Teaching Digital Humanities: How Technology Can Empower Humanities Students and Educators

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ABSTRACT

In Fall of 2017, *Religion in the Digital Age* debuted as an elective for Religious Studies students interested in Digital Humanities. The curriculum consisted of introductory lectures and demonstrations of the application of several digital technologies—Google Sheets, Google Trends, Google Ngram Viewer, GSS Data Explorer, IBM Watson Analytics— in Religious Studies research. While a class like *Religion in the Digital Age* may not pose a complete solution to the problem the Humanities face in an increasingly digitized and market-driven academic and professional worlds, it does offer the potential for a more integrated, timely, a conscientious approach to teaching Religious Studies and Humanities research. From the integration of digital technologies into religious studies curriculums we can learn more about the evolving place and importance of the humanities in our changing world. Many questions remain to be answers, but unanswered questions, and questions yet to be effectively framed, are exactly where the humanities excels. There is no question that embracing, rather than neglecting, the organic intersection of religion, humanities, and data will lead to students who are better prepare to answer and ask the right religious studies questions and will generate more sophisticated, and therefore employable, graduates.

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A Brief History of the Digital Humanities

While the term *digital humanities* is more recent in origin, scholarly pursuits at the intersection of humanities and digital technologies, including in their incarnation as *humanities computing*, have existed for the better part of the last century (Berry and Fagerjord, 2017). For a field that is scarcely united under a single definition, the beginnings of the humanities computing field are surprisingly unambiguous and widely agreed upon, and those beginnings are attributed to an Italian Jesuit priest. In 1949, Father Roberto Busa set out to index the nearly 11 million words of Medieval Latin that comprise the entirety of the works of St Thomas Aquinas. Having heard of recent advances in digital computing, Father Busa reached out to Thomas J. Watson at IBM. With the help of the emerging tech giant, Busa transferred the entire texts to punch cards and a concordance program. Busa's team effectively wrote computer software capable of semiautomatic lemmatized all 11 million words of Aquinas's texts with some human handling of word forms that the computer could not handle (Schreibman et al 2004).

Initially reticent toward new technologies, and lacking easy access to the then colossal instruments necessary for computational pursuits, it wasn't until the 1960s that other humanities scholars launched their own concordance programs. For a time, the proponents of concordance programs were primarily individual scholars with interests centered on a specific set of texts. In Europe, several major language academies established computing facilities to assist in the compilation of dictionaries. Much of the early role of digital computing in the humanities was primarily limited to the production of concordances, but the same computing

software was also found to be useful in disputed authorship studies. Digital computing allowed scholars to explore a quantitative approach to style and authorship studies, using word counts, punctuation, and sentence lengths (Hockey, 2004).

From the 1960s on, humanities computing developed at a remarkable pace alongside innovation in, and expansion of access to, computer technologies. In the early 1980s, academic linguists at the University of Birmingham and lexicographers at Oxford University Press began to employ computing in their work and soon computing took on a central role in the field of lexicography. The efforts of the lexicographers at Oxford University Press were financially backed by Collins and a 20-volume second edition of the *Oxford English Dictionary* resulted. As humanities computing gained traction in academia, there became a need for Humanities Computing professionals. Those early humanities computing professionals, not so unlike their counterparts today, were often staff members at university libraries or other non-tenured faculty asked to help professors without technical expertise build digital projects, particularly archives, for which they would never receive direct credit. The demand for humanities computing resources at institutes of higher education continued to grow throughout the 1980s, but the scope of humanities computing remained relatively narrow throughout the decade. (Allington et al. 2016).

The arrival of the World Wide Web in the 1990s brought with it the potential to practice humanities disciplines in new ways. The web brought with it new possibilities for publication and promotion of scholarship in the humanities

and fostered new collaborations across disciplines and across continents. While emerging technologies broadened horizons for humanities scholars, new technologies were hardly in the driver's seat. Humanities computing was primarily concerned with the application of computing technologies to textual materials, in ways that demonstrated the efficacy of computers as "servants," as opposed to "participants enabling of criticism"(Berry and Fagerjord, 2017).

The genesis of the term "digital humanities," and the moment where the computing tool graduated into a field unto itself, can be identified with some certainty. In 1999, the University of Virginia English Department, coordinated a conference titled *Is Humanities Computing an Academic Discipline?*(Nowviskie and Unsworth 1999). In 2001, the emerging field was still widely known only by and for "humanities computing" and was largely limited to the digitization of existing humanities text. When Susan Schreibman, Ray Siemens, and John Unsworth approached Blackwell Publishing about editing their work, then titled *A Companion to Humanities Computing*, Blackwell suggested the titled that the title *A Companion to Digitized Humanities* might appeal to a wider audience. Unsworth countered with *Digital Humanities* so that the field would not appear to be merely about digitization, and the term was born of the combined effort of the authors and editor to appeal to appeal broadly to humanities scholars. *Digital humanities* as we know it today might be seen as the product of a marketing strategy, but that forgets the massive changes underway thanks to the increasing ubiquity of the World Wide Web.

The *digital humanities*, as we now know it, would not have developed prior to the paradigm shift resulting from the arrival of truly internet-capable mobile devices and social media platforms with mass userbases in the mid-2000s. The push for open-source data and collaborative endeavors that are hallmarks of DH were not nearly so accessible in the world before ubiquitous networking. In the 2016 edition of *Debates in the Digital Humanities,* William Gibson talks about the cyberspace *eversion*: the massive shift in public perception of "the network"[1] as "a world apart to a part of the world"(Gold and Klein 2016). This "eversion of cyberspace" inspired scholars to imagine new possibilities for technology in the humanities. In 2004, the same year the Facebook was launched, *Companion to Digital Humanities* was published, with a foreword from Father Busa describing digital humanities as the "...automation of every possible analysis of human expression...." "Digital humanities" was a buzzword and digital technologies suddenly promised to change the way humanities were done(Busa 2004). The old model of humanities computing would continue to exist and expand into present day, as a critical subfield of its own, but by 2004 most scholars were interested in *digital humanities* encapsulating a far broader scope of ideas and scholarly practices. In short order, several more influential works characterizing this new *digital humanities* were published and soon it seemed that everyone wanted be part of the "next big thing" in humanities research (Cohen 2010). In 2005, three years after ACH/ALLC[2] leaders initially

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[1] I'm using "network" here, in the same sense as Gibson, to describe the World Wide Web and the Internet with interoperating networks, such as cellular data networks and GPS satellites

[2] Association for Computers and the Humanities/ Association for Literary and Linguistics Committee

conspired to merge their organizations under the umbrella of *digital humanities*,

The Alliance of Digital Humanities Organizations was established and the first

Digital Humanities conference was held the following year. In following years ADHO,

and its growing list of international constituent organizations, launched several peer

reviewed journals, including *DSH: Digital Scholarship in the Humanities*--an

international, peer-reviewed journal published by Oxford University Press--and

Digital Humanities Quarterly, an open-access journal for "articles, reviews, case

studies, and opinion pieces on all aspects of digital humanities" (ADHO.org). The

digital humanities also emerged outside the realms of the traditional academic

conference. In 2008, THATCamp "unconference" was founded at at the Center for

History and New Media at George Mason University as an alternative to the expense

and structure of conventional conferences for "technologists and humanities

professionals." While THATCamp it did not, and still does not, explicitly describe

itself as a conference *for* the digital humanities, it has served as an important forum

for scholars interested in DH. Over the past decade, countless conferences for or

including digital humanists have been held. Today, digital humanists continue to

embrace the interdisciplinary and collaborative approaches that were hallmarks of

first DH conferences and projects. In both the 2012 and 2016 editions of *Debates in

the Digital Humanities* scholars challenging the status quo in academia by embracing

open-access, open-source, and collaborative approaches to scholarship were

persistent themes.

