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What do we know about online internships?

A review of the academic and practitioner literatures

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Executive Summary

Internships are one of the most widely promoted co-curricular experiences for college students, and the COVID-19 pandemic and resulting shelter-in-place orders led to a substantial growth in the availability and popularity of online internships. However, little is known about the impacts of online internships on student outcomes. In this literature review we present key trends and findings from the academic and practitioner literatures on online internships. Relatively little empirical research exists on online internships, but researchers have found that pre-internship orientations, self-regulated learning, sufficient technology, and effective supervision are important for successful experiences. Our review also highlights that considerable variation exists among online internships, especially with respect to the host organization (i.e., employers or third-party vendors), compliance with standards for legitimate and high-quality internships, and duration.

Ultimately, we conclude that standards articulated for "legitimate internships" by the National Association of Colleges and Employers (NACE) and for rigorous experiential learning programs by CCWT should also be applied to online and/or remote internship programs. We conclude our review with recommendations for students, postsecondary professionals, employers and higher education researchers.

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Introduction: Why study online internships?

Work-based learning, whether in the form of an internship or apprenticeship, is one of the most influential ideas in public higher education and workforce development policy in the early 21st century. The central idea behind advocacy for work-based learning is that hands-on experiences in authentic, real-world contexts are an important complement to academic programs and classroom teaching – an idea expressed by educational researchers and learning scientists for decades (Dewey, 1997; Resnick, 1987). In fact, internships have been designated as a "high-impact" practice that improves student engagement and academic outcomes (Kuh, 2008), leading many colleges and universities to promote or even mandate internship programs as an essential experience.

Within the universe of internship programming, which consists of a diverse range of experiences that can vary according to duration, task quality, and mentorship quality, one type of internship has been gaining in prominence in recent years – that of online or remote internships[1] (Hora, Wolfgram & Thompson, 2017). As the sophistication of information technology has made distance learning and work-from-home arrangements more feasible and acceptable, the number and visibility of online or remote internships has been steadily increasing. However, with the COVID-19 pandemic of early 2020 resulting in the widespread cancellation of internships due to shelter-in-place orders and/or financial concerns, online internships have become the central modality of work-based learning for students around the world (Braga, 2020; Lumpkin, 2020).

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However, as faculty and career advisors scramble to provide internships for their students amidst the pandemic, many are asking questions regarding how to best design and evaluate these still novel forms of work-based learning. Given the potential for online internships to become a cornerstone of experiential learning in higher education, here are some questions that students, educators, employers and policymakers should consider:

- What is an online internship and how is it similar to and different from a traditional internship?
- What does the research literature say about the impacts of online internships on student outcomes?
- What does the academic and practitioner literature say about how to design an effective and high-quality online internship?
- What should colleges, employers, and students think about as they design, promote and pursue online internship programs?

1 In this report we use the term "online internships" rather loosely to refer to programs that postsecondary institutions, employers or third-party vendors variously call "online," "virtual," "remote" or "micro" internships. One of the primary conclusions of the report is that in both the empirical and practitioner literatures, the term "online internship" is used far too loosely to describe programs or experiences that do not meet the criterion for high-quality internships espoused by organizations such as NACE or CCWT. However, the term is used in this report to refer to a wide range of experiences that may or may not meet these criteria in order to ease the readability of this document and maintain consistent terminology.

These are critical questions because many state governments and institutions of higher education across the U.S. are actively developing and/or expanding online internship programs. These online internships will affect the lives of millions of college students, the companies they intern with, and the academic programs that are ultimately responsible for their education.

Yet, there is little research on online internships, and how-to guides for designing them are appearing on the Internet like mushrooms after a spring rain. While these guides may be useful, it is no exaggeration to state that the field of higher education is engaging in a massive experiment in which students are completing online internships with limited evidence to support their usefulness for students or their effectiveness in contributing to positive educational or career outcomes for college graduates. From our perspective as a research Center whose mission is to centralize student interests and experiences in debates and policymaking around the college-workforce transitions, this is concerning.

The field of higher education is engaging in a massive experiment in which students are completing online internships with limited evidence about their impacts and practical wisdom about effective program design.

In response, we have prepared this literature review of online internships as a guide for stakeholders engaged in the world of internships, to provide evidence-based tips and strategies for crafting high-quality, equitable and effective experiences for college students.

