

BARRIERS TO HUMANITIES AND SOCIAL SCIENCE FACULTY SUPPORTING RESPONSIBLE COMPUTING IN COMPUTING COURSES

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ABSTRACT

In this paper we analyze challenges associated with infusing responsible computing discussions into humanities and social science instruction and programmatic considerations. We examine the level of leadership and intentionality necessary to support these discussions at public teaching universities in the United States. We interviewed department chairs in humanities and social science departments and surveyed faculty in those departments. Our inquiry focused on the role that computing and collaboration play in the pedagogy, curriculum, and research within departments. We asked about perceived barriers to collaboration and incorporating computing concerns into the curriculum and the role that computing and collaboration play in the tenure and promotion process. Three themes emerged from our qualitative review of the responses: digital natives and digital immigrants, crossing the divide, and tension. We conclude that the faculty participants are more focused on ethical issues surrounding delivery of courses rather than the broader issues surrounding computing.

INTRODUCTION

Discussions and scholarship regarding responsible computing and cross-disciplinary interests in associated issues of social responsibility always occur in particular timeframes and contexts. Recent global attention on issues such as privacy and facial recognition have thrown a spotlight on this discussion and affected the focus, both for those directly concerned with computing and those that find themselves directly impacted by university policy and practice surrounding computing. During the last year we have seen discussions surrounding online delivery explode as the pandemic took hold. Under COVID-19 conditions universities across in the United State reduced or eliminated face-to-face instruction and began a dramatic push to move courses to remote delivery. While there have been extensive discussions of the challenges associated with remote delivery within universities and in the press, universities, interested in keeping the doors open, have primarily focused on delivery rather than on programmatic interests and overall academic planning. Certainly, within this new, challenging environment, the emphasis has more frequently been on “how to delivery remotely” rather than how to address the structure of social issues associated with the development and use of computing technologies. The very nature of the expansion of the use of remote delivery brings into even sharper focus the issue of responsible computing, what it means, and how and when it will be embraced.

Exploring the extent to which humanities and social science faculty infuse responsible computing into instruction and program curriculum discussions is, therefore, a timely conversation. A key issue here is whether and how this incorporation has occurred, and whether it has involved cross disciplinary collaboration that highlights central issues. This research project examines the understanding of responsible computing by faculty in humanities and social science disciplines at public teaching-oriented universities in the United States and seeks to provide greater insight into the incorporation into the curriculum of responsible computing topics and the feasibility of enhancing ethical and social

considerations in computing. To understand these developments, we interviewed department chairs and surveyed faculty (pre-pandemic) regarding existing practices and interests. The results point to the challenge of understanding and interpreting responsible computing, the capacities of faculty and programs, and the attendant policies of universities.

LITERATURE REVIEW

The increased challenges of university program delivery under COVID are built upon the existing neoliberal pressures that universities have been facing since the late 1970s and the expectation that faculty will work with university administrations to maximize productivity. Faculty and programs functioning under neoliberalism experience a marked acceleration of expected efficiency while encountering a substantial increase in expected documentation of success. So, there is a new and ever-expanding focus on control and oversight (e.g., course assessments, program reviews, faculty reviews, course capacities) even as much within university systems seems to be out of control (e.g., costs, student enrollments, administrative oversight) (Giddens, 1991: 144-145; Rustin, 2016; Buroway, 2012; Collini, 2012).

Neoliberal conceptualizations have permeated all levels of university life and the university's relationship with the state. Universities, especially public universities, are now seen as profit centers, and this materializes through expectations that research will be funded by external entities, teaching will be conducted by those who are less expensive to employ, students will cover more costs, and more elements of course delivery will be automated (Feenberg 2017, Guerlac 2011). To complement these shifts in expectation, more bureaucratic systems are put in place to guide the institutions and to ensure accountability in a style reminiscent of corporate practices (Olssen and Peters 2005). The neoliberal framework has created what Buroway (2012: 139-140) calls a budgetary, regulatory, and legitimation crisis for higher education institutions, laying the groundwork for a spiral in which universities seek greater efficiency and more external forms of support. When that support comes from the business sector, the institution is commercialized in ways that erode public trust. This process in turn creates greater "public" calls for accountability from universities resulting in more bureaucratization to support auditing (Olssen and Peters 2005). This process tips the balance from a focus on instruction and research toward oversight. These processes directly impact the extent to which cross-disciplinary instruction occurs and when and how faculty expand their scholarship and instruction into other areas. In the end, significant questions remain about how knowledge is being produced and by whom.