  The past decade has seen steady growth in the type of digital humanities

programs available, including university courses, concentrations, formalized

minors, specializations, certificates, and even undergraduate degrees, and in that

time the projects that fall under the umbrella of DH has also grown. There is no

doubt that the vast majority of DH programs and projects engage in similar

activities. A 2017 global survey of DH programs found that programs involving

analysis, meta-activities, and creation (e.g., programming, designing, writing) are by

far the majority (Hackney 2017). However, there are thousands of digital

humanities courses and programs and there are changes to existing programs and

new courses and programs year to year covering a wide range of topics from writing

poetry using digital tools to approaching digital humanities as a potential

pedagogical catalyst for social change by promoting an intersectional approach to

humanities studies (https://cla.umn.edu/gwss/research/digital-humanities-social-

justice).

Understanding the Digital Humanities

The origins of digital humanities may be easy to trace, but consensus on the

definition of DH is far more elusive. Are *the digital humanities* a field? Are they a

discipline? Or are *digital humanities* merely a collection of tools or something else

altogether? Part of the problem in ascertaining a clear definition is that there are no

clear authorities in the digital humanities. Certainly, there are experts in data

science and scholars in numerous disciplines and fields who have spent countless

years researching and publishing under the banner of digital humanities, but few of

these individuals hold formal degrees in DH. Formal concentrations and certificate

programs have only existed for about a decade and full blown degree programs even

less than that. A quick Google search for "digital humanities" yields thousands of news articles that describe digital humanities courses, lecture series, forums, grants, and programs offered by institutes of higher education. Yet there are no PhD's in *the Digital Humanities* to turn to and ask, "is the Digital Humanities?" Instead, there are as many definitions of *digital humanities*, as there are experts and scholars who would claim the title of digital humanist.

In order to begin to make sense of the massive body of work concerning *digital humanities*, I turned to existing meta-analysis. In *The Digital Humanities*, published in 2015, Eileen Gardiner and Ronald Musto, surveyed existing literature on *digital humanities* in search of a singular definition. Like Gardiner and Musto, I also approached the search for a definition of *digital humanities* in a way that is probably too familiar to students today: I googled it. Like Gardiner and Musto, my search yielded none of the "standard" dictionary entries we've learned to expect from sites like Free Online Dictionary or Merriam-Webster. However, the very first result yielded a detailed Wikipedia article on *digital humanities.*

Why does *Wikipedia* matter? Haven't we all been warned never to trust *Wikipedia* as a scholarly source? *Wikipedia*, while controversial, is often the first place that the public turns for information, as evident by its consistent placement near the top of search engine queries. While *Wikipedia* may never hold the authority of a peer-reviewed academic article, the *Wikipedia* article on Digital humanities has the distinction of being, undoubtedly, the most regularly-viewed article on *Digital humanities*; for that fact alone, it carries greater weight than any one definition found in a single peer-reviewed scholarly article. Given its relevance to the public

concept of *digital humanities*, I agree with Gardiner and Musto's assessment that the

Wikipedia is highly relevant to any discussion of the definition of *digital humanities*.

In the three years since *The Digital Humanities* was published, the definition

provided by Wikipedia has changed. At the time, Wikipedia offered the following

definition:

> Digital Humanities is an area of research and teaching at the intersection of
>
> computing and the disciplines of the humanities. Developing from the fields
>
> of humanities computing, humanistic computing, and digital humanities
>
> praxis, digital humanities embraces a variety of topics, from curating online
>
> collections to data mining large cultural data sets. Digital humanities (often
>
> abbreviated DH) currently incorporates both digitized and born-digital
>
> materials and combines the methodologies from traditional humanities
>
> disciplines (such as history, philosophy, linguistics, literature, art,
>
> archaeology, music, and cultural studies) and social sciences with tools
>
> provided by computing (such as data visualization, information retrieval,
>
> data mining, statistics, text mining, digital mapping) and digital publishing.

Today, the Wikipedia page on *digital humanities* opens with a description of digital

humanities that is similarly categorical to the one in 2015, but now also includes a

new categorical "definition" prefaced as follows:

> The definition of the digital humanities is being continually formulated by
>
> scholars and practitioners. Since the field is constantly growing and
>
> changing, specific definitions can quickly become outdated or unnecessarily

limit future potential. The second volume of Debates in the Digital

Humanities (2016) acknowledges the difficulty in defining the field: "Along

with the digital archives, quantitative analyses, and tool-building projects

that once characterized the field, DH now encompasses a wide range of

methods and practices: visualizations of large image sets, 3D modeling of

historical artifacts, 'born digital' dissertations, hashtag activism and the

analysis thereof, alternate reality games, mobile makerspaces, and more. In

what has been called 'big tent' DH, it can at times be difficult to determine

with any specificity what, precisely, digital humanities work entails."

The remainder of the definition amounts to a cursory list of humanities disciplines

in which digital technologies have been applied and a list of the tools utilized within

the digital humanities. It seems that the world's most popular online Encyclopedia

now acknowledges that "digital humanities" as both a concept and field are evolving

and will continue to change as long as there are scholars working under the

umbrella of *digital humanities.*

The *Wikipedia* article may be as close as we can get to a standard "definition"

of DH, owing only to the fact of its popularity. Gardiner and Musto spend a lot of

time touching on all the ways that scholars have defined "digital humanities." They

consider definitions of *digital humanities* ranging from "a series of practical

approaches," to "a specific theoretical framework," to the collaboration between

"traditional humanists" and IT departments at campuses or centers for research.

They even ask whether *digital humanities* might be redundancy of terms, owing to

the fact that humanities research and teaching is already inextricable from the

technologies of our digital world (Gardiner and Musto 2015). Yet, like most of their peers who have also written "comprehensive guides" to "digital humanities" in recent years, they stopped short of offering a "working definition of the digital humanities."

Digital humanities are a product of the technologies from which they emerged and have matured in an academic culture that is intentionally eclectic and and interdisciplinary and which has often encouraged DH scholars to challenge conventional gatekeeping and to embrace "open-source journals" and attend "unconferences." Discomfort with the amorphous umbrella of *digital humanities*, scholars, and perhaps driven by what Berry and Fagerjord identify as pervasive "disciplinary anxiety" (Berry and Fagerjord 2017), for over a decade DH scholars have spent a lot of time contemplating "What is DH"? In the last few years, perhaps as a sign of the end of the "Eternal September of the Digital Humanities," there has been a noticeable shift away from that question (Gold 2012). While the 2012 edition of *Debates in the Digital Humanities* included an entire section titled "Defining the Digital Humanities" consisting of ten chapters on the subjects, the 2016 edition lacked a single chapter on the topic. Instead, the first section of the 2016 edition, titled "Histories and Futures of the Digital Humanities" consists of chapters centered

I see no benefit in putting a box "digital humanities" as they exist today, nor do I see the necessity . I don't think that would be practical or helpful, but but I will assert that there is value in recognizing *digital humanities* as something that is worth studying apart from the humanities disciplines in which it is practiced. While digital technologies share the democratizing potential of the printing press, unlike

the Gutenberg Revolution, the pervasive digital necessarily disrupts the Petrachan notion of a solitary scholar. The Digital Revolution cannot be sufficiently addressed within the same Petrachan humanist framework as the changes brought about by the arrival of the codex book in the form of the Gutenberg bible in the fifteenth century or the shift from codex to print (Gardiner and Musto 2015). While establishing a strict definition of digital humanities may be a futile endeavor, the implications of the Digital Revolution for the humanities demand serious scholarship and perhaps a field unto itself.

