Upper Division Education

Professional Learning Community

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This PLC was tasked with examining upper-division education through the lens of four distinct but interrelated questions:

- What type of upper division education will best prepare learners for careers and citizenship?
- Does the current structure and content of SOU's majors and minors need to change as our society and economy change?
- As new fields emerge, how do we determine whether we should provide education in those fields?
- In response to research showing that learners are motivated to solve problems, could we engage learners in grappling with audacious problems in addition to developing disciplinary expertise?

Effectively examining these questions required accounting for significant shifts within higher education. Most notably, the demographics of college campuses are changing rapidly as the number of non-traditional learners grows, and the needs of employers seeking to hire college graduates are evolving alongside rapid technological advancements in the workplace.

Recognizing these changes, this PLC performed a review of the literature related to a variety of issues surrounding upper-division education. These issues included changes in pedagogy, disciplinary content, academic program structure, and university organization. Further, it was evident that there is a thin line between upper and lower division coursework, and that consideration or changes to one warrants an equally comprehensive consideration of changes to the other. It may not be realistic to focus on upper division education without reference to lower division, where there is potential to prepare students through scaffolding of essential content and skills across the curriculum and to promote appropriate support services at whatever age or division level learners matriculate at SOU. Additionally, it is apparent that the ways in which universities recognize content mastery is worth critical consideration. While traditional four-year degrees may continue to be of significant value to students and employers alike, additional options like badges and micro-credentials are likely to play an increasingly important role for learners across ages and professional achievement. Tying together each of the aforementioned issues, this PLC has attempted to present an overarching summary of the various findings related to upper-division education reform.

Changing Demographics of College Learners

The demographics of higher education are changing; nearly half of U.S. college students are 25 or older, even more work part-time or longer, a quarter of them are parents. These trends will only accelerate over the next five years, forcing higher education institutions to asses and redefine their understanding of who is a "traditional student" in the twenty-first century (Bill & Melinda Gates Foundation). Additionally, precipitous declines in the number of high school

graduates over 2025-2029 are expected to reduce the number of traditional aged college students by 15%, necessitating a further shift in student populations if colleges and universities are to continue enrolling as many students as they have in the past (Grawe, 2018). Consequently, upper division courses will increasingly need to accommodate a blend of both "traditional" students who live on campus, and "nontraditional" students who are older, usually have work or family responsibilities, or may be first-generation college students characterized by O'Donnell et al. (2015) as "underserved" groups.

Nontraditional students come to SOU with a set of unique learning needs, whether entering upper division courses after successfully completing lower-division courses, returning from a long hiatus in their studies, or completing an AA program on a nonresidential campus or online. These needs necessitate examination of how upper division courses are structured and taught, as well as underlying assumptions about nontraditional learners. In their study of faculty perceptions of nontraditional students, Zerquera et al. (2018) found that despite respectful awareness of the complexity of many nontraditional students' lives, faculty tended to see this as a "pull," or deficit, rather than as beneficial experience that can inform the classroom experience for all. Some faculty expect traditional time management and compartmentalization of life for nonresidential, often nontraditional, students. Zerquera et al. (2018) concluded that faculty are likely to draw on their own experiences as students in how they actually deal with students, leading the authors to recommend professional development to prepare faculty to engage better with nontraditional students within an anti-deficit framework that respects and incorporates the experiences students bring to learning situations. Experiences differ somewhat by gender, as in Taniguchi and Kaufman's (2007) findings that divorce provided strong incentives for women to go to college, enrollment of men was then more likely to vary with the strength of the economy, and responsibilities for small children impeded college entry/re-entry for both. Women are the majority in both traditional and nontraditional student categories.