DISCIPLINARY DISTINCTIONS IN CONTEXT

Because of neoliberal practices that encourage increasing efficiency, enhanced reliance on technology, and a reduction in cost, many universities have encouraged a shift to larger class sizes, more distance delivery (e.g., asynchronous online instruction, MOOCs, and now synchronous video), and the employment of more part-time or temporary instructors (Rhoads 2015, Guerlac 2011). The tension of this reality has impacted both those faculty already focused on computing (e.g., computer scientists) as well as those outside of computing, specifically humanities and social science faculty. Certainly, many of those in the humanities and social sciences have been exploring, through various cross-disciplinary interests, multiple facets of what digital technologies have meant for their disciplines and for the social world.

Yet challenges occur on several levels: the interpretive, the disciplinary, and the practical – implementation. At the interpretive level, the question is really whether research questions developed by humanities and social science faculty grasp the structural issues implied within the technologies

and ethics of computing. What core questions are being asked, and how is curriculum designed around those questions? Does research and teaching probe basic values and world views that inform the developments within computing or do they primarily question the resultant use and the users of technology? Certainly, these key questions address what is researched and the substance of instruction, but they also relate to the overall patterns of delivery and how to best deliver to contemporary students. Faculty are pushed to recognize the special needs of Millennial students and are encouraged to reach them in a manner that respects the fact that they are “digital natives” cognizant of what best prepares them for involvement in a digital world. These are complicated processes that are not necessarily well aligned within universities (Szrot 2015, Graff 2015/2016, Prensky 2001/2005).

This is especially the case since under neoliberalism the technical “concrete problem” has framed the intellectual space, establishing a hierarchy within the academy that privileges the technical over the human. Hence, a conversation about digital natives (i.e., students born after 1980) and digital immigrants (i.e., those born before 1980 and most faculty) is not simply one of who has adapted to what course delivery techniques, but it also encompasses a broader discussion of the structure of the university, the understandings associated with its disciplinary culture, the expectations associated with knowledge production, and who gets to deliver on what, when, and where (Prensky 2001/2005, Szrot 2015 Graff 2015, Mannheim 1936).

Prensky’s (2001/2005) use of the terms digital native and digital immigrant suggests that digital immigrants, in this case the faculty outside computer science, do not typically have effective language, skills, or techniques to instruct today’s students who are perceived as digital natives. As such, students are presumed to have a high level of skill using technology, to be naturally adept at synthesizing material, and to be competent at rapid learning. There is literature that raises significant questions about the viability of this understanding (Margaryan, et al. 2011, Bennett et al. 2008, Waycott et al 2010, Gallardo-Echenique et al. 2015, Šorgo et al. 2017). Yet the continuing discussion among administrators and faculty of these perceptions and the technological determinism that lies at its base affects understandings of how to invest university funds and how to structure curriculum and professional development (Selwyn 2012). They also undermine substantive conversations about the ethical and social issues of technology and computing and move the discussion into a practical delivery analysis that leaves many aspects of the impact of computing unexplored while reemphasizing elements of training for more efficient delivery.

As the scholarly conversation about digital native and digital immigrant moves directly to issues of training for faculty it reifies a divide along the lines of technical delivery. Leaving aside substantive issues associated with knowledge production and development, universities focus on how to best assist employees in their adaptation to enhanced digital experiences. Data are often gathered from faculty to determine interest and ability, and once an organization has these data, they can use information about what creates meaning for an employee to better train individuals on new computing technologies (Breen 2018, Mansbach and Austin 2018). This is a fairly common practice, and as Kesharwani (2020:14) indicates, employers who explore the characteristics of technology users in this manner can then create training programs designed around those characteristics and promote them as enhancing “self-efficacy.” The process of labelling faculty as digital immigrants and creating trainings to enhance connections to identified digital natives highlights how data and interpretations of that data are used to broadly label and affect a particular end—training—rather than establish a structural review (Selwyn 2012). In other words, the push is for adaptation without always asking to what end.