Why teach DH?

While the nature and merits of "the digital humanities" are still subject to debate, scholarly activities involving *digital humanities* show no sign of slowing down in the near future. As our world becomes increasingly digital, digital humanities studies answer a demand for greater technical literacy both within and beyond the Academy. Appalachian State is just one among many institutions of higher education to see the addition of *digital humanities* to their course catalogues in recent years. At the time of writing, I was able to identify courses, lecture series, and seminars concerning *digital humanities* promoted by institutes of higher educations across the globe numbering, by a conservative estimate, in the high hundreds. Participating institutions range from community colleges to state universities to elite private colleges, including each of the "Ivy Leagues." While some scholars have declared "The Digital-Humanities Bust," the digital humanities as a term and topic has hardly plateaued since it first burst onto the scene over a decade

ago. In March of 2018 it was announced by the University of Toronto that their Arts & Science Council had approved a Digital Humanities minor—described as an "interdisciplinary program [that] combines humanities and computing"— to be launched in September of 2018 (Ramanujam and Sordjan 2018). The UNC system appears ready to continue to invest in DH research, with North Carolina State University now offering a graduate certificate in the Digital Humanities. Dozens of other academic institutions house departments, labs, and centers devoted to the study and practice of digital humanities. ADHO is going strong and continues to coordinate the activities of several DH organizations world wide, including the publication of several peer-reviewed journals dedicated to digital humanities and the annual *Digital Humanities Conference*. For now, the digital humanities are here to stay and that alone is a case for offering courses that encapsulate pedagogy and subject matter associated with *digital humanities.* Ultimately, establishing a strict definition or defense of *digital humanities* is neither possible nor helpful. For the purpose of designing and assessing a new course on the humanities is to understand, generally, it may be more productive to study prevailing models of digital humanities, rather than engaging in debates about the merits of digital humanities, whatever it may be.

I believe a strong case can be made for focusing on the potential of quantitative analysis as central to digital humanities pursuits. Based on the trial and error of other digital humanities educators, it is evident that certain digital humanities focuses and pedagogies are better received in the classroom than others. Like the students Ryan Cordell described in the 2016 *Debates in the Humanities*, the

students who registered for *Religion in the Digital Age* didn't sign up to be "digital humanists" per say. While there are no doubt students who envision a career within digital humanities as their primary field of focus, I observed in the Fall 2017 class that students appeared most engaged when classes centered around applying digital tools and analysis to their respective humanities interests. Students appeared to be less engaged during group discussions of reading materials, both in terms of verbal participation and appearance of distraction. Like Cordell, I observed that students did not seem terribly eager to engage in even the limited meta-discussion and would take it even one further to say that students were not too keen on engaging in in-class conversations based on assigned readings. Instead, I noticed students most engaged when following along with hands-on activities, and when the classes took on the form of "makerspaces," allowing students to collaborate on small projects of their own. Critics of digital humanities have expressed concern that tendency of DH scholars to promote project-based and lab-based research over reading and writing feeds into the push to replace traditional tenure-track academic employment with so-called "alt-ac" careers associated with the privatization of Higher Ed. This critique ignores the fact that the demand for project-based learning comes from within the classroom and demanded by the subject matter itself, rather than by administrators angsting over funding for increasingly unprofitable humanities departments. It is also wrong to assume that the demand for more digital technology to be integrated into the curriculum is driven solely by anxieties about the post-grad job market. It should not be surprising that students, and educators, would be

drawn by curiosity to increase their digital literacy in an increasingly digitized world.

While it may make humanities scholars squeamish, students hear time and time again that technical skills are essential to their financial futures and that is bound to affect their choice of course of study, for better or worse. Choosing curriculum based on its perceived value in the job market may be problematic, but it may also be unwise to ignore the anxieties of students whose enrollment and participation is necessary to a successful learning experience. I won't claim that students are *necessarily* correct in their assessment that humanities students must possess certain technical skills in order to compete in the non-academic job market. In fact, there is evidence that soft skills are actually in higher demand than specific technical skills, students have been primed to seek to build knowledge associated with STEM fields (Pew Research Center 2016). Georgetown University's Center on Education and the Workforce have tracked unemployment of graduates from various disciplines for years and have found that all graduates see spikes and troughs in their employment prospects that reflect changes in the economy and that humanities majors are not, in any discernible way, an outlier. While STEM graduates may see higher starting salaries than humanities graduates on average, a "high-paying" degree is no guarantee of a high salary and a so-called "low-paying" degree is certainly no guarantee of a low salary (Carnevale et al. 2015). As an example, Georgetown's 2015 study points out that one in four humanities and liberal arts majors earn more than one quarter of architecture and engineering graduates. Even more promising, the AAC&U's 2014 employer survey found that, while humanities

graduates in professional fields earn slightly less upon graduation, by mid-career those trends reverse in favor of humanities graduates (Humphreys and Kelly 2014).

Regardless of the validity of concerns about the utility of a humanities degree post-grad, if students are to have any sense of ownership over their learning, and if we hope to enroll enough students in the first place, the fact remains that elective course descriptions must appeal to students. Data analysis skills can be taught in such a way that meets the demand of humanities students, without abandoning the core of humanities education. Digital humanities with data analysis paired with a "makespace" pedagogy front and center offers the potential to address engage in "conventional" humanities scholarship at the same time as preparing students for the world of digital scholarship. While teaching technical skills such as coding and the use of analytics software necessarily means spending less time reading and writing in-class, teaching data analysis does not have to come at the expense of developing "soft" or "transferable" skills. By assigning less ambitious data analysis projects designed with the goal of educating students, rather than producing publishable results, we can broaden not just the toolbox of humanities education but also the scope of subject matter. When students acquire data analysis skills by application, rather than by rote memorization, they simultaneously gain an awareness of the limitations of existing digital archive collections in the way that systemic underrepresentation of certain groups mirrors power structures to which the humanities are not immune. In this sense, digital humanities possesses a radical potential.

At face value, teaching students to utilize the Data Discovery feature in

Watson Analytics, perform queries on Google sheets, or carry out a search on Google Trends may appear to be a limited set of technical skills. However, I argue that exposure to tools of quantitative analysis expands student understanding, not only of the difference between quantitative and qualitative analysis, but of their relevance as humanities scholars, and of the important role that humanities scholarship continues to fill, in an increasingly digital world. Further, it fulfills a natural desire among students and educators in the humanities who are curious about digital innovations that have the potential to broaden their field of study and improve their research methods.

RELIGION IN THE DIGITAL AGE

Why teach *Religion in the Digital Age?*

Digital technologies are interwoven into every aspect of how we function socially, academically, and professionally. Students of Religious Studies, and the humanities at large, often express concerns that their degree will not expose them to digital technologies and help them to develop technical skills that they perceive to be of increasing importance after graduation. *Religion in the Digital Age* supposes that students of Religious Studies are, in fact, uniquely positioned to learn digital technologies and utilize data analysis tools, while asking questions and make observations that transcend "just data." *Religion in the Digital Age* sought to teach students digital skills, not in place of conventional humanities focuses, but as a tool to facilitate improved research in their respective disciplines.