Changing Job Market

In addition to changing demographics of colleges and universities, educators must also consider the evolving needs learners have in order to qualify for the future job market after leaving campus. While employers may be looking for particular skill sets, predicting emerging fields is difficult. Artificial intelligence, nanotechnology, and bioinformatics are all examples of industries that simply did not exist a generation ago. Moeller (2018) argues "the most in-demand occupations or specialties did not exist 10 years ago, and the pace of change will only accelerate. On average, by 2020, more than a third of the desired core skill sets of most occupations will be made up of skills not considered crucial to the job today." In general, though, it is reasonable to predict that the jobs of tomorrow will require a basic facility with technological competence, an ability to use technology to access information quickly and effectively, and the willingness and ability to learn and adapt constantly as graduates change from one job to the next and as technology continues to improve and advance (Pinsker, 2016).

Though technical, job-specific skills are highly variable across industries and over time, employers' need for workers with well-developed personal, cross-disciplinary skills will remain constant. Such skills, which are often hallmarks of graduates of strong liberal arts programs, include: complex problem solving, critical thinking, creativity and curiosity, data analysis, interdisciplinary collaboration and teamwork, agility and adaptability, written and oral communication, leadership, professionalism and work ethic, career management, emotional intelligence, and intercultural fluency (Donohue, 2016; Gray, 2016; Hrabowski, 2015; Moran, 2016; Pinsker, 2016; Wagner, 2008; NACE, 2018). Indications from employers and recent college graduates suggest that the need for this type of skill development in college is dire. In a study of 704 employers (2018), over 78% identified such skills as being more important than content area or technical skills knowledge. Problematically, though, a study of 1,651 college graduates (2018) found that 30% of them felt they had not received enough critical thinking support in college to guide them successfully in their careers (Chikeleze, Gibson, & Johnson, 2018).

Of all these skills, critical thinking, specifically, is strongly linked with the ability to resolve complex problems in contexts outside of the classroom, which is critical for success in a rapidly evolving professional landscape after graduation. Tiruneh et al. (2016) defines critical thinking as involving "the ability to clearly and precisely raise vital questions, gather relevant information and reach well-reasoned conclusions, make accurate decisions, assess the credibility of sources, identify cause-effect relationships, and effectively communicate with others in figuring out solutions" (p. 482). Critical thinking "requires deep knowledge and the ability to apply that knowledge to new, novel, or authentic situations" (Chikeleze, Gibson, & Johnson, 2018), a critical component of professional success in the rapidly evolving employment landscape of the future.

Ultimately, colleges and universities must be able to provide the opportunities for students to gain technical and transferable skills. The importance of the intersection between the two is highlighted in a report from the American Academy of Arts and Sciences, which insists that "the longstanding debate over the value of a liberal arts education versus a more applied postsecondary program presents a false choice" (Weise et al., 2018), and emphasized by the Director of the Collegiate Employment Research Institute when he argued, "There are really only two choices for graduates who want a lot of employment options - to be a technically savvy liberal arts graduate or a liberally educated technical graduate" (EAB, 2017). Colleges and universities must adapt their curricula and pedagogy to produce graduates capable of meeting the diverse and evolving demands of employers if they are to remain relevant.

Skill Sets and Pedagogical Implications

Identifying ways to effectively impart the skills discussed above requires examining carefully what content should be taught and how best to teach it. The literature suggested consistently making upper division coursework more interdisciplinary. An increasing number of jobs today

are “hybrids” combining skill sets that historically were seldom components of a single profession, such as marketing and statistical analysis, or design and programming. Weber (2019) points out that about one-quarter of all occupations in the U.S. economy show strong signs of hybridization, and they are almost universally the fastest-growing and highest-paying. Even more importantly, those are the jobs which are most resistant to automation. Research shows that 42% of all jobs can be automated, but only 12% of highly hybrid jobs fall into this category (Sigelman, Bittle, Markow, & Francis, 2019).

A student’s ability to work effectively in a hybridized job and to solve the complex problems of the future will require competencies that go far beyond narrow disciplinary knowledge and must incorporate the ability to make connections across disciplines (Labov et al., 2010). STEM course content, by way of example, is inherently interdisciplinary, as all areas of science rely on and inform others. Labov et al. (2010) argue that upper-division STEM courses that incorporate concepts from multiple disciplines will better prepare students for emerging technologies and jobs, and it is easy to imagine that the same is true across all other disciplines.