Faculty in the humanities and social sciences have varied behavioral preferences, professional understandings, and social advantage that inform their experience and interest (Kesharwani 2020,

Sharafi et al. 2006, Mansbach and Austin 2018). If being a digital native means immediate, uncritical acceptance of technology use, then many faculty in the humanities and social sciences find themselves labelled as outsiders when they question remote delivery and the value of engaging students through digital means. Yet many faculty in these disciplines either are more proficient than those they are instructing, or they seek to be (Waycott et al. 2010). The digital native and immigrant conversation while significant, misses the deeper question of what it means to be a “native” and moves quickly to an attempt to address how to effectively train digital immigrants for quicker assimilation (Šorgo et al. 2017, Breen 2018, Mansbach and Austin 2018). Certainly, some faculty in the humanities have explored how best to weave together an emphasis on instruction with pedagogy that teaches students how to be proficient in digital environments (Guerlac 2011). So, focusing on faculty as digital immigrants does not adequately reflect the complex capacities of these faculty. Examining these ideas with an ethnic analysis lens (Gordon 1964) highlights the problematic nature of this conversation and opens the door to rethinking the level at which involvement and collaboration across disciplines might be leveraged.

If, for a moment, we accept the digital native and digital immigrant classification and the essentialist and assimilationist understandings that it implies, we can then note that we should be seeking to better address the structural, cultural, and interpersonal realities that align with assimilationist interpretations (Gordon 1964). To assume an essentialist viewpoint of digital native not only misses the complex structural interplay involved as people engage systems and each other, but it negates the variability of ability, interpretation, and levels of understanding within particular environments. In addition, the use of the terminology refocuses attention in a manner that suggests technological determinism and undermines deeper cross-conversation among disciplines (Selwyn 2012). This tension was evidenced by participants in our study.

The quick move to remote delivery at the onset of the pandemic brought the digital divide into sharp relief, undermining the essentialist understanding of the digital native/immigrant taxonomy. The pandemic also exacerbated tensions, both ideological and practical, surrounding the incorporation and use of various forms of technology. When faculty have a heightened concern about the digital divide and the impact that it has on outcomes for less privileged and basic-digital learners, broader conversations regarding collaboration to enhance ethical and social understandings related to computing are not well developed (Šorgo et al. 2017). Our research looks at where and when cross conversations occur, what sidelines those conversations, and how deeper and more comprehensive efforts toward cross-disciplinary collaborations might infuse greater awareness of the central ethical and social concerns associated with our digital experiences.

METHOD

Information from humanities and social science faculty on responsible computing was collected as part of a larger study designed to explore how and when faculty in computer science, humanities and social science disciplines engage in research and instruction on ethics and social issues related to computing. A mixed method design was used. It began with identifying and selecting state, public universities that had humanities/social science and computer science programs or departments. Each had between 3 and 65 faculty. The two-phased approach is based in critical methodology and designed to both interpret and engage (Babbie, 2016). Institutional Review Board approval was received for all instruments and processes used in this research.

Phase one of the study was a qualitative interview with identified chairs. Qualitative interviews were conducted via an audio-only Zoom meeting, and informed consent and debriefing documents were provided to all interviewees as part of the process. Questions were created to identify when and how

computing concerns were incorporated into the humanities and social science curriculum. Separate questions were asked of the computer science faculty to discern whether ethnics and social responsibility is being infused into the computer science curriculum. Our findings from the computer science interviews and surveys are discussed in (Greer & Wolf, 2020). The overall intent was to examine disciplinary distinctions so that a better understanding of each discipline's approach will inform cross-collaborative instruction and research. To ascertain the extent to which collaboration occurs or could occur, we asked about levels of collaboration related to instruction and scholarship, and the extent to which responsible computing was aligned with strategic or master academic planning at their institution. In all interviews four basic questions were asked, with additional probes used to ensure clarity.

Phase two of the study was a survey of faculty within the departments where department chairs specified interest. A short survey instrument was distributed to all faculty in those departments. Seventeen survey questions were created and a Qualtrics survey instrument was used to distribute the questions to humanities/social science faculty. (Questions used are available upon request.) In addition to questions related to how important responsible computing is to instruction and research in the humanities and social sciences, we asked the extent to which responsible computing occurred across the levels of their discipline and the degree to which they were satisfied with their knowledge related to responsible computing. There were also basic demographic questions.

We analyzed the chair interview transcripts and the survey results from the faculty. Of the 78 surveys distributed, 25 have been completed. The analysis focused on a qualitative interpretation of the data collected. Qualitative analyses provided an opportunity for deeper interpretation of social worlds and the impact of particular interactions (Berg 2009). Interview transcripts were coded using an open and focused coding process and responses were then examined in light of survey results (Berg 2009, Katz 1983). Themes of digital native/digital immigrant, crossing the divide, and tension emerged from a review of the coded transcripts. Descriptive information from the surveys will be used to support and clarify data found within the interviews.

ANALYSIS

Digital Immigrant, Digital Native

Our discussions with department chairs highlighted the challenges associated with cultural divisions of the digital world. One chair noted a faculty member who "was giving the students a lot of time to complete the quiz, and so the students constructed a private Facebook group where they were sharing the answers to the quiz." C1 Addressing these sorts of cultural issues, they noted that faculty in their areas were . . . "slow on the uptake. I don't know if it's the generational gap. . ." C1, and that, "faculty knowledge about that, that is probably one of the biggest barriers. Particularly since we've hired mostly faculty members who do qualitative research." C2 These comments point to the sense of digital native, digital immigrant present among faculty in the humanities and social science disciplines and the perceived difficulty of bringing everyone to an awareness that digital communication and computing is, while daunting, a reality. Building on interpretations by Prensky (2001/2005) we see a sense of the divide and an acceptance of that gap as a "barrier." In addition, the assertion that the gap may also be related to a distinction in research type (i.e., qualitative versus quantitative) suggests that digital understandings primarily align with computing technologies and quantitative approaches while qualitative research is divorced from digital understandings and use. We see here a labelling of faculty, an acceptance of technological determinism, and a reification of ideological interpretations and practices associated with this understanding.

The concepts of digital native and digital immigrants were used by most interviewees, and frequently the discussion moved between a discussion of distinctions based on age, as noted above, to an assertion of progress. Age was cited both through reference to a “new age revolution” and to doctoral experiences that did not contain digital approaches as part of the education to specialization. At points it was expressed as it is “... not a person’s specialty.” However, this was typically in reference to a subfield in a particular discipline, for example, when a faculty member’s focus was not on digital humanities or digital studies. Often these subfields were directly associated with better understandings of computing and greater awareness of data literacy. Yet there was no direct evidence that the subfield interpretations involved significant understandings of the ethical issues associated with computing, but rather that the ability to engage in substantive use of information technologies and data was enhanced.

The sense of an assimilationist agenda within this conversation is evident. As one department chair stated, “Look, if you want to teach in the summer, you better learn to love teaching online and learn how to do it because that’s the only way these courses are going to make.” C2 This speaks to adaptations faculty must make as part of the expectations of incorporation into the next iteration of university life.

“I became chair, this is my sixth year, and when I became chair we offered virtually no online courses ... but there was a push from the university to move toward that ... it took off in 14, 15 ... We had a summer online program ... watched it go from entirely face-to-face to practically, entirely online.” C2

“... there’s a good bit of talk, we have a brand new president at the university, about incorporating different aspects of computing into our classes at a variety of levels and a variety of classes, ...” C4

“Some people have thought a good deal about it, some people not much at all. So trying to get it to find its way into the curriculum in some formal way just simply involves a good bit of work.” C4

“... our junior faculty has to be thinking about these things because as soon as they come in they have to go through some of the trainings which involve working with Canvas, working with online ... And all of the rest of us, there’s less of an onus on us.” C5

“And I mean they [students] really think that it’s a part of our job now to be on Canvas, which is always kind of surprising to me. But in any case, that’s the expectation.” C5

“... the faculty Senate group that’s grown up in the past few years I think is partly meaning to respond to what that office is doing ... the office of teaching and learning is run by faculty, but it’s also kind of just like administrative initiative ...” C5

“And so, the way that online teaching is always pitched or hybrid teaching is always pitched by the administration is that, it’s more inclusive the idea is ... that students surveys say, or suggest that students who have mixed schedule, meaning some face-to-face classes and some either hybrid or online that they’re much more likely to be retained ...” C5

Paralleling, in interesting ways, the language of cultural and structural incorporation, we can see here how it is not only the presence of a new technology that informs relationships and university policy and practice, but the sense of the interactive aspects of that environment and the expectations of normalization and conformity that follow.

Milton Gordon (1964), in his seminal work on assimilation in American life, points to the cultural, structural, and interpersonal patterns that accompany the arrival and entrance of new migrants into the society. In a similar vein we see, contained within the quotes above, a cultural, structural, and relational understanding. Culturally, there is an expectation that faculty will achieve various levels of awareness and acceptance, certainly at the level of incorporating various forms of digital delivery into classes. Managing discussion post options or online chats in learning management systems, speaking the language of what it means to connect with students, and proficiency in the pedagogical approaches of that connection are all expected. However, these quotes go farther and suggest that in addition to following the current fad of presentation and performance, there is an expectation of shifting values and accepting the face-level values and associated ethics embedded in computing technology and remote delivery. Structurally, the incorporation of remote delivery suggests an embedding of the technology and the faculty person in the institution in a manner that redevelops the role of faculty and the institutional arrangements while it redirects the institution in terms of its strategic plan, university initiatives, and finances. Interpersonally, the normalization and conformity carries with it an expectation of faculty linking with staff in technology services who support platform delivery mechanisms, with students to help them, and in an interdisciplinary manner with other faculty who are “better equipped” for remote delivery. In all of this, however, there is often an absence of discussion about computing, ethics, substantive realities around relationship development, and driving neoliberal interests of individualism and profit.

Yet as department chairs discussed engagement with digital technologies they pointed to remote delivery, adherence to human subjects reviews, and use of various forms of software to engage in data analysis. As one department chair put it, the faculty are:

“Trying to even teach our students how to use computers appropriately for research. I think that’s a big task that we have right now ... the two methods courses, they have had to evolve to deal with technological changes or how to find resources or how to find sources, and also data analysis.” C3

In addition, the descriptive statistics from the surveys show that many faculty in the humanities and social sciences see responsible computing as important to instruction and to research. Of the 20 responses to the survey question on this topic, 85% saw responsible computing as important or somewhat important to their instruction and 65% saw responsible computing as important or somewhat important to their research. Irrespective of their initial training or their particular methodological approach, the merits of including social issues and ethics associated with computing were seen as significant to their work. The need to cross the divide was evident from their responses, yet there are questions of how and when to cross the divide and what mechanisms allow the bridging to occur.

Crossing the Divide

Moving beyond disciplinary specialization requires crossing into areas of expertise that have often gone unexplored, or which represent a sense of risk, risk in terms of whether it is possible to serve as expert, risk of encroaching on another’s area of expertise, and risk of time spent without reward. For faculty in the humanities and social sciences there are additional risks to perception and to status. Having their abilities and understandings exposed to the review of those in technology areas whose

territory they are now exploring, these faculty risk being accused of encroachment into areas considered the territory of other experts and risk undermining their own discipline, delivery, and programming through a perception of having accepted the technological determinism of the digital without reciprocation. Finally for these faculty, there is a question of whether I, as a faculty person from a discipline outside computing, receive status and recognition for responsible computing related work that goes beyond my field. Examining responses from department chairs, it is in understandings of interdisciplinarity and collaboration that we see various elements of connectivity and related challenges. Key here are what level of connection is possible, among whom, for what purpose, and if in scholarship, what type. As department chairs pointed out faculty in the humanities and the social sciences engage in instruction and research on various aspects of ethics and social issues associated with computing, yet the chairs' commentary shows that the engagement with these topics is not consistent across all the faculty and varies based on areas of interest and perceived forms of support.

"... I mean I can think of one person who is working on research or scholarship that has to do with computing issues and thinking through issues of AI and how that deals with humanism and post humanism ... I can think of another philosopher in my department who's working on games and gaming ... though he's really more interested in aesthetics than in the technology aspect of games per se ..." C5

"So, some will pick up digital ethics, or some toward things related to computing ... I couldn't say I could give you a good number." C4

"I have probably two faculty members that look into ... well more broadly speaking kind of more social media with computing and trying to understand big data." C3

These quotes demonstrate that faculty in the humanities and social sciences are working with or toward responsible computing issues yet trying to retain central connections with their own disciplinary approaches and understandings. Having a foot in both worlds is a challenging endeavor, and attempting to identify what it means to incorporate, beyond delivery techniques, topics associated with responsible computing in the classroom means deep assessment of what must be delivered, when, and how.

Considering what it means to systematically engage in curricular change around topics of computing ethics and social responsibility, one department chair noted:

"I think we're slowly starting to think about that ... I don't know if it's just my faculty or not, but we're kind of slow on the uptake." C3

And another indicated:

"Some people have thought a good deal about it, some people not much at all. So trying to get it to find its way into the curriculum in some formal way just simply involves a good bit of work ... it would probably be a kind of sub-specialty that you were picking up. There isn't anybody working directly in it." C4

At points, as the department chairs discussed potential curricular changes that would cross into the areas of responsible computing, they focused in on one course, often a general education course on ethics or values, and how that could be changed to create deeper student awareness. One chair stated:

“... we thought about ... dividing the class up, not necessarily by philosophers, but by key life issues ... and I think one of the most provocative for students would be computing and everything that’s involved with the technological age in which we live ... a big shift from the way the class has often been taught ...” C5

Yet, it is not that faculty in these disciplinary areas are largely avoiding the issue. Faculty survey responses on the question of delivery of responsible computing across the levels of instruction shows that with third-year students faculty engage to a great or some extent 70% of the time. This shows important cross-over of interest and approach. During the first and second year the percentage of time drops to approximately 58%, and in the fourth year it once again declines. These percentages demonstrate not only the sense that engaging students on these topics is significant, but the perceived placement of where it should be addressed across the degree process.

Many faculty have participated in joint scholarship with faculty in other disciplines and have explored topics with and for students that take them beyond their disciplinary home. However, finding cross-disciplinary or interdisciplinary scholarship is much more frequent than doing so with instruction. This is often due to the administrative barriers that exist within university settings. Identifying ways to give credit to two instructors for team teaching or structuring FTE in a manner that encourages intermittent sharing of knowledge from another discipline seems out of reach for compensation and accounting purposes. This leaves faculty with little recourse, even as they seek creative options for interdisciplinary delivery.

Tensions

While some faculty in the humanities and social sciences are already crossing the divide and others are exploring how to make their way into responsible computing analyses and instruction, tensions around what it means to move beyond disciplinary boundaries are persistent. Some of the tensions exemplify the extent to which administrators, conscious of neoliberal goals and efficiency needs, are pushing for greater online delivery. Other tensions surround the extent to which the digital native/digital immigrant imagery has legitimacy, or whether the imagery hides a much more complex reality in which Millennial students are ill-prepared, beyond basic application skills, to understand data and to engage in critical analyses. Finally, the push to remote learning through various educational platforms siphons attention away from more substantive discussions of university purpose, intellectual development, and collaborative options that address ethical issues of computing and that allow faculty to envision the future.

As one department chair indicated, administrative initiatives for using digital platforms are often supported by segments of faculty leadership raising challenges across faculty contingents:

“... it’s more coming from the faculty in that faculty Senate group where you have the rest of us saying, whoa, are there some things we should be considering in terms of how instruction is being handled online, how the materials are conveyed and what are the big questions that

students should be thinking about [it] in terms of their intellectual labor and how that interacts with the digital platforms and the digital. ... It's a culture that we all live in." C5

"We've got some older faculty, they aren't interested in that kind of thing." C3

Even for departments making the move online

"there have been questions about what about the integrity of the tests. How do I know that my test is secure? How do I know that students aren't cheating?" C2

Yet,

"maybe there are some best practices that can be involved in terms of encouraging students to be more ethical and responsible with the use of the internet, but instructor best practice as well in terms of trying to ensure academic integrity and also maybe even worrying about issues of privacy and surveillance." C1

The focus on efficiencies also undermines attempts at collaborative instruction efforts. While some faculty are interested, they find it difficult to identify mechanisms to make it work and maintain the expected efficiencies and their programs. As one department chair noted,

"... collaboration in the classroom can look more expensive in terms of FTE to administrators and therefore it makes it, for instance, more difficult for me to sometimes want to support it even though ideologically I want to support it ... it makes me nervous that then if I'm asking, for instance for another faculty line that the administration would say something like, well you have people co-teaching classes, so why wouldn't you just have them teach their own classes and then you wouldn't need another faculty member." C5

They went on to note how IT infrastructure can discourage collaboration,

"... the current software we use makes it difficult to do [cross lists]. And so, they you have software driving curriculum, which is of course something we're always pushing back against." C5

The tensions are also evident as faculty attempt to identify how best to instruct Millennial and Generation Z students and whether or when these needs generate cross-disciplinary interests in responsible computing:

"We find that Millennials and as well as the newest generation coming in, Generation Z, hears about technology, have this supercomputer in their hand, but they don't know how to use it

appropriately when it comes to collecting data or collecting research or even using it to find out information.” C3

The challenges of working with administrative initiatives to move to enhanced remote delivery, electronic portfolios, or other digital assessment tools create tension within and among faculty. Some faculty who are focused on reaching students based on information about their interests and engaging them in the new digital age embrace various digital forms of communication and discussion. Others, worried about substantive questions of student literacy and critical ability, ethical issues associated with computing, or their own abilities related to the use of digital tools raise warning flags and resist. Yet the online instruction platforms and recent experiences during the COVID-19 pandemic are forcing faculty to identify how to move and then move forward. This is supported by faculty responses to the survey question regarding what curricular changes could be made to incorporate computer ethics and social responsibility:

“All of my courses include this content.”

“I am working now to integrate discussion of research methods and sources (research and library skills) with broader discussion of computer information, web searching, and engagement.”

As department chairs consider attempts to shift to enhanced engagement on these topics, they demonstrated various levels of awareness, engagement, and tension:

“You mean in terms of like having instructors incorporated into any number of classes or having a specific class in the curriculum? I haven’t really thought about that before to be honest, but as I’ve referenced before we’re all becoming more and more dependent on these things and more and more instructors in my department are using online platforms like Blackboard. ... And it’s occurring to me now that I’m speaking to you that perhaps ... some sort of statement or discussion or lecture or something having to do with issues pertaining to the ethics and social responsibility surrounding use of that technology.” C1

“I don’t think we’ve had a lot of discussion about it other than policy set down by the university as to what we should do with our computers and what we shouldn’t.” C3

“... and one of the things is getting a digital humanities degree ... trying to craft for students that, despite the fact that what we talk about most in the humanities or the arts as the objects that human beings have created, that are expressive of human culture, that certainly technologies we see in the current time are those objects too.” C5

There is an awareness of the need to engage in substantive and pedagogical considerations related to responsible computing and associated social issues. Many faculty can see the privacy challenges, the connectivity and access challenges, and the need to ensure that students are well versed in the use of the digital. At the same time there are significant points of deep disconnect between the delivery platforms that are part of the focus of day-to-day life in the university, and the underlying considerations of computing ethics and social issues that are associated with their development and use. The ongoing tensions are real for faculty and are often expressed through comments about the pressures they experience from administrative initiatives, fractured time commitments, and the drive to technology as answer.

CONCLUSION

Information from this research sheds light on how humanities and social science faculty are engaging with issues related to responsible computing. While, based on existing definitions, none of the faculty could be considered digital natives, the language used to define the landscape of digital native/digital immigrant is demonstrated to not effectively communicate the complex connections that these faculty have to digital technology and connection with students. Some faculty are quite well-versed in the various forms of remote delivery and are already exploring topics relevant to computing ethics and social responsibility. Others, while less directly engaged, are recognizing the necessity of examining the underlying structural and cultural issues associated with digital development and use. Many have already crossed the perceived divide, are teaching remotely, and are incorporating new topics about computing ethics into their courses to better prepare students. Yet, this incorporation does not mean that there are not ongoing tensions related to the university environments in which they instruct and engage in scholarly work. In fact, the impact of COVID-19 on university life has meant the creation of increased pressures to instruct remotely and has required more extensive use of digital platforms. The emphasis within universities on use and the obvious ethics surrounding use and privacy, directs the gaze away from other central questions of the intention of development, human relationship patterns, and how humanity can maintain empathy and care (Foucault 1977). As the gaze is refocused, it is easy to miss the control over the substance of the intellectual discussions related to digital developments as well as the use of digital platforms. As one department chair noted, faculty should be framing discussions that directly address "... the big questions that students should be thinking about ..." C5 These broader issues are at the heart of necessary considerations for cross-disciplinary discussion and action.

KEYWORDS: computing ethics, teaching computing ethics, collaboration in higher education, integrating computing ethics, social responsibility in computing.

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