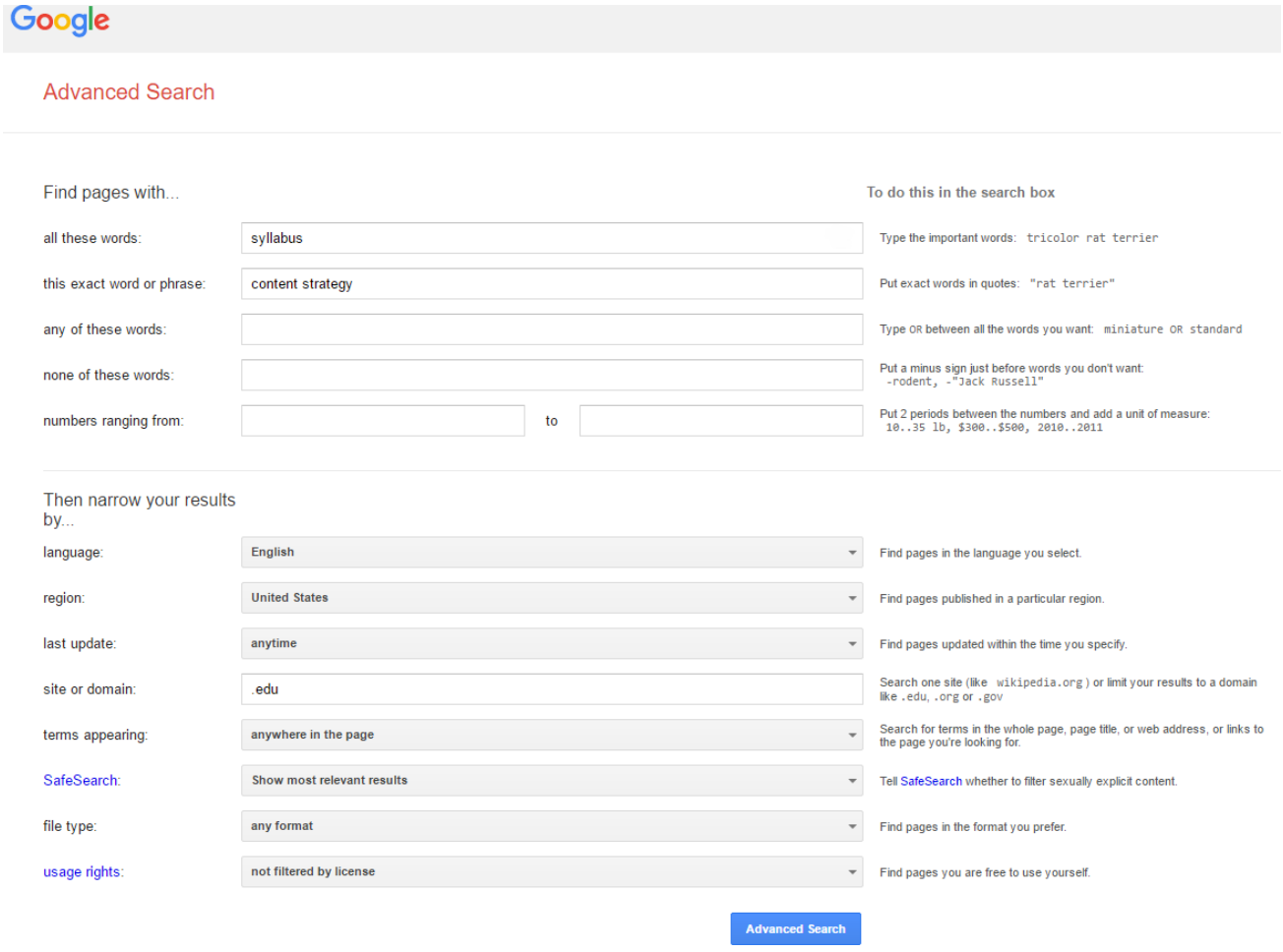
The goal of this study was to explore web content strategy's relationship within academia and industry. The current state of the discipline, as it were. There are many moving pieces in academia and industry for web content strategy. Several things need to be sorted out as the field matures, such as getting down to a singular definition for the field. Additional, comparative analysis should be completed on the dozens of content strategy definitions that currently exist in literature today. Research where the drop off is for research in how technology and content work

together to manage content in the mid-2000's also needs to be explored. Did another area of study pick up where information and computer science left of?

The parallelism with domains and KSA facets within the KSA node framework was a positive result to see even though there is possible noise within the coding due to the study's small sample size. This parallelism allowed for the structural corroboration of this study. Nevertheless, more time needs to be spent improving how students and web content strategists tackle the mastery of the weaker domains discovered within the KSA node framework. Overall, web content strategy is a field that is growing and to spend time researching how it matures over time is a great research opportunity to peruse.