What is an online internship?

Before we answer this question, it is important to consider the definition of a traditional in-person internship. This is harder than it may seem, however, because there is no single format or structure for an internship, in contrast to work-based learning programs such as student-teaching in K12 pre-service teacher training programs, where the experience is structured in accordance with state and/or professional certification requirements. While some academic programs do have criterion for approved internship programs, many do not, resulting in a situation where college internships come in all shapes and sizes.

This programmatic diversity can be seen as one of the strengths of the internship world, as they can be designed to fit the unique needs and situations of individual students (O'Neill, 2010), but some organizations – notably the Department of Education and the National Association of Colleges and Employers (NACE) - have advanced strict definitions for internship programs to address growing concerns about the legality of unpaid work and the educational value of some programs. It is instructive to consider the widely cited definition offered by NACE as we consider online internship experiences, which is grounded in the contention that, "an internship is a legitimate learning experience benefitting the student and not simply an operational work experience that just happens to be conducted by a student" (NACE, 2018).

According to NACE (2018) the following criteria must be met for an experience to be considered a legitimate internship – whether offered in a traditional face-to-face modality ***or as an online or remote experience:***

1. The experience must be an extension of the classroom: a learning experience that provides for applying the knowledge gained in the classroom. It must not be simply to advance the operations of the employer or be the work that a regular employee would routinely perform.
2. The skills or knowledge learned must be transferable to other employment settings.
3. The experience has a defined beginning and end, and a job description with desired qualifications.
4. There are clearly defined learning objectives/goals related to the professional goals of the student's academic coursework.
5. There is supervision by a professional with expertise and educational and/or professional background in the field of the experience.
6. There is routine feedback by the experienced supervisor.
7. There are resources, equipment, and facilities provided by the host employer that support learning objectives/goals.

Source: National Association of Colleges and Employers, 2018

While these criterion were originally articulated to identify truly educational experiences that could ethically be provided without pay, NACE (2018) also advanced their definition and criterion in order to "establish uniformity in the use and application of the term." Such clarity and consistency is important not only for students, employers and career services professionals to avoid divergent or even contradictory interpretations of the term (Silva et al., 2018), but also for researchers who frequently fail to define the term or use compound questions in surveys that ask students about their involvement in an "internship, co-op, field experience, student teaching, or clinical placement" – each of which has unique formats, regulations, and educational goals, (National Survey of Student Engagement, 2018).

In addition, within our own Center we use the following criterion to distinguish internships from other types of work-based learning in order to comply with standards such as those outlined by NACE (2018) and other features identified in the research literature as being closely tied to student learning and development. In particular, we highlight the potential for internship experiences to provide students with an immersive experience in an organizations' workplace culture, which can provide rich opportunities for the development of professional networks and discipline- or occupation-specific professional skills and competencies.[2]

2 The competencies included in this criterion are often called "soft," "non-cognitive," or "21st century skills," which are terms we avoid due to their ambiguity and inaccurate connotations regarding the nature of these competencies. Examples of competencies that we include in this criterion include teamwork, communication (oral, written, digital, non-verbal), critical thinking and/or problem-solving, and so on.

In our Center we consider an internship to consist of the following features:

- A position held within an established company or organization while also completing a college degree, certificate, or diploma program;
- Working in a position clearly designated as an "internship" by the host organization;
- Performing tasks similar in nature and skill-level to tasks done by entry-level employees in the organization;
- Sustained engagement with the physical, socio-cultural and institutional features of an actual workplace;
- Participation in authentic tasks considered meaningful to the organization; and,
- Cultivation of both cultural (i.e., skills, knowledge, professional norms) and social (i.e., professional networks) capital that are valued by a profession and/or discipline.

As we consider the nature of online internships, we agree with NACE (2018) and argue that it is important to think about these criterion and definitions for traditional in-person internships and that a remote or online internship should be held to these standards. Thus, it is likely that some experiences commonly described as "internships" should probably not be considered in the same way as programs that meet the aforementioned elements (e.g., job shadowing, field trips, short-term project work). That said, it is also important to recognize the unique aspects in learning, student-teacher and peer relations, and engagement with content knowledge in an online environment (e.g., Liu, Liu, Lee & Magjuka, 2010; Ouyang & Scharber, 2017; Mullen & Tallent-Runnels, 2006), which may result in online internships having unique functions and impacts.