Making upper-division education more interdisciplinary is not the only way to build critical skill sets in students. Eberlein et al. (2008) argue that techniques such as problem-based learning, process-oriented guided inquiry learning, and peer-led team learning promote student engagement in STEM disciplines while focusing more on the way people learn rather than content. Knight et al. (2008) highlights the use of case-based learning in upper division biology courses as an active learning technique. They argue that modifying lecture time so that students collaboratively study a relevant topic can enhance problem solving skills and even content knowledge due to increased engagement.

Independent research experiences are also important for students in STEM and can be applied in other disciplines as well. For example, Gilmore et al. (2015) found that undergraduate research experiences increased performance and supported growth in a variety of skill sets required for success in graduate school programs. One such important skill is autonomy, in which a student learns how to learn and to perform research independently with minimal guidance (Moeller, 2018). Practical hands-on experiences in upper division electives are also important, even though they seldom require students to access skills that will be used in jobs after graduation. Students who learn to operate sophisticated instrumentation, for example, develop competencies that will allow them to learn “on-the-job” when a new technology is encountered. Similarly, in reporting the California State University system’s program-wide enhancements to foster student success, especially among the underserved, O’Donnell et al (2015) emphasized undergraduate research, along with other high-impact practices on student success. They found that, “Even when controlling for academic preparation (SAT score), taking courses with an authentic research component was positively correlated with academic performance across classes (cumulative GPA). This relationship was strongest for students who had taken multiple courses with a research emphasis, findings that were consistent across disciplines” (p.33).

Following their survey of STEM students at an Hispanic-serving institution (HSI), Rodriguez Amaya *et al*. (2018) identify a need not just for high-impact undergraduate research experiences (URE), but also effective mentoring. Despite Hispanic STEM students being knowledgeable about institutional research, they were found not likely to engage in it, partly due to perceptions that scientific research is only for future scientists, or that it is a lonely endeavor. Some students queried were sophomores, thus about to move to upper division. Langer (2010) offers insights on the pedagogical and service aspects of mentoring as perceived by alumni of Empire State College, a system founded for educating nontraditional students. In contrast to STEM students, who seemed focused on understanding and meeting high academic standards through their faculty mentors, students in arts and humanities, social sciences and business were more likely to look to mentors for self-reflection, personal development, and possibly career guidance. The same study reports that students lacking in self-confidence or experiencing social isolation were more likely to turn to faculty mentors, yet there were barriers to reaching out to mentors on the part of women and other marginalized students. Overall, non-white students had a lower level of positive mentoring. These experiences crossed lower and upper division levels, and were reported from alumni.

Experiential learning has been identified as a key practice for building critical thinking skills. Henrich et al. (2015) cite seven additional sources who promote critical thinking as the foundational skill required for understanding and resolving complex issues “often approached through experiential sustainability learning” (2015). David Kolb’s (1984) experiential learning model frames experiential learning as having a concrete experience in an authentic situation followed by a systematic reflection on the inner workings of each experience. Reflections are then conceptualized and ideas are applied to new concepts. Critical thinking skills can lead to engaged students by supporting learners as they practice analyzing issues, applying evidence, framing problems, questioning assumptions, and identifying relevant contexts needed for a solution (Rhodes, 2010).

The literature is limited on proven techniques used to teach critical thinking in the context of ‘wicked’ problems, the super highly complex and interdisciplinary problems that are essential to solve in order to maintain a sustainable society (i.e. climate change, income inequity, etc.). However, White et al. (2017) described one successful curriculum focused on a single foundational concept -- in this case Earth’s critical zone where humans interact with Earth systems -- to teach sustainability concepts across many different classes. By focusing on that single concept, junior and senior students better understood the applicability of sustainability than students who did not have that common concept throughout. This touches on the role of term/semester (or longer) projects (i.e. capstones) as several researchers have found strong evidence that students who have the time to ‘deep dive’ into a topic show a higher rate of information retention (Davis et al. 2017). In many cases, these project-based learning

opportunities provide students the ability to work directly with potential employers (Johnson et al. 2015; Johnson and Ulseth 2016).