8 Appendices

Appendix A: Advanced Google Search for Course Syllabi



Appendix B: Instructor Recruitment Letter

Greetings Professor [Name],

I am a Master's student from the University of Maryland conducting thesis research in the field of content strategy. I am primarily working on a comparative analysis of current academic offerings and skills that experienced content strategy professionals possess. I found your [Course Name] syllabus through a web search and I was wondering if you would be willing to share any additional course materials that may live on your university's learning management system (Blackboard, Canvas, Moodle, etc.)?

Additionally, would you be interested in participating in a written-survey as a part of my study to provide additional information about your [Course Name] course? This survey should take about 15 minutes of your time. You may access the survey by selecting the link below:

[Survey Link]

Kind Regards,

Laura Gates
lagates@umd.edu

Dr. Katy Newton Lawley
Faculty Advisor
katyn@umd.edu

Appendix C: Instructor Written Survey Questions

1. Could you please describe your background?
2. What are your focus areas of research, teaching, and practice?
    a. How do these relate to content strategy?
3. What is your definition of web content strategy?
4. How did you become involved in content strategy?
5. What other disciplines does content strategy use?
6. Can you describe how your course came to be developed?
    a. What the underlying need for this course to be developed
    b. How has this course evolved over time?
7. How often do you teach this course?
    a. How often is it available within your university?
    b. Could you please describe the student response to this course offering?
8. Is there one skill in particular learned in your course that you believe is essential to students upon entering the job market?
    a. Why?

Appendix D: Permission to Use Monster.com Job Advertisements

Support Request (General Support - Contact Us) US HX [Incident: 160207-000382]

1 message

Monster Customer Service <customerservice@monster.com> Wed, Feb 10, 2016 at 1:50 PM

Reply-To: Monster Customer Service <customerservice@monster.com>
To: lagates@umd.edu

Subject

Support Request (General Support - Contact Us) US HX

Discussion Thread

Response Via Email (Carter, Latwanya) 02/10/2016 01:50 PM

Hello Laura,

Thank you for contacting Monster Global Customer Service. My name is Latwanya, and I would be glad to assist you with this issue.

I understand from your email that you are requesting to collect Content Strategy positions on Monster for your Master Thesis. Please make sure that you site your source of where you obtain these job postings, and take screenshots of the position(s). Once the job posting(s) are no longer available on the Monster website, they cannot be provided to you since that will be violating the employer's privacy.

If you have any further questions or concerns, please feel free to reply back to this email or email us at Monster.

Again thank you for contacting Monster, and I hope you have a great day!

Best Regards,
Latwanya
Monster Global Customer Service

Response 02/07/2016 08:24 PM

Thank you for contacting Monster Customer Service. This automated response is to inform you that we have received your email. You should receive a response to your question or comment within 1-2 business days.

If you need more immediate assistance please contact us at 1-800-MONSTER (1-800-666-7837).

Monster's Customer Service hours are:
Monday through Friday: 8:30am-5:30pm

Your email is important to us and we thank you for using Monster.

Sincerely,
Monster Customer Service

Customer By Email (Laura Gates) 02/07/2016 08:24 PM

Subject: <Graduate Research Usage>
Category: Job Postings

Hello,

I am Information Management student at the University of Maryland, College Park. I am currently working on my Master's thesis on the field of Web Content Strategy. I would like to scrape Content Strategy positions on your website in order to compare with occupations listed by the Bureau of Labor Statistics: Professional, Scientific, and Technical Services: NAICS 54.

I do not intend to use this data for commercial purposes.

Kind Regards,
Laura Gates

[---001:001692:38945---]

Appendix E: Professional Recruitment Letter

Greetings [Name],

I am a Master's student from the University of Maryland conducting thesis research in the field of content strategy. I am primarily working on a comparative analysis of current academic offerings and skills that experienced content strategy professionals possess. Would you be interested in participating in a written-survey for my research study? This interview should only take 10-15 minutes of your time. You may access the survey by selecting the link below:

[survey link]

Kind Regards,

Laura Gates
lagates@umd.edu

Dr. Katy Newton Lawley
Faculty Advisor
katyn@umd.edu

Appendix F: Professional Interview Questions

1. What is your definition of web content strategy?
2. How did you become involved in web content strategy?
3. What do you do to stay current with today's content strategy trends?
4. If you were training a new-coworker on content strategy methodology, what are the most important things that you would share?
5. What (if any) content strategy related courses have you taken?
6. If you had to revisit college, what skills would you want to learn in the classroom?
    a. Why?
7. What advice can you provide for newcomers who practice (or want to practice) content strategy?
8. What other disciplines does content strategy use?
9. Would you consider content strategy to be its own distinct role in a web project or is it an overarching goal?
    a. Why or why not?
10. Describe what the ideal career track to become a content strategist.

Appendix G:Full Academic and Industry KSA Query Results

Below is a query for all academic and industry node levels. Node results that were “0,” “0” for both courses, and jobs were excluded from this query. Indenting the cells provides the best visual representation for how the framework appears within NVivo.

Abilities

	Academic Abilities	Industry Abilities
Content Analysis	2	14
Content Development	8	68
Editing	1	16
Editorial & Content Calendars	0	3
Marketing	1	12
Social Media	1	19
Facebook	0	1
Tumblr	0	1
Twitter	0	1
Writing	4	29
Plain Language	0	1
Writing for the Web	0	4
Content Lifecycle	1	18
Content Performance	1	26
Analytics	0	8
Google Analytics	0	1
Key Performance Indicators (KPIs)	0	1
Search	1	0
SEO	0	10
Content Style Guide	1	19
Branding	0	7
Governance	1	8
Communications with Stakeholders	0	4
Design	5	3
Responsive	1	1
Visual Design	0	2
Information Architecture	2	5
Taxonomy	0	1
Leadership & Management	1	53
Programming Languages	2	4
CSS	0	2

HTML	0	3
JavaScript	0	1
Perl	1	0
Project Management	5	42
Business Plan	0	4
Business Process	0	1
Software Tools	1	3
MS Office	0	1
Photoshop	0	1
Usability	3	17
Stakeholder Interviews	0	1
User Centered Design	0	3
User Audience	0	12
User Engagement	1	8
WCMS	2	11
Drupal	1	1
WordPress	0	1
Web Accessibility	1	1
Total Abilities	48	453

Knowledges

	Academic KSAs Results	Industry KSAs Results
Content Analysis	40	29
Content Development	110	139
Editing	6	23
Editorial & Content Calendars	7	6
Marketing	15	30
Social Media	30	29
Facebook	1	4
Instagram	1	1
LinkedIn	1	1
Snapchat	0	1
Tumblr	1	1
Twitter	1	3
YouTube	1	2
Writing	35	45
Plain Language	2	1
Writing for the Web	10	7
Content Lifecycle	31	31
Content Performance	84	52

Analytics	28	29
Adobe SiteCatalyst	0	1
Facebook insights	0	1
Google Analytics	3	6
Key Performance Indicators (KPIs)	2	1
Twitter Analytics	1	0
Search	12	7
SEO	28	25
Content Style Guide	27	30
Branding	12	11
Governance	9	11
Design	60	19
Responsive	12	2
Visual Design	12	1
Information Architecture	49	44
Metadata	5	5
Site Map	4	2
Taxonomy	2	9
Programming Languages	27	26
CSS	11	8
HTML	9	16
Java	0	1
JavaScript	3	4
PHP	1	1
XHTML	2	0
XML	0	3
Project Management	34	34
Business Plan	12	4
Business Process	2	4
Software Tools	1	11
Github	0	1
MS Office	0	5
Photoshop	0	2
Sketch	0	1
Usability	93	57
Stakeholder Interviews	5	5
User Centered Design	5	5
User Audience	32	24
User Engagement	6	17
WCMS	17	30
Drupal	3	2

EPiServer	0	1
Liferay	0	1
OpenText	0	1
Oracle UCM	0	1
Sitecore	0	1
WordPress	1	1
Web Accessibility	10	6
Total Knowledges	916	882

Skills

	Academic KSAs Results	Industry KSAs Results
Content Analysis	54	18
Content Development	92	94
Editing	5	18
Editorial & Content Calendars	4	7
Marketing	11	16
Social Media	15	16
Facebook	0	2
Instagram	0	1
LinkedIn	0	1
Snapchat	0	1
Tumblr	0	1
Twitter	0	2
YouTube	0	2
Writing	36	40
Plain Language	1	0
Writing for the Web	7	3
Content Lifecycle	29	30
Content Performance	41	36
Analytics	14	16
Facebook insights	1	0
Google Analytics	2	2
Key Performance Indicators (KPIs)	2	0
Twitter Analytics	1	0
WebTrends	0	1
Search	10	0
SEO	13	13
Content Style Guide	17	22
Branding	5	5
Governance	6	5

Communications with Stakeholders	1	2
Design	45	5
Responsive	19	0
Visual Design	1	1
Information Architecture	33	10
Metadata	1	0
Site Map	6	0
Taxonomy	3	2
Leadership & Management	0	9
Programming Languages	34	11
CSS	19	2
HTML	17	5
JavaScript	0	1
PHP	1	0
XHTML	6	0
XML	0	2
Project Management	38	29
Business Plan	14	5
Business Process	3	2
Software Tools	8	4
MS Office	2	1
Photoshop	1	2
Usability	76	21
Stakeholder Interviews	4	2
User Centered Design	1	1
User Audience	26	13
User Engagement	5	10
WCMS	16	11
Drupal	5	2
EPiServer	0	1
Oracle UCM	0	1
WordPress	1	0
Web Accessibility	6	1
Total Skills	758	508

Appendix H:Combined Academic and Industry KSA Query Results

Below is a query for all node levels. Node results that were "0" were excluded from this query.

Indenting the cells provides the best visual representation for how the framework appears within NVivo.

Abilities

	Combined Abilities
Content Analysis	16
Content Development	76
Editing	17
Editorial & Content Calendars	3
Marketing	13
Social Media	20
Facebook	1
Tumblr	1
Twitter	1
Writing	33
Plain Language	1
Writing for the Web	4
Content Lifecycle	19
Content Performance	27
Analytics	8
Google Analytics	1
Key Performance Indicators (KPIs)	1
Search	1
SEO	10
Content Style Guide	20
Branding	7
Governance	9
Communications with Stakeholders	4
Design	8
Responsive	2
Visual Design	2
Information Architecture	7
Taxonomy	1
Leadership & Management	54
Programming Languages	6
CSS	2

HTML	3
JavaScript	1
Perl	1
Project Management	47
Business Plan	4
Business Process	1
Software Tools	4
MS Office	1
Photoshop	1
Usability	20
Stakeholder Interviews	1
User Centered Design	3
User Audience	12
User Engagement	9
WCMS	13
Drupal	2
WordPress	1
Web Accessibility	2
Total Abilities	501

Knowledges

	Combined Knowledges
Content Analysis	69
Content Development	249
Editing	29
Editorial & Content Calendars	13
Marketing	45
Social Media	59
Facebook	5
Instagram	2
LinkedIn	2
Snapchat	1
Tumblr	2
Twitter	4
YouTube	3
Writing	80
Plain Language	3
Writing for the Web	17
Content Lifecycle	62
Content Performance	136

Analytics	57
Adobe SiteCatalyst	1
Facebook insights	1
Google Analytics	9
Key Performance Indicators (KPIs)	3
Twitter Analytics	1
Search	19
SEO	53
Content Style Guide	57
Branding	23
Governance	20
Design	79
Responsive	14
Visual Design	13
Information Architecture	93
Metadata	10
Site Map	6
Taxonomy	11
Programming Languages	53
CSS	19
HTML	25
Java	1
JavaScript	7
PHP	2
XHTML	2
XML	3
Project Management	68
Business Plan	16
Business Process	6
Software Tools	12
Github	1
MS Office	5
Photoshop	2
Sketch	1
Usability	150
Stakeholder Interviews	10
User Centered Design	10
User Audience	56
User Engagement	23
WCMS	47
Drupal	5

EPiServer	1
Liferay	1
OpenText	1
Oracle UCM	1
Sitecore	1
WordPress	2
Web Accessibility	16
Total Knowledges	1798

Skills

	Combined Skills
Content Analysis	72
Content Development	186
Editing	23
Editorial & Content Calendars	11
Marketing	27
Social Media	31
Facebook	2
Instagram	1
LinkedIn	1
Snapchat	1
Tumblr	1
Twitter	2
YouTube	2
Writing	76
Plain Language	1
Writing for the Web	10
Content Lifecycle	59
Content Performance	77
Analytics	30
Facebook insights	1
Google Analytics	4
Key Performance Indicators (KPIs)	2
Twitter Analytics	1
WebTrends	1
Search	10
SEO	26
Content Style Guide	39
Branding	10
Governance	11

Communications with Stakeholders	3
Design	50
Responsive	19
Visual Design	2
Information Architecture	43
Metadata	1
Site Map	6
Taxonomy	5
Leadership & Management	9
Programming Languages	45
CSS	21
HTML	22
JavaScript	1
PHP	1
XHTML	6
XML	2
Project Management	67
Business Plan	19
Business Process	5
Software Tools	12
MS Office	3
Photoshop	3
Usability	97
Stakeholder Interviews	6
User Centered Design	2
User Audience	39
User Engagement	15
WCMS	27
Drupal	7
EPiServer	1
Oracle UCM	1
WordPress	1
Web Accessibility	7
Total Skills	1266

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