In order to address the demand for more digital curriculum without abandoning the humanities scholarship at the core of the Religious Studies field, *Religion in the Digital Age* utilized several pedagogical methods, which included consisted of assigned readings, class discussions, demonstrations, projects, collaboration, and presentations. Assessment of student performance involved independent and collaborative projects and presentations for each digital tool covered in class as well as a comprehensive final project, which required students to utilize the tools taught in class and to write a final paper based on the findings of their research and analysis. The class made use of several tools to facilitate data analysis using digital analytic software and search engines. Google sheets gave students a foundation in the basics of data management and analysis. Included in

the Google sheets curriculum was a very basic implementation of SQL which is used for Google sheets' "query" command. The class explored concepts of "Big Data" using Google N-grams (based on Google Books) which allowed for historical analysis of published literature since the 1500s, and Google Trends which provides access to anonymous search histories on Google from 2004 to the present. The class also covered GSS Data Explorer which provides access to one of the richest data sets in use by sociologists of American opinion and also introduced some basic statistical concepts like correlation, regression, and chi-squared statistical tests. The skills student acquired through the study of these preceding technologies were combined and compounded upon in IBM's Watson Analytics, which requires the uploading and manipulation to produce correctly formatted data sets which can then be analyzed using a natural language interface to ask questions of the data, run statistical tests, and produce visualizations of data. Along the way small projects were used to assess students' competency in each of these tools. The final project (cumulative) required that students navigate the programs on there own in order to ask and answer a research question (formulated at the beginning of class and then used as a touchstone for each mini-project) and to then write on, and present to the class, their findings.

CLASS OBSERVATIONS

Over the course of the semester I sat-in on each class and took bullet point notes. My notes included observations of attendance, student participation overall, the quantity and quality of questions asked by students, specific comments made my students, student performance on projects, the professor's feedback, and more. My observations on a given day were highly dependent on the nature of the class. On days where their were student presentation, I was able to gather far more detailed information about how each student was learning, as compared to days where I sat behind everyone while they followed along. I have included the general form I used to guide my observations in the appendix.

Week 1 Observations (Introductions and Aportfolio)

On the second day of class Elaine Gray visited the class to introduce Aportfolio. Aportfolio is an academic website offered by Appalachian State where students and alumni can create a digital portfolio. According to the Aportfolio webpage, "The ultimate goal of the students' Aportfolio is to intentionally document learning and to design a positive digital presence for a professional audience." The university encourages the use of Aportfolio " in the context of a class, program, major, research project, international experience or career search." Students and instructors can learn how to use Aportfolio by way of the online tutorials, individual consultations, class presentations, and assistance during designated office hours and via the Help Desk. Dr. Randall Reed opted to set aside the second day of class for an Aportfolio training session with the hope that students could then use Aportfolio

to effectively keep a digital portfolio of their projects throughout the semester. A few students indicated that they had worked with Aportfolio in previous classes, but about half the class had not. Students expressed apprehension before the demonstration began based on past experiences in which they struggled to use Aportfolio. The students who were new to Aportfolio struggled to keep up with the demonstration and expressed confusion. However, one student who revealed that she had worked with Aportfolio in a previous class shared her thoughts that the new version is actually more user friendly. Aportfolio was used throughout the semester and will be discussed at greater length in the "Analysis" section of this paper.

Week 1 Reflections

The student reaction to the Aportfolio training was generally poor. Students expressed frustration and confusion during the training session, and volunteered complaints about the difficulty they found in using Aportfolio. By the last week of classes, all students demonstrated that they could navigate Aportfolio to some degree, but two students failed to upload their final projects to Aportfolio. In one of these cases, that individual received assistance from myself and the instructor, but was still unable to upload her final paper. It was also noted that, while some students successfully used Aportfolio to present their final research project, the presentations were not of remarkable quality.

Week 2 & 3 Observations

The first three weeks of class largely comprised of a combination of lecture, reading assignments, and discussion intended to familiarize students with research

methods. Students were familiarized with the types of research utilized by scholars of Religious Studies, how to devise their research question, and the methods of research at their disposal.   Due to the voluntary nature of participation during this phase of the semester, it was somewhat difficult to gauge how each student was performing. While students were aware that participation would affect their grades, reading assignment competition and class participation were not directly enforced. It was particularly difficult to determine how the students who verbally participated only minimally were responding to teaching methods during this time. However, my observations during this time were encouraging. When students did speak the quality of their comments and questions indicated that they were grasping introductory lectures about approaching humanities research using digital technologies. Two students were noted to respond consistently when the class was asked direct questions, while the other five often shied away but were observed taking notes. The students who did comment during discussions of research questions were inclined toward "descriptive" type research questions that were overly broad in nature. While they understood some of the basics of approaching research, they required some guidance as they refined their ability to appropriately "narrow" research questions. The students were generally confident enough to ask good questions about research methods, but were appropriately challenged the lecture materials. These perceptions were backed by the exit survey, in which five students reported they were "somewhat confident" in their ability to conduct research, one reported they were "neither confident nor unconfident," and one reported they were "somewhat unconfident." In class discussion revealed that

students were less confident about their ability to use digital quantitative analysis tools. This interpretation is backed by the exit survey, in which all seven students reported they were either "somewhat unconfident" or "extremely unconfident" in their abilities to use digital quantitative analysis tools on the first day of class. The second day of class centered around a lecture on philosophical realism and interpretivism, and how those philosophies inform our approach to humanities research questions. Surprisingly, students were largely unfamiliar with these philosophical concepts. Unfortunately, on this day, three students were using their laptops and seemed distracted, yet could not answer questions directed at the class. Fortunately, students were more engaged when asked to each identify the quantitative element of their research questions and were all reasonably successful in doing so. The third week of class lecture and discussion was focused on discussing the readings and on aiding the students in identifying and refining their research question. All three groups had identified a research question, as was requested, but none had entirely refined their question. One group in particular was struggling to identify a quantitatively driven research question at all. It was difficult to determine how much

It was observed on the first day of class that 3 students were taking notes on paper, 3 students were using just laptops, and one student appeared to be taking notes on paper as well as using their laptop. By the fourth week, students were not observed taking notes at all; this was not surprising given that the lecture pace was quite fast once we began working with the data analysis applications, and because

the syllabus and instructional videos and other support materials on the

applications we covered were readily available via Asulearn.

Week 2 & 3 Reflections

It was clear that the materials covered in the lecture were necessary to

provide a launching pad for students to further develop their research abilities.

Given the nature of class discussions and questions asked by students, I conclude

that the material was appropriately challenging. However, I was left with the

impression that students regularly became distracted during these discussions. I

noticed a couple students regularly opened unrelated tasks on their laptops. It might

be noted that these students were seniors and on more than one occasion the

alternate tasks on their screens looked to be resumes. Despite some "multitasking"

on the part of a few students, the classes were still productive and these same

students appeared engaged more often than not. Later on those same students were

less often distracted, leading me to believe their diversions from class materials

were opportunistic and circumstantial. It is then my conclusion that these students

were not necessarily disinterested or incapable of focusing on lectures and

discussions, but instead were simply distracted for personal reasons.

Weeks 4-8 (Google Sheets)

Google Sheets is the Google Drive web-based application with many of the

same functions and features as Microsoft Excel. In contrast to Microsoft Excel, which

must be purchased as part of a Microsoft Office suite, Google Sheets is available for

free to anyone with a free Google account. Like other Google Drive web-based applications, Google Sheets can be shared and edited live. It is readily compatible with Microsoft Excel and CSV files and can easily be saved in other file formats.

In the fourth week of classes, the lectures took the shape of tutorials on Google sheets. For the most part, students were able to keep up with the introductory material. However, some students did struggle to make a copy of the "view only" document that was sent to them and others struggled to hide and unhide columns. These particular challenges were not surprising given that over half the class had not worked with Google Sheets before, but one student in particular continued to struggle with these issues for longer than the others, indicating that a more general lack of familiarity and dexterity may have been at play. Students appeared more consistently attentive than in previous weeks. While the demonstrations occasionally had to be paused so that students who were more challenged by the tasks could catch up, overall the demonstration-style lectures accommodated the full range of student abilities.

By the fifth week of class students demonstrated marked improvement in their ability to use Google sheets as well as their ability to keep up with demonstrations and comprehend new concepts introduced to them. In contrast to the previous week, all students had developed the ability to navigate Google Sheets without constant step-by-step support. Students who required hands-on support the previous week demonstrated the ability to compensate when they fell behind with minor assistance from neighbors. While some students expressed doubts about their abilities, and the lecture had to be stopped to provide time for instances, upon

further investigation most of the issues came down to small typos in coding queries. It seemed that typing proficiency was a real challenge for at least one student. The day before the first project—which was to prepare a graph they created using Google Sheets— was due, the students were given the last half of class to ask questions about the previous homework assignment and about the upcoming presentations. Only one student asked a question about the homework assignment, and it seemed clear that most students had not completed the assignment. However, students took full advantage of the independent work time at the end of class to start their graphs and ask pertinent questions. Based on the student questions during this time, despite grasping more complex tasks like queries, some students were still struggling with more basic Google sheets functions, such as creating graphs from groups of data that aren't already next to each other on the worksheet.

The class prior to the final Google Sheets presentations was set aside as an independent study day, while some students took advantage of the time to work on the project and ask questions others left early or were not focused on their projects. The presentations revealed that all of the students had learned from lecture, but the difference in student abilities were still very apparent in the final presentations. It was necessary to commit far more class-time to provide feedback to the students who were most challenged by the project than to the students who completed the Google sheets project with ease. The first group was successful in researching a topic and creating and presenting graphs based on the data they found, but they had some difficulty refining their research question. The students initially struggled to explain the meaning of their results, but with some input from the lecturer the

students were better able to explain their research question. Despite some hiccups,

this first group demonstrated a basic ability to answer a research question using

Google sheets as a data analysis tool. Both members of the group spoke and

appeared to be clear about the details of their project. The second group of students

successfully defined their research question, and very clearly presented and

provided solid interpretation of their results. The lecturer suggested some

corrections to the phrasing of their research question; as opposed to "…more

women *are* spiritual," he stated that "…more women *identify* as spiritual…" is the

appropriate phrasing. The lecturer also pointed out that the group used the query

function unnecessarily. Again, both group members participated in the presentation

and seemed to understand the contents of their presentation. The third group

successfully defined a research question, but they struggled to interpret their

quantitative analysis and present it as an effective graph. Based on the dataset they

used the group was on the right track, but the graphs the presented actually failed to

support their hypothesis. In this group, only two out of three fully participated in the

presentation. My observations during class indicated that all three students

participated in, and understood, their project. My impression was that the third

student was uncomfortable, and perhaps unprepared, to speak in front of the class.

All of the students who spoke used "filler" language such as "like" and "um."

Google Sheets Reflections

   Students, for the most part, seemed engaged and positive throughout the

Google Sheets unit. In the Google Sheets survey, the majority of students rated the

process of learning Google Sheets as "neither easy nor difficult," "somewhat difficult," or "extremely difficult." In combination with in-class observations, the survey results suggest to me that the Google Sheet lesson plan was appropriately challenging.

Overall, students appeared more engaged once the Google Sheets demonstrations began. It is not clear if students appeared more engaged because the students preferred learning Google Sheets to learning about research methods, or if students simply were more attentive when they were required to follow along on their own desktops, as opposed to the earlier lecture and discussion based classes. This was reflected in the Google Sheet survey, in which 6 out of 7 students ranked the in-class demonstrations to be of greatest importance to their learning process. During these demonstrations, I only occasionally noted a student distracted from the task at hand. I also observed a jump in student abilities when projects were assigned. While optional homework seemed to have limited effect on student motivation, when the class period before the project was due students were highly engaged and more inclined to ask pertinent questions. Projects, overall, were of moderate importance to the students' learning process, at least according to the student responses in the survey. There was limited consensus among students, but on average students ranked individual projects as above group projects in importance. Interestingly, half the class ranked "peers" among the top three elements most important to their learning, but two students ranked "peers" 5th and 6th in importance. Given that there was a wide range of skills it is not surprising that some students relied more heavily on peers, while others didn't depend on peers at

all. A few students mentioned in class that the Google Sheets videos on Asulearn were very helpful, yet in the surveys there was little consensus as to the importance of the videos. One student ranked videos as their second most important tool for learning Google sheets, and the rest of the class ranked videos as only 3rd, 4th, or 5th most important.

Week 9-10 (Google Ngrams & Trends)

Google Ngram Viewer is a free online search engine that charts the frequency of any set of comma-delimited search strings in its database of over 5 million books published between 1500 and 2008 as a percentage of works published in that year. The engine supports the use of partial terms, wildcards, and a number of tags and operators can be used to fine-tune searches. User picks from about two dozen corpora to search each of which was selected using different parameters. Corpora are available in English, simplified Chinese script, French, German, Hebrew, Spanish, Russian, and Italian.

Google Trends is a public search tool that shows how often a particular search-term is entered relative to the total search-volume over a given range of time in a given region between 2004 and today. Users can choose to search worldwide or by country, and the search generates heat maps based on the percentage of search volume that the term represents in a given region.

The class caught on quickly to the basics of both Google Ngrams and Google Trend. There was no need to slow down to allow students to catch up, and the only time that students voiced any confusion was in the application of some of the more

complex Ngrams features. Students enthusiastically presented their first Ngrams assignment findings on the second day of class and required minimal feedback to prepare for the final project. All three groups effectively identified their research question, used Ngrams and Trends to produce relevant graphs, and presented appropriate analysis of their findings. All three groups successfully created their presentations using Aportfolio this time, but I didn't observe the presentations to be terribly well organized or visually impressive. Regardless, all three groups successfully identified a research question and used both Google Ngrams and Trends to address those questions. However, all three groups struggled somewhat to provide meaningful interpretations of their findings. I also observed that some students failed to use some of the more advanced search features that could have improved the quality of their graphs. Again, students tended to use filler words and one student failed to speak at all during the presentations, but generally students seemed more confident and were clearer in their delivery than with Google Sheets presentations

Google Ngrams and Google Trends Reflections

After discussing research methods and learning Google Sheets for several weeks, Google Ngrams and Google Trends were a breeze for this students; this was evident both in the surveys and in-class observations. Students were attentive but less "intense" in their focus as compared to with Google Sheets, and they generally seemed more eager to present and discuss their findings to the class.

While students met the requirements for the assignment and project with ease, it was my impression that students may have underutilized both applications to some degree. Some of the more advanced features covered in class were neglected where it might have improved the quality of their Google Ngrams graphs. It was unclear if the improvement in the students' presentations should be attributed to development of their research and presentation skills or if students were simply more comfortable with Google Ngrams and Trends than with Google Sheets.

Week 11-13 (GSS Data Explorer)

GSS Data Explorer, from NORC at the University of Chicago, is a digital database of all data generated by the General Social Survey since it was launched 1972. The GSS is conducted an in-person interview by National Opinion Research Center (NORC). It was conducted every year from 1972 to 1994, and since 1994 the survey has been conducted every other year. As of 2014, samples were collected from 30 countries on over 5,900 variables with 59,599 total respondents. According to the GSS Data Explorer website, GSS is a major teaching tool at colleges and universities and is used by 400,000 students each year. An account is required to use all of the GSS Data Explorer tools, but the account is free. Users can search variables (eg. GSS questions, variables, and publications by subject, year, or keyword), analyze data without statistical software, view trends and compare user responses with visualizations, and extract data from GSS for use with a number of

popular statistical software packages. Students are also able to save any selected variables, analyses, and visualization to access and share.

Initially, students struggled to log in to GSS. A significant amount of class time was wasted on the first day GSS was introduced because several students ran into problems logging into GSS. Even after successfully creating a GSS account, some students had problems logging into GSS. I attempted to assist a few students with logging in, but it was clear there was a flaw in the GSS login system. Despite the time lost due to difficulty with logging in, students were prepared to present their projects just two class periods after beginning GSS. The first group effectively identified a research question, used GSS to find relevant data related to that question, and presented their findings. However, the lecturer had some questions as to the quality survey questions used to build the dataset found on GSS. The other two groups successfully identified their research questions and used GSS to answer them. Unlike with the first group, the quality of the datasets used seemed to be acceptable.

GSS Reflections

Once we got past the problems with logging on, students learned GSS with relative ease and seemed comfortable using it. The surveys indicated that students, while previously unfamiliar with GSS, were generally confident in their ability to use GSS after presenting their projects. Most students also indicated they believed they would use GSS again in future academic or professional endeavors.

Week 14-18 (Watson Analytics)

Watson Analytics is a "smart data analysis" and "visualization service" offered by IBM. IBM Watson Analytics demanded billions in R&D, and IBM is not offering it for free. While it has incredible potential utility in academics, IBM has primarily promoted Watson Analytics to the private sector, perhaps not surprising given that IBM had hoped it's Watson artificial intelligence programs would generate billions of dollars in revenue. Watson Analytics is highly novel in that it allows the use of automated predictive analytics and natural language queries. Watson Analytics is promoted as a way to automate the process of discovering patterns and meaning in data without the assistance of a data specialist.

Despite taking the time to insure students had created accounts and could log on the previous week, there were some problems when students logged on to Watson for the first time. A few students were automatically logged in to the old version of Watson, which made it difficult for them to follow along with the class. I acted as the substitute instructor for the first two days of Watson lectures. While there were some technical challenges, once those were overcome I was able to cover a reasonable amount of material. The two students who were unable to log on the first day followed along with their peers. Many of the students expressed frustration with Watson and seemed less than enthusiastic about learning more. One student expressed that they felt Watson was "glitchy," while another suggested that the "possibilities were a bit overwhelming," in reference to the various visualization options. Despite the hiccups, the first day of class was productive and all of the students successfully presented graphs that they created using Watson on the

second day. On the second day, I struggled a great deal to introduce the more complex features of Watson to the class effectively. Despite fairly extensive prior experience with Watson, I have never found it to be very intuitive and with the added pressure of teaching a class I continually made minor mistakes that, in combination with some glitches in Watson, slowed the lecture and confused the class. Fortunately, Dr. Reed was more effective and demonstrating some of the more advanced Watson features and was able to complete the Watson lesson plan during the remaining two days of class. By the 3rd class with Watson all of the logon issues were resolved and students were keeping up with relatively fast-paced demonstrations. By the last day of Watson lecture, students were far more enthusiastic about Watson.

Students were very successful with their Watson projects. All three groups identified their question and used Watson to use it effectively. The first group went beyond what was demonstrated in class and effectively used a chart type that we had not covered. Initially, the group struggled a bit to explain what their findings meant, but eventually got their point across. They seemed to lack confidence and said "um" and other fillers quite a lot, but they persevered and were able to answer questions about their results. Their presentation of the graphs was sufficient. The second group successfully presented a chart and an interpretation that answered their research question. Two of the group members spoke clearly about the results and were animated and confident throughout the presentation. They were also quick to answer questions posed by peers and Dr. Reed. The third group member did not speak at all. Their presentation itself was well done; they figured out how to

properly export graphs from Watson to Powerpoint even though we had not covered this in class. Their presentation sparked excellent questions from their peers. The third group lacked confidence in their presentation, but they were able to answer Dr. Reeds questions and respond to suggestions. While there were some flaws in their visualizations, they effectively articulated their research questions and discussed how their results varied from their expectations. They were able to answer questions posed by Dr. Reed and they seemed to understand his suggestions for how to rearrange their graphs. One peer astutely pointed out that they could alter their research question slightly so as to yield more meaningful results in Watson.

Final Presentations

The final presentations took place during finals week and were assigned as independent presentations of the research papers. The first presenter demonstrated that she had effectively identified and researched her question. She included some good graphs, which she explained fairly effectively but was a bit unclear at times. The instructor suggested that she could have drawn out her explanation of her findings further and developed a theory behind what she found applying her knowledge as Religious Studies major. It was also noted that there was a slight problem with her dataset from GSS in that it attempted to compare "apples to oranges" across populations, which might have been avoided by comparing percentages as a opposed to totals. Overall, she fulfilled the requirements of the presentation by effectively using more than two of the applications we explored this

semester. She demonstrated probably the best use of Aportfolio out of the entire class, yet the presentation wasn't overwhelming. The organization of her Aportfolio page was functional but not hugely helpful as a reader, and her selection of background image—a cactus—while creative, didn't really add to the quality or professionalism of her presentation.

The second presenter effectively discussed her research question and results, but there was something wrong with the way her graph uploaded to her presentation. The presentation itself might have benefited from better design and more information on each slide. Despite some shortcomings in her presentation, she was still able to discuss her methods and it was evident that she was capable of using Google Sheets and GSS effectively.

The third and fourth presenters presented together because they misunderstood the instructions. Both students clearly knew a lot about the topic in general, but their research questions could have been articulated more clearly. Both students used a lot of filler language and spoke at length about the topic, providing details that were interesting but not directly relevant to their chosen dataset and research questions. While they did use GSS and Google Sheets, Dr. Reed suggested that they look at Google Trends to help identify connections within their datasets in ordered to quickly refine their research questions in time to correct their final papers before the deadline.

The fifth presenter had so much difficulty exporting her graphs properly that she included photos of the graphs taken with her smartphone. Despite this challenge, she defined her research question clearly and discussed her findings, and

the implications of those findings, proficiently. She used Google Ngrams and Trends effectively, but she had forgotten about some of the "multipliers" available in Ngrams that had the potential to improve the quality of her Ngrams graphs. The instructor suggested that she use GSS to further explore her research question.

The sixth presenter defined her research question very clearly from the beginning. She also described clearly how he used Watson and GSS to explore his question, and she presented her graphs and interpretations of those graphs clearly. She asked the instructor if it was necessary to cite Watson analytics, and the instructor explained to the class that only the data source—such as GSS—should be cited.

The seventh presenter claimed to have lost her presentation, but recreated her presentation to the best of her ability right before class. She struggled a great deal to discuss her research question, but she was successful in producing a GSS tabulation and some Google Trends results. Unfortunately, her GSS tabulation failed to address her hypothesis directly. The instructor recommended that her Google Trends results were a good start and he suggested some new searches that might better address her research question.

Overall, the instructor indicated he was pleased with the progress the students had made, stating they showed a "great deal of facility" with all the programs this semester. However, he did suggest that more time needed to be spent insuring people know how to properly saved and export data from these programs in order to create effective presentations. When the class was asked for feedback, one student stated that Watson was her favorite application of the semester and

several indicated they wished we could have spent more time on Watson. Another

student indicated she wished more time had been spent on Google Queries, to which

the instructor respond that one could spend the entire semester with Google

Queries. Two students stated they felt this class should be required for all majors,

because it developed skills that they, as Seniors, had not gained in any other class

during their time at Appalachian State.

ASSESMENT OF DIGITAL CURRICULUM

Aportfolio

While every student eventually learned to use Aportfolio, I don't believe the

use of Aportfolio ultimately resulted in better final presentations or superior

organization of their work from Fall 2017. The projects presented using Aportfolio

were not very visually appealing, and one student—despite her best efforts and the

assistance of peers and the instructor—was never able to upload her final paper to

Aportfolio. While many institutions of higher learning now promote the use of

portfolios, I've found no evidence that most employers or graduate schools require

them. There may be other benefits to building an online portfolio, but with

exception of fine arts students— who may be required to present a portfolio in

order to graduate, gain admission to a graduate program, or to be considered for a

job—the benefits of building an online portfolio for most other undergraduate

students aren't entirely clear. I'm sure that Aportfolio's glitches will be worked out

in time, and I do not wish to cast doubt on the potential for Aportfolio to be a

valuable learning tool. For some students, a required Aportfolio may be the only

time they take steps to preserve their work in one place; Something is certainly better than nothing. However, given the difficulty of implementation and time constraints, I wonder if teaching students to use Aportfolio in *Religion in the Digital Age* advances our stated purpose enough to justify the time cost.

Google Sheets

In the survey, over half of the students indicated they believed it was likely they would use Google Sheets in future academic or professional endeavors. There is evidence that understanding spreadsheet technology gives students a distinct advantage in the job market. In 2015 a group called Burning Glass Technologies, funded by Capital One, investigated the digital skills gap in the job market. The study found that over 82 percent of available "middle-skills" corporate jobs require the digital skills and identified spreadsheets as one of the most important technologies to know (Burning Glass Technologies 2015). Both my in-class observations and the survey indicate that all of the students developed their abilities to use Google Sheets

It is my opinion that teaching Google Sheets was worthwhile and advanced the goals the class. I also believe there was added value to teaching Google Sheets, as opposed to Microsoft Excel, because Google Sheets is part of Google's free, web-based software office suite that is growing in popularity and will likely be pervasive in time.

Google Ngrams & Google Trends

In the survey, students unanimously agreed that they would use both Google Ngrams and Google Trends again in the future. While I've found little evidence that knowledge of these specific applications is valued by universities or employers, there is no doubt research competency will be of value in any future endeavor. In future iterations of this class I'd recommend requiring students to apply more advanced features available in Ngrams to insure that they get the full value out of Ngrams and don't just skate by with simple phrase searches. Given that both programs required little time to teach, and the positive response from students, I believe that both are worthwhile tools to teach in future versions of this class.

GSS

According to the survey, the majority of students went from "unconfident" to "confident" in their abilities to use GSS over the course of the lectures. About half the students responded that they believed they might use GSS again in future endeavors, while about half the class indicated they didn't believe they would use GSS again. While I couldn't find any research to support the importance of understanding GSS Explorer in the job market, it is clear that research and analysis abilities are important marketable skills. While there are other databases or data collections that might be studied in this class, the GSS Explorer is especially appropriate because it provides a wealth of sociological data, especially pertaining to demographics and religion.

Watson

Watson Analytics was popular among students, as evident in the exit survey. While Watson has failed to meet its target numbers by all estimates, it is a unique program with potential for growth. Watson in some sense is a victim of expectations. IBM set out to do something entirely novel when they developed Watson Analytics and, despite what might be a dismal bottom line in the short run, IBM achieved that goal. Watson and similar technologies may not become ubiquitous in public research institutions or the private sector for many years, but the potential is still there. Regardless of if and when Watson Analytics sees wider use, students were positive about their experience with Watson and I observed students develop their abilities to ask and answer research questions through the process of learning to use Watson. Whether or not students are asked to use Watson in their future endeavors may not be as important as the confidence and skills they gained through learning it.

REFLECTION ON CURRICULUM AND PEDAGOGY

Efficacy of Teaching Tools

There may be something to learn by discerning the strengths and weaknesses of each category of teaching method. In the surveys, where students were asked to rank the importance of teaching methods to their learning processes, students agreed nearly unanimously that in-class demonstrations were the most important teaching method to their learning process. The one exception to this rule

was found in the Google Sheets survey; one student indicated that peers, rather than in-class demonstrations, were the most important part of their learning process.

The results of the surveys aligned with my in-class observations. Throughout the semester, I noted that students were consistently focused during in-class demonstrations. In contrast, during lectures and discussions, I regularly observed a student or two whose attention had become divided. It also noted my doubts that all of the students had completed the assigned readings due to a low volume of comments tying directly to the text during class discussions.

Once in class-demonstrations began, I noted fewer students distracted by other tasks on their desktops and more relevant commentary. Digital distractions are boundless among today's students, and it has been proposed that incorporating more technologies into classes may be one way to curb the impulse to "multitask" (Seemiller 2017). I believe the effective use of in-class demonstrations of digital technologies in this class affirms that theory that more technology can be used to counter those distractions and to keep busy minds engaged. The effect of the in-class demonstrations was not instantaneous. In the beginning, I noted students to be a bit slow to get started as instructed. While part of this was lack of familiarity with downloading files and using Google programs, I also noticed a few students looking at unrelated emails or social media accounts at the beginning of class. During the first couple weeks of Google Sheets lessons, I noted students relying on other students to help them "catch up" when they became distracted for a short time, but with time I observed this less regularly. By the time I was teaching Watson Analytics in the last few weeks of class, these sorts of distractions seemed to be non-existent.

Further, students indicated that "peers" were only of moderate importance in the Watson survey, and they lent even less importance to "peers" in the final exit survey. I hypothesize that, in class of this nature, peer support is most important to students who are lacking in skills, or whose lack of focus sets them back, and that peers become increasingly less important as students improve their ability to keep up in class.

After in-class demonstrations, I propose that projects were the second most valuable teaching method in this class. With "individual projects" and "group projects" averaged, "projects" overall receive a similar average rank as "peers" across all four surveys; I think this understates the value of projects to the students' learning processes. In my observations, I noted a significant increase in student participation in the class prior to project deadlines. Whereas comments and questions before and after ungraded assignment were due did not provide me with much confidence that students were completing said comments, the volume and quality of comments and questions noted prior to presentation days demonstrated to me that students were working with the programs and building their skills. In addition to helping to hold students accountable for their own learning, the projects provided the instructor with an opportunity to provide feedback to individual students. It also allowed the instructor to determine where individual students stood and to identify individual challenges that were impossible to discern during in-class lectures and demonstrations.

In future versions of this class, I would propose that the same teaching methods be utilized to a similar extent, but that ungraded assignments be replaced

with more mandatory assignments. I'm not sure that adding graded assignments early in the learning process would be beneficial to students. Instead, I would propose that brief response papers, graded only for completion, might be a good way to ensure students less inclined to speak during class are completing, and comprehending, reading assignments. I also see the value of a rubric of sorts for projects. Again, I'm not sure that providing a grade is the best way to build students' confidence, but it may be helpful to assign a completion grade for each project that is dependent on whether or not a student attempted each of a set of tasks. I believe this kind of completion-grade rubric would reward students who take a risk and attempt the more advanced elements of the analytic software we explored, while also encouraging students who might otherwise attempt only the bare minimum.

Overall Success in Achieving Stated Goals

   In reflecting on the efficacy of *Religion in the Digital* as a course in the digital humanities, it is necessary to step back and reflect again on why we focused on teaching quantitative analysis skills and determine if we met our stated purpose. Teaching students how to utilize tools of quantitative data analysis *does* necessarily mean spending less time reading, writing, and interpreting unclear, incomplete, and subjective content. However, I believe this class demonstrated that a balance can be struck such that humanities students can be "makers" of novel digital humanities content without sacrificing the heart of what the humanities have to offer. I argue that this was achieved in *Religion in the Digital Age* by focusing on small, student-led

projects that gave each student the opportunity to apply the digital tools taught in class while also reading and writing on their selected religious studies topics.

Efficacy of Methods Used to Assess Class

In-Class Observations

Overall, I believe that observing the class was an effective way to study student abilities and the success of teaching methods. While the variability in teaching methods across classes presented a challenge to the process of collecting consistent observations that might serve in the comparison of the value of the materials covered and efficacy of teaching methods, by adhering to a general method (Appendix A) a meaningful set of qualitative data was gathered. In combination with the anonymous Qualtrics surveys, the observations provided rich insights into the efficacy of teaching methods and the experience of each student across the semester.

Qualtrics

Qualtrics, while useful, was problematic in a couple of ways. My greatest concern about Qualtrics is its apparent unreliability. According to Qualtrics, in my final survey there were 12 respondents in total, yet none of the questions have more than seven responses. Further, some questions have less than seven responses, despite the fact that I set all the questions to require a complete response before they could be successfully submitted.

The second problem might be classified as a "user error." During the last week of class one or two students appear to have taken the surveys more than once. In retrospect, I was at fault because I repeatedly reminded students that I was still missing responses, without also reminding students to be certain not to respond more than once. I considered using a "personal link," rather than a reusable one, to prevent this problem, but I ultimately decided not to out of concern for preserving anonymity. I would suggest that, in the future, students complete surveys in class so as to prevent confusion while also preserving anonymity.

CONCLUSION

Religion in the Digital Age was designed to address the need for students of Religious Studies to navigate an increasingly digital academic world and to address a demand among humanities students to study the tools of data analysis that are increasingly accessible and diverse in their potential applications. I will now draw together several of the issues I have raised in the course of this paper.

Despite considerable evidence that the "unemployable" or "doomed to poverty" humanities major is no more than a pervasive myth (AAC&U 2014), concerns about the value of a humanities education nonetheless pose a problem for Religious Studies departments in recruiting students for their programs. In the process of recruiting religious studies majors, minors, and enrolling students in REL class, efforts must be made to dispel this myth. In addition, the implementation of classes like Religion in the Digital that incorporates digital humanities can help to

overcome this perceptual problem by giving them skills that they associate with competitiveness in an increasingly digital world.

Digital humanities research has been proposed as a response to waning interest in the humanities, but it has been argued often that DH risks displacing the humanities rather than redeeming them. To avoid this problem, a successful Digital Humanities class must offer development of students' technical skills without abandoning the human context of humanities. A Religious Studies course in digital humanities is only such if the study of digital technologies facilitates the study of religion. *Religion in the Digital Age* age achieved these goals by embracing a curriculum that struck a balance between project- and lab-based learning and conventional reading and writing driven humanities learning.

An ability to navigate data is an increasingly critical skills across professional and academic fields. All undergraduates, to be successful students and graduates regardless of field, must have an understanding of and skills in data. In order to remain a vibrant part of the educational process, Humanities programs cannot shirk from participating in this data boom. This does not mean that the conventional humanities education rooted in reading and writing need be usurped by data analysis.

Classes like *Religion in the Digital Age* strive to embrace digital technologies within abandoning the heart of humanities education. I believe *Religion in the Digital Age* achieved this goal by striking a balance between the two sides of the humanities: one that embraces new technologies and demands to incorporate them into humanities curriculum and another that preserves roots in a Petrarchan

humanist framework based on a curriculum focused on reading reading and writing. Future digital humanities Religious Studies courses might improve upon this balance by focusing on technologies that offer maximum utility in Religious Studies research in proportion to the time required to learn those technologies. Some technologies more readily offered a balance. Watson Analytics was embraced readily by students and was used with great efficacy by students in their final projects. Aportfolio, on the other hand, requires a considerable amount of in-class and out-of-class work, yet provided unclear benefits to students in their research. A course that teaches humanities students to use a digital database to facilitate their humanities research is clearly a humanities course.

On the other hand, a DH course that primarily involves teaches students the basics of Javascript may be effective, but is it really a humanities course? Like the Humanities themselves, the successful application of digital humanities curriculum cannot rely upon datasets agreeable to objective analysis. It is up to the individuals implementing digital humanities courses, and those engaged in digital humanities research, to discuss and debate the goals of the digital humanities even if no definitive consensus is reached.

In this paper I have examined the advantages and pitfalls of Digital Humanities and their potential place in the Religious Studies curriculum. While a class like *Religion in the Digital Age* may not pose a complete solution to the problem the Humanities face in an increasingly digitized and market-driven academic and professional worlds, it does offer the potential for a more integrated, timely, a conscientious approach to teaching Religious Studies and Humanities research.

From the integration of digital technologies into religious studies curriculums we can learn more about the evolving place and importance of the humanities in our changing world. Many questions remain to be answers, but unanswered questions, and questions yet to be effectively framed, are exactly where the humanities excels. There is no question that embracing, rather than neglecting, the organic intersection of religion, humanities, and data will lead to students who are better prepare to answer and ask the right religious studies questions and will generate more sophisticated, and therefore employable, graduates.

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APPENDIX A

Observation Form

Date:

Number of student in attendance:

- **How attentive are students today?**
  (Did students arrive on time? Were they engaged from the beginning? Did we maintain their attention throughout the lesson?)

- **What was the quality of participation today?**
  (Did students ask and answer questions? Did they comment? Did they help peers? Did their questions and comments suggest they are completing homework assignments and understanding the material? Did students keep up with the pace of instruction? Did some students fall behind?)

- **If there was a presentation, takes notes on each of the groups/students:**
  (Did they seem prepared? Did they fulfill the assignment? Did each group member participate and to what degree? How well did they understand their research question, their methods, and the tool(s) they used to conduct their research? Did they articulate their research question and findings well? What were their strengths and weaknesses?)

- **Professor feedback:**
  (How did the professor respond to student questions and comments? Did his comments suggest students were/were not grasping the material as expected? What feedback did he provide to students on projects and presentations? Did students seem to understand his feedback?)

- **Were there any standout student comments or questions?**
  (Include any specific comments or questions that illustrated student understanding/lack thereof the material, as well as student opinions of materials and learning approach.)