It is important to note, though, that "while experiential learning pedagogy addresses many of the knowledge sets, skills, and behaviors [required for engagement], it does not by itself develop critical thinking" (Henrich et al., 2015). Development of higher level thinking skills is reliant on teachers to both scaffold critical thinking practices while connecting their curriculum to "real-world experience" so students are prepared for "life-long learning beyond campus gates" (Chikeleze, Gibson, & Johnson, 2018). Strong pedagogy designed to foster critical thinking skills builds metacognition around decision making, tasking students with analyzing and improving results, crafting arguments, critiquing outside arguments, and "correcting the errors in argumentation" (Helsdingen at al., 2011). The skills are critical to attacking the challenging problems that matter to Southern Oregon and the world as a whole.

Global Citizenship Education and Content

Enveloping all other purposes of a college education, including career preparation, is the goal of creating good global citizens. As Cathy Davidson states in *The New Education*, "The goal of higher education is greater than workforce readiness. It's *world* readiness" (2017). Consequently, Global Citizenship Education (GCE) has become a buzzword in the field of higher education both in the United States and beyond, particularly in the past decade. It relies on the larger idea that, in an increasingly globalized world, people are no longer simply members of their respective nation-states, but should consider themselves "global citizens" (Killick, 2015). This emphasis has included a variety of themes, including civic participation and social and environmental responsibility, and has been conceptualized, at least for some, as a response to the increasingly globalized workforce students face upon graduation (Goren & Yemini, 2017). GCE has been debated in the literature, as different scholars and institutions have taken very different approaches in articulating what the field should actually entail. According to Aktas et al., GCE programs in general "aim to enhance students' academic, professional, and personal development to help them better navigate a more globalized world" (2016, p. 66). In this section, we separate GCE into two primary arenas, as delineated by the existing literature: Global Consciousness and Global Content.

A primary driver of GCE is to develop awareness of and empathy for the larger world and the student's role within it. Those that critique the Western-based framework of GCE advocate the importance of teaching students not just about the world, but about the vast inequalities and injustices upon which it is built. While skill development has been at the heart of GCE since its inception, there is increasing recognition that this must be accompanied by a more radical perspective on global citizenship; students need to understand the global structures that perpetuate inequality and be inspired to proactively promote solidarity between diverse communities (Aktas et al., 2016). It also means developing an ability to advocate for others in vulnerable positions and for environmental sustainability (Goren & Yemini, 2017); this by

necessity requires a conscious awareness of basic human rights (Takkac & Akdemir, 2012) and a high degree of sympathy for the suffering of others (Takkac & Akdemir, 2012). Students need training in diversity and inclusivity in order to break down barriers between communities and foster meaningful understanding across borders (Killick, 2015). OxFam, which is an international confederation of organizations that works towards solutions to global poverty, has been a driver in promoting GCE at all levels of education. They define a Global Citizen as someone who, to paraphrase, is aware of their role in the world, respects diversity, does not tolerate social injustice, participates in their local community, and will act to make the world "a more equitable and sustainable place." To do this, GCE advocates stress the need for critical thinking and leadership skills along with content-based global knowledge (Takkac & Akdemir, 2012).

Proponents of GCE insist on equipping students with a highly developed sense of morals and ethics through learning that is holistic and incorporates the role of the individual vis-a-vis the larger world. Within the classroom, students should not only learn content, but be trained in how to actively use that content when they leave the classroom through a student-centered, active and experiential learning environment (Killick, 2015). A part of this experiential learning is meant to empower students by having them bring their previous experiences into the classroom and reflect on them, asking questions and resolving conflicts through cooperation (Boni & Calabuig, 2017). In all lessons, the GCE approach stresses critical thinking as central to its model, pushing students to think through complex problems, consider novel solutions, and analyze information both independently and with others. These skills are meant to develop capacity both for global consciousness and the ability to act in real-life situations based on this critical awareness.

The implementation of Global Citizenship Education (GCE) and content of this curriculum varies greatly; however, one significant difference has been the focus on national, primarily in the USA, versus a "supranational need" (Goren & Yemini, 2017:175). While some argue that a global awareness is enough to prepare students, proponents of critical GCE suggest examining national citizenship through a critical lens is important as it shows students "how global citizenship ties into their everyday lives and experiences" (Goren & Yemini, 2017, p. 176). More broadly, GCE curriculum tends to contain four characteristics: "international travel, language proficiency, engagement/service learning, and curriculum content area(s)" (Aktas et al, 2016, p. 71).

GCE in "developed" countries tend to utilize a one-size-fits-all model that relies heavily on travel programs (e.g., study abroad) and technology (e.g., internet and gaming) to connect students with individuals from other cultures, in person or virtually (Goren & Yemini, 2017); this may include "engagement with international students and scholars, global service learning, globally focused capstones, internships, [and] international interactive video-conferences" (Whitehead, 2015:9). Rapidly developing technology provides one way of connecting, particularly place bound, students to a global community (Olaniran & Austin, 2009). Olaniran &

Austin (2009) caution against the incorporation of technology "for the sake of technology." Rather they highlight the importance of institutional training and support to allow instructors to utilize technologies in a pedagogically sound way. Cruz & Penley (2014) suggest that in some instances technology can be useful in connecting rural students to a broader world; however, they highlight that technology focused courses tend to be interdisciplinary which may be what actually resonates with students.

These approaches that rely on travel or access to technology are critiqued for not addressing the socio-economic, geographical, and cultural barriers for some students, and/or the legal barriers for other students (e.g., immigrants) (Goren & Yemini, 2017). While these can be useful tools, too often the focus is on "learning from the other" rather than building a critical perspective and developing empathy. Moreover, use of technology within a course does not mean that students are developing skills in how to use technology - a skill set that employers are looking for (NACE).

Critical scholars argue that inclusion of GCE in upper division curriculum benefits from a broader holistic approach rather than one-off classes. While some students may begin to develop some global awareness in a 10-16 week term class, cultivating a critical global citizen mindset and skill set - including active, engaged learning - takes longer (Aktas et al, 2016; Naoumova & Rogers, 2015; McNair et al, 2016). At a minimum, employers are looking for individuals with a sense of global and intercultural fluency - "knowledge of universal values and cultural practices; understanding close ties in global political, economic systems, technology, and ecology; associating with global concerns; and associating with the global past and future" (Naoumova & Rogers, 2015, p. 308).

While there remains some critique of the accessibility and affordability of study abroad programs, those set up to critically engage students as global citizens provide invaluable experiences. These programs may still be an optional component of GCE and may benefit historically underserved students as they graduate and seek employment (Whitehead, 2015). Some challenges for historically underserved students is their lack of knowledge of study abroad opportunities, the value of these programs, and financial means (Whitehead, 2015). These are issues that institutions can strategically address. However, there are some students who cannot travel or go abroad. Rather than leaving these students behind, institutions can offer other experiential learning opportunities that help students develop a global citizen mindset and skill sets (Whitehead, 2015).

As addressed earlier, GCE also relies on the local and global connection and encourages relationship building between the two. This has most often been accomplished through service learning, community-based learning, or some type of experiential learning (Aktas et al, 2016). Rather than simply exposing students to diversity, which can replicate stereotypes and inequality, critical GCE engages students in collective and community action, where they examine their own positionality and address local and global inequality. Students engaged in this type of learning

benefit from opportunities to develop their communication and leadership skills. Furthermore, international students, who are already engaged in a travel component, would benefit from integration into GCE. The inclusion of international students can promote creativity and diversity in receiving institutions particularly when having international students working together with local students (Smith et al 2017).

The focus of this PLC has been on upper division education and curriculum; however, it behooves us to address the importance of language learning both in terms of developing as global citizens and the interconnection with upper division curriculum. As addressed earlier, one of the four typical characteristics of GCE is language proficiency (Aktas et al, 2016). Surprisingly, while most schools offering GCE highlighted the benefit of a foreign language, the majority did not require it. “The focus on foreign language learning as a skill individuals can gain to become more competitive in the global marketplace frames global citizenship as both a personal and economic pursuit” (Aktas et al, 2016, p. 72). A more critical GCE approach challenges the hegemony of English, “which enables the creation of spaces for dialogue and multicultural practice despite linguistic boundaries” (Aktas et al, 2016, p. 73).

Lear (2012) analyzed programs that integrate community service learning with “language for specific purposes” curriculum. For example, having language students work with local schools, organizations, or businesses to help them meet the needs of diverse language and cultural communities/clients. Depending on the type of needs, upper division curriculum may include 101 through fluent language learners. This re-visioning of upper division curriculum to include service learning, language learning, connecting the local to global, and having students practice their skill sets is innovative. Lear (2012) addresses the needs and benefits of such curricula to various stakeholders:

1. foreign language programs - practical application of language learning through community-based learning may benefit foreign language programs with higher enrollment;
2. local communities - where schools and services for non-English speakers may be limited;
3. students - who benefit from real-world, practical skills, such as communication and team-building skills, which make them more marketable, but also develop a better global citizen mindset. This opportunity is still valuable to “heritage language learners” - those studying a language who have proficiency in or a cultural connection to that language - who can bring their language and cultural strengths to courses and further develop their skills (Lear 2012);
4. employers - who desire critical thinking and global knowledge mindset, but want demonstration of these skills being applied; and
5. universities - building and strengthening town and gown relations.

In addition, local organizations and businesses might gain access to these developing skill sets which increases services and opportunities within rapidly changing communities. While Lear (2012) also address the challenges that need to be overcome to sustain this type of curriculum, they also note that the positive public relations and strong connections with alumni lead to monetary support of the university in the long run.

Additional Considerations: Curricular and Structural

The desire to create deeper learning opportunities is one of the many reasons faculty tend to prefer semester systems compared to quarter or term systems (Pyle 2007, 2009, 2012). Although students who are on a quarter system typically do not favor a semester system, Johnson (2014) found that student perceptions quickly evened out after one year of being on a semester system. In that study, students found that the semester allowed them more time to become familiar with the material, get feedback from instructors, and work better as a group (Johnson 2014). However, while students motivation did not change when moving from terms to semesters, they did require a period of adjustment.

Beyond debating quarters versus semesters, it is also worth considering alternatives to bachelor's degrees, master's degrees, and certificates, the primary credentials awarded at SOU. Three different approaches have emerged to address the desire to allow students to develop disciplinary skills more deeply and efficiently. The first is through micro-credentials or badges, which - at their most basic - are means of providing credit for specific competencies that are recognizable and meaningful across audiences.

While traditional degrees and certificates require the successful accumulation of a broad array of skills and knowledge, badges acknowledge learning on a much narrower level, since they are awarded for very specific skills.

> As higher education evolves to accommodate new forms of learning and new workforce needs, skills are being assessed across an ever-widening range of activities across the learning landscape. Campus-based and online degree programs, professional certificates, competency-based education, open online courses, professional development initiatives, cocurricular and extracurricular activities, and programs in service learning, information literacy, and entrepreneurship are just some of the many settings within higher education where competencies worth recognizing are demonstrated or observed. Digital badges unify the learning that happens in these diverse contexts—often at a relatively granular level—with a common and portable representation of achievement. (Diaz et. al, 2015)

Rimland (2019) also highlights the flexibility of micro-credential programs to be developed to either focus on key skills and/or to include professional experience, and Sigelman (2019) points out that they break down silos between disciplines by allowing learners to mix and match their classes to acquire on- the-fly the skills that are required in their hybridizing jobs. These

alternative forms of academic recognition can complement a traditional degree, helping students communicate to employers in a verifiable way that they possess a set of relevant, tangible abilities along with a broad base of academic knowledge while providing them with a great deal of flexibility regarding which badges or credentials to pursue and in what combination. These models also have the advantage of being easily offered not just to current, traditional students, but to community members, alumni, and employees of local community business partners as well. This helps achieve the goal of providing lifelong learning opportunities, as well as serving as an additional revenue generator for the institution. While promising, this new approach has raised some critical questions about the role of faculty in the micro-credential process (Willis et al., 2016), and would require a standard method for assessing practical skill competency across all the ways of knowing information (Lewis & Lodge, 2016). Nonetheless, badging and micro-credentials have gained substantial traction in teacher licensing (Rimland, 2019) and veterans affairs (Fain, 2012), highlighting the appeal of this approach to non-traditional students.

A second approach to providing greater job preparation increasingly being utilized on campuses involves the creation of pre-professional boot camps. Such programs are targeted, short-term professional development experiences designed to provide students with intensive skill-building opportunities before, and even after, graduation. The College of the Holy Cross, for example, offers an immersive four-day finance boot camp led by alumni that helps current students better understand the operations of Wall Street, learn about current financial events, formulate a stance on the market, prepare for interviews and pitches, and arrange networking opportunities with potential employers, while the City University of New York has partnered with a technology talent development company to provide industry-aligned coding boot camps for alumni that provide the opportunity to learn the latest enterprise-level, next-generation, and niche technology skills at no cost. Models like this allow faculty to focus on teaching the content they want to teach while the boot camp programs provide the specific technical skills required to be successful in the workplace. Further, these boot camps can be offered at various points throughout a student's university experience, from first year students exploring career fields through alumni returning to campus to gain new skills.

The third strategy for facilitating deeper skill development comes from Rohm et al. (2019) in response to the emergence of a new discipline. In that case study, students were lacking in digital literacy after only being required to take two courses in it, but were finding that all marketing was based on digital skills. To address this gap, they scaffolded their entire curriculum to include digital literacy skills in every course rather than requiring students to seek a separate micro-credential (Rohm et al. 2019). This provides a much stronger development of new skills by giving more context for the skills compared to developing new standalone courses.

Finally, sustainability is another important topic for inclusion in upper division curriculum. Bardaglio (2007) points out that while the sustainability movement in higher education has made considerable headway in the areas of research, campus operations, and community outreach, it

has been less successful in bringing about curricular reform. Yet, the successful businesses of the future will only be the "sustainable" ones. The lack of strategic orientation in corporate sustainability management has been cited as one major reason for the lack of progress in this field (Baumgartner & Rauter, 2017). Dyllick & Muff (2016) define Business Sustainability 3.0, as firms looking first at the external environment within which they operate and then asking themselves what they can do to help overcome critical challenges that demand the resources and competencies they have at their disposal. Similarly, Cortese (2003, p. 17) states that higher education "bears a profound, moral responsibility to increase the awareness, knowledge, skills, and values needed to create a just and sustainable future." It is important to point out that sustainability refers not only to environmental aspects (resource management), but also socio-cultural, economic and institutional aspects. Hence, sustainability also relates to ethics, diversity, equity, and relevant policies in the corporate or personal world. The ultimate goal of sustainability education should be to deepen learners' understanding of the impact we have on our society and natural environment and to remind us of the privileges we enjoy, as well as of our responsibility to those who follow us (Bardaglio, 2007). Faculty should also have a solid understanding of sustainability and the importance of and value in studying sustainability across disciplines.

This type of interdisciplinary service learning education provides students with opportunities to demonstrate their professionalism and work ethic in a way that is demonstrable for future employers. Moreover, it readies them for career management by providing them opportunities to practice their interpersonal skills - teamwork, diversity, communication, persuasiveness - along with practical application of organizing, prioritizing, managing project, and in some cases administering a budget (even if small).

Implications for SOU and Conclusions

Engagement and collaborations with the local community along with interdisciplinary curricula designs are some key models for universities to successfully prepare students for their future and equip them to manage change (McMurtrie 2018). SOU could offer classes in business, project management, and leadership, specifically developed for non-business learners. Thus, students taking those courses will have the advantage of being prepared for "hybrid jobs." We must make sure continuous learning is integrated in upper division curriculum, preparing students for the work environment of the future. Higher education will have to identify new jobs, but even more importantly, it will have to dissect those jobs into their component skill combinations. More specifically, that would mean engaging faculty much more closely in identifying how skills are changing within their fields and how coursework can adapt

Critical Global Citizenship Education aligns with SOU's mission and strategic directions. As such, having all students take GCE coursework would better prepare students for an increasingly global and diverse world and marketplace. This might be achieved through General Education/University Studies. These overarching courses could lay the groundwork to

developing a global citizen mindset, and possibly specific skill sets. This would mean SOU could claim that all our graduates will have these skill sets, something employers increasingly value.

Some of these strategies are already in use at SOU. For example, many of our programs require research-based capstones that emphasize thinking critically to solve difficult problems, engaging with the wider community, and fostering interdisciplinary connections. Many of our students also study abroad through either short or term-length options. For instructors already including GCE theories and approaches in their classrooms and programs, it may help to bring specific GCE language into course descriptions in alignment with SOU's mission. Some majors at SOU, particularly ones that already address critical GCE, may want to add the terminology to their mission and learning goals. Ideally, these programs might have students reflect on their global citizen mindset and skill sets to better articulate these for employers. Whitehead (2015, p. 9) points out that for GCE to be effective it must be "intentional and well integrated into the institution." If SOU came to an institutional agreement of what critical GCE meant for us, support could then be offered to individual instructors who might want to newly incorporate these into their courses. One barrier to implementing GCE that was repeatedly mentioned in the literature was the need for faculty training and institutional support.

Interdisciplinary experiential learning that has students connect the local to the global is an integral part of developing a critical global citizen skill set. This seems an opportunity for SOU faculty, staff, and students to really connect with our local community and develop long term learning relationships - for example, community service learning integrated with language learning for specific purposes. One challenge to this type of learning are the short 10 week terms. We may need to rethink this type of coursework in segments over the year(s). Developing and maintaining changing relationships with community organizations and businesses would benefit from staff oversight. Rather than leaving it up to individual faculty to challenge institutional barriers to creating interdisciplinary learning opportunities, might SOU develop a support structure where staff and administrators work to problem-solve issues and move new curricula forward?

High impact practices including undergraduate student research opportunities, community-based or service learning should be infused across disciplines across lower and upper division education. Professional development in these practices and in how to overcome barriers to student success in courses and their programs needs to be ongoing. Adjustment of faculty advisement/mentoring to student needs (STEM, other divisions) and receptivity; academic support personnel may need to play a complementary role to provide mentoring appropriate to identity and role-modeling needed for student success.

In conclusion, many of the lessons learned while reviewing the literature lend themselves to practical application here at SOU and can generally be organized into four categories of implementation: changes to how content is taught, changes to what content is taught, changes to

how programs are structured, and changes to how the university is structured. Simply put, the implications for SOU lead to:

Professional development and funding opportunities for faculty to explore pedagogical tools and engaging with diverse learners, and implement new course designs and technologies.

- Institutional support for faculty and programs to develop multiple term, or year long, "scaffolded" projects that incorporate job market needs and develop transferable skill sets.
- Institutional and staff support and resources for faculty and programs to develop community partnerships.
- Development of interdisciplinary micro-credentials that draw on faculty and program strengths and meet the needs of the region, beyond degree programs.
- Seek for all graduates to become critical "global citizens" through the infusion of GCE across SOU.
- Institutional support for the exploration and development of interdisciplinary connections across programs, possibly around specific problems.

Substantial institutional support will be necessary for startup and maintaining these endeavors. Some of the current structure and content of SOU's majors and programs needs to change if our learners, traditional and nontraditional, are to be equipped with the knowledge and skill sets to navigate future job markets and contribute to solving known and unknown audacious problems of the world. Institutional support, including professional development, for effective pedagogical practices that engage learners for upper division retention and success, is essential.

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