We next consider definitions of online or remote internships, and one of the first things to notice is the variety of terms being used to describe work-based learning programs that do not occur in a face-to-face manner – virtual, micro-, remote and online internships. Examples of definitions for these types of internships include the following:

> "Call it what you will: Remote internship, Virtual Internship, Online Internship, Tele-working, Telecommuting, it all means the same thing: you will be completing your internship without a commute and directly from your own laptop! When completing a remote internship many of the same aspects of a traditional in-person internship still exist including, meetings with your supervisor or teammates, completing a mix of individual and group projects, and learning about the overall company culture and industry it works in." (VirtualInternships.com, 2020).

> "Micro-Internships are short-term, paid, professional assignments that are similar to those given to new hires or interns. Unlike traditional internships, Micro-Internships can take place year-round, typically range from 5 to 40 hours of work, and projects are due between one week and one month after kick-off." (Parker Dewey, 2020).

> "A virtual internship is when an intern works remotely…as in anywhere other than your office. Sometimes referred to as "telecommuting" or "offsite work," in the job market in general, hiring virtual employees has officially become a trend." (Chegg.com, 2020).

It is evident from this brief review that what some consider to be an "online" internship varies from the criterion advanced by organizations such as NACE. In addition, it is clear that the variability that exists among traditional in-person internships (e.g., duration, quality of tasks, type of mentoring) also applies to online or remote internships, thus underscoring that the likelihood that the term "online internship" obscures considerable variation in the nature of students' experiences. At the very least, the lack of terminological clarity and consistency with online forms of internships appears to be similar to the documented variation in the ways researchers conceptualize and define e-learning, distance learning and online learning (Moore, Dickson-Deane & Galyen, 2011)

Important contexts to online internships in 2020

While online or remote internships became increasingly prevalent in the early 2010s, it is important to recognize that the political, socio-cultural, economic and public health contexts of 2020 represent a particularly unique situation for college internships. These contexts do not just include the COVID-19 pandemic, but also include the growing precariousness of work, developments in simulations and virtual reality, and concerns about equitable access to traditional face-to-face internships.

COVID-19 pandemic and the shift to online education and work

The COVID-19 pandemic has created a huge disruption to internships for college students, as shelter-in-place orders, travel restrictions, and the declining financial health of many organizations led to the cancellation of thousands of internships. These developments have left students who were expecting or required to complete internships prior to graduation with few options (Braga, 2020; Lumpkin, 2020). In other cases, employers rapidly shifted their traditional face-to-face programs to remote or online internships, and organizations who already had remote or online programs in place were well equipped to contend with the situation. For many other students, however, the completion of online or micro-internships via third-party vendors appear to be one of their main (if not only) options in the near-future.

Growing precarity of work and "gig" labor

One of the most troubling labor market trends facing college graduates is rapid growth of the "gig" economy, exemplified by firms such as Uber or jobs like adjunct faculty, where workers are not technically employees, have no job security and consequently do not receive benefits or many worker protections (Shambaugh, Nunn, & Bauer, 2018). With some types of online internships, particularly micro-internships, essentially representing short-term contracted labor, some question is this development will normalize the gig economy for students and risk providing employers with a large supply of cheap labor, which underscores the challenges inherent within the online internship economy (Fisher, 2019).

Longstanding efforts in studying teaching and learning in virtual or online settings

Finally, it is important to recognize that online forms of experiential learning and/or hands-on learning are not recent inventions. Beginning in the 1980s, learning scientists explored ways to use computer-assisted learning

for K-12 students (Bransford, Brophy & Williams, 2000; Littlefield et al., 1988), and more recently educators in fields ranging from medicine (Heinrichs et al., 2008) to engineering (Balamuralithara & Woods, 2009) have used computer-based simulations as tools for training future professionals. In addition, researchers have long been exploring the nature of teaching and learning in online settings (e.g., Liu, Liu, Lee & Magjuka, 2010; Ouyang & Scharber, 2017), yet these bodies of research are infrequently included in conversations about internships, whether in their traditional forms or in online venues.

Results from the academic literature

In this literature review we adopted an integrative approach, which involves reviewing, critiquing, and synthesizing a body of literature in order to provide a comprehensive understanding of an educational topic (Torraco, 2005). In particular, our aim here is to describe how online internships have been conceptualized in the empirical and practitioner literatures, and subsequent strengths, weaknesses and topics for future research.

Our review began with keyword searches of Google Scholar, Education Research Complete, and JSTOR, using terms such as "online internships," "remote internships," and "virtual internships." In addition, we searched in specific journals such as The Internet and Higher Education, Higher Education, Skills and Work-based Learning and Education + Training using similar keywords. Exclusion criteria included publications not in English, articles addressing online or virtual education broadly defined (i.e., not extra-curricular work-based learning opportunities), and research on in-person or blended types of internships. With these criteria, we focused on 35 articles from the academic research literature that explicitly addressed the topic of online internships.
Review of definitions provided for online internships

First, we review the ways that different researchers describe online internships and the types of programs that are associated with the term (see Table 1).

Table 1. Examples of different terms used by researchers to describe online internships

Authors	Term Used	Definition	Description of paper
Ahsan, S. M., & Hassan, A. (2013)	Virtual internship	Internships involving the use of an information and computer technology (ICT) supported environment, where students interact with each other and companies, independent of time and space, and across traditional geographical boundaries, in order to carry out a specific and meaningful work-based activity that sometimes fits within the student's compulsory educational curriculum.	Conceptual piece outlining key elements to consider for designing and assessing virtual internships in Pakistan

Authors	Term Used	Definition	Description of paper
Bayerlein & Jeske (2018)	Computer-mediated internships (e-internships and simulated internships)	E-internships are real-world work placements where the interactions between the intern and their employer are predominantly computer-mediated; Simulated internships represent structured learning experiences in which students are placed in an immersive virtual environment that replicates a real-world internship setting.	Conceptual literature review comparing hypothesized learning outcomes of three types of internships (traditional, e-internship, simulated internship)
Jeske & Linehan (2020)	E-internships (or virtual internships)	E-internships are partially or fully computer-mediated internships that are provided by an employer or institution to candidates.	Empirical study exploring nature and impact of mentoring on e-interns' satisfaction and skill development
Lansu, Lohr & van Dorp (2009)	Remote internship	Field-driven assignments designated to students by third-parties (i.e., public or private organizations in which students work for the most part off-site and on flexible hours, herewith utilizing generic and/or specific information and communication tools.	A pilot study in the Netherlands of communication tools, project types, and student employability of remote internship program
Chesler et al., (2013)	Virtual internships; Professional practice simulator	Virtual internships simulate authentic engineering problems and practices in an online environment and give students the opportunity to engage in realistic professional engineering work.	Complement to introductory engineering course; students meet in computer lab and work in teams on virtual fictitious project under guidance of "design advisors" who are graduate students
Suzuki et al (2016)	Micro-internship	Paid, mentored real-world work experiences	Description of a platform for connecting "crowd" interns with "crowd" mentors online

In this table it is clear that researchers use a variety of terms (e.g., online internships, virtual internships, e-internships) to describe the phenomena of an internship program conducted primarily (if not exclusively) from a distance and/or using the Internet and communication technologies. It was uncommon, however, for researchers to acknowledge the terminological ambiguity represented by these terms, and how they may obscure very different types of experiences.

In the most comprehensive analysis of different types of online internships, Bayerlein and Jeske (2018) posited that three types of internship formats exist – traditional, e-internships, and simulated internships – and speculated on the different types of outcomes students may expect from them (i.e., cognitive, skill-based and affective outcomes). For Bayerlein and Jeske (2018), an e-internship is an internship that is predominantly mediated by computer technologies, and a simulated internship is attached to and hosted by a college or university instead of an employer. In most other instances in the literature, however, careful distinctions between distinct types of computer-mediated work-based or work-integrated learning were not made, leaving considerable room for assumptions and/or confusion about the precise nature of the experience.

Predominance of conceptual articles about online and virtual internships

One of the notable features about the research literature about online and virtual internships is the relative lack of robust empirical studies. Far more common were conceptual or rhetorical papers where authors discussed the potential and/or benefits of virtual internships. For example, Vriens and colleagues (2010) argue that given constraints in student mobility and access to suitable internship placements, a virtual experience for students in Europe may be preferable and can provide opportunities for business-university partnerships, development of students' skills with information technology, and provide access to internships for low-income students. In a similar paper that also considered virtual internships in a European context, De Beeck and Petegem (2013) suggested that an effective virtual internship needs effective information technologies, should include some face-to-face component, and needs to be well-organized and planned.

In a conceptual piece focused on designing effective online internships, Bayerlein (2015) argues that internship designers take a backwards design for virtual internships, where desired skills are articulated and then intern tasks and assessments are identified. Backwards design is an influential approach in K12 and postsecondary curriculum design circles but has yet to be widely adopted by those engaged in the design of internships and other forms of WBL (Wiggins and McTighe, 2005).

In a related article, Roy and Sykes (2017) discuss a well-known educational concept that is not as common in WBL - that of self-regulated learning - which refers to the idea that effective learners must self-monitor their own learning (or lack thereof), institute effective study habits in response, and self-motivate to improve performance (e.g., Zimmerman & Schunk, 2001). In their paper, Roy and Sykes (2017) propose a model for designing virtual internships in the hospitality industry that emphasize four stages - planning, engagement, assimilation (i.e., application of theory to practice), and review and reflection – that both faculty and students should consider. Other articles that did not feature empirical research and/or collection of primary data include discussions of effective online internships for educational leaders (DeWitt & Rogers, 2009; Goldsmith & Martin, 2009), and arguments for the advantages of offering virtual international internships, especially the cost-savings for students and employers (Marr, 2019).

Surveys of student interest in virtual or online internships

One of the types of studies identified in our review involved surveying student interest in and/or experiences with virtual or online internships. Black and Bachman (2007) surveyed business students about their interest in virtual internships, finding that 95% felt that the modality was innovative and could represent a good way to learn about career opportunities, while only 54% felt that they had sufficient skills to succeed in a self-regulated remote experience. In a study of European students' views on virtual internships, Medeiros and colleagues (2015) found that students felt that virtual experiences had great potential, especially because they were flexible and mobile, while disadvantages included the lack of social interactions and the need to be organized and self-motivated.

Jeske and Axtell (2014) examined student perspectives with "e-internships," finding that given a computer mediated experience necessarily precludes intensive and face-to-face social interactions, it is important for faculty and internship designers to consider ways to address the potential for students to feel socially isolated and disconnected. In a similar paper on student experiences with virtual internships focused on writing, former interns stated that they had insufficient preparation prior to the internship, and inadequate supervision during the experience (Leath, 2009).

Use of online forms of work-based learning to complement coursework

The next category of research includes studies that examined virtual or online internships and/or learning opportunities as complements to traditional courses. In a study of accounting programs at the University of Maryland University College (UMUC), Bayerlein (2015) examines virtual learning experiences as an innovation that contextualize learning via "immersive, scenario-based" activities (p.675). A similar study modified a problem-based learning (PBL) unit to include a virtual experience in a nursing program, where students assumed the roles of community nurses in different scenarios (e.g., post-disaster situations in a small town) (Ward & Killian, 2011).

In another study of a program at UMUC, Conroy and Khan (2009) described using online work-based learning projects as components of an online course and/or academic program. For an online biotechnology program, the authors developed a capstone course where students worked on team projects for local biotechnology companies, and used a learning management system to do readings, engage in group discussions, and submit assignments.

Another line of inquiry explored the use of virtual learning experiences within undergraduate engineering courses (Arastoopour et al., 2016; Chesler et al., 2015). In these courses, two virtual learning programs were created where real-world engineering problems were scaffolded from easy to more difficult situations, and data on student learning was collected to ascertain the complexity and accuracy of their problem-solving abilities. Student work on the projects took place on a weekly basis in a computer lab on campus where graduate students act as mentors, which resulted in a situation less like an internship and more of course-based virtual learning activities that mimic real-world situations.

The programs described above are less a form of work-based learning (i.e., an internship as defined by NACE or CCWT) and more an example of work-integrated learning, where real-world situations and problems are imported into existing course curricula, and where the primary milieu in which learning occurs is an academic course and not an employer-determined project or problem (Jackson, 2015).

Online internships and work-abroad programs

Another body of research used virtual or online experiences to complement and/or replace in-person international work programs. For instance, Vriens, De Beeck, De Gruyter, & Van Petegem (2010) reviewed two types of virtual work placements – the first involving fully online work placements and the other using online support systems for international work programs. In another paper, the authors (De Beeck & Petegem, 2013) explore the idea of "virtual mobility" in a European context, where cross-border trade and travel as part of the educational experience was strongly encouraged by national governments amidst the internationalization of European higher education.

Research documenting key elements of effective online internships

We next discuss studies that explored the design features of online internships that appeared to be especially important for positive student experiences and outcomes. In a study of an online library science internship program, clear expectations articulated by the university for the internship prior to the internship beginning, supervisor training, and the availability of academic advisors were associated with successful online internships (Dotson & Bian, 2013). Pike (2015) conducted a case study of a "teaching internship" where 3rd year music students took three 30-minute synchronous online piano lessons and conducted an online presentation of teaching methods. The author concluded that in a musical education context, "poor teaching is magnified online" (Pike, 2015, p.237), and considerable preparation for interns – especially those who are training to be teachers – is required prior to engaging in an online teaching internship.

A recent paper addressed one of the critical features of an internship experience – that of supervisor and mentoring quality – by surveying 158 former online interns from around the world (Jeske & Linehan, 2020). The survey found that the length of online internships did not increase student satisfaction, but that longer internships were more likely to include a mentor-intern relationship. Further, the data indicated that mentoring enhanced students' skill development (especially communication skills), and were more likely to be given opportunities to engage in collaborative work (Jeske & Linehan, 2020).

In a study of an online internship for instructional designers, Ruggiero and Boehm (2016) found that principles of effective design that applied to face-to-face learning were particularly important for a virtual internship. These included the need to articulate learning outcomes prior to creating the internship (i.e., backwards design), pre-internship meetings with clients (i.e., faculty) to identify performance goals, and facilitating peer communications among students. Ultimately, the authors found that, "explicit, clear communication between clients, mentors, and interns during the virtual internship led to secure attachments and internships that ended in completed projects meeting all of the criteria" (Ruggiero & Boehm, 2016, p. 117).

A study of online internships in library studies also emphasized the importance of communication among interns, academic advisors, and employer supervisors (Franks & Oliver, 2012). In particular, the authors found that articulating site supervisors' expectations regarding the necessary technical and "soft" skills exhibited by interns is critical, and that post-internship evaluation is essential in order to continually improve programs. In a paper exploring the prospects of online internships to increase the diversity of interns in Australia, particularly for students with disabilities, a survey of 24 career advisors revealed that many were not aware of virtual internships and that government agencies, educators and employers should engage in collaborative work on the topic (Kraft, Jeske & Bayerlein, 2019). Finally, studies of education-related online internships found that remote experiences were promising, but that good communication and program design were critical components of a positive and effective internship (DeWitt & Rogers, 2009; Waters and Russell, 2016).

Results from the practitioner literature

In addition to conceptual and empirical studies from the academic literature, our review uncovered several reports or how-to guides from career services, work-based learning, and internship practitioners and professionals. In this section we provide a brief review of insights about online internships from these perspectives.

Tips and guides from postsecondary professionals

In one of the more instructive documents from practitioners, a conference presentation about online internships in the library sciences, Goldman (2011) argued that one of the key issues that faculty and employers should recognize is that, "internships are not free labor." This point is made to emphasize how a good internship requires not insubstantial investments in time to plan an effective experience (i.e., articulate learning goals, identify outcomes of experience and assessment methods), and for academic and workplace supervisors to commit to regular mentoring. If a college and employer are not able or willing to commit to these fundamental aspects of effective instructional design, then Goldman (2011) argues that a college should not offer an online internship to their students.

That said, the author notes that online internships offer advantages including working with geographically isolated students, working students, and that outcomes such as e-portfolios can help students impress potential employers. Goldman (2011) also offered the following advice for students, which highlights the importance of motivation, self-advocacy, and self-regulated learning practices.

Advice for students considering an online internship.

- Make sure you have time!
- Make sure you manage your time well.
- Know your work habits and what you need to succeed.
- Don't be afraid to ask for things.
- You can't get all the archives experience you need from online internships

Source: Goldman (2011)

In more recent media coverage after the COVID-19 pandemic forced many internships online, career services professionals have also made recommendations to designers, students and employers. A senior executive at Handshake, which is a web-based app designed to help college students' career development, suggested

that online interns ensure that their communication technology is functional and that students attend all meetings prepared and ready to contribute (Buchwald, 2020). In this same article, a publisher of an online guide for college students suggested that students do, "virtual coffee meetings or lunches with other interns or even happy hours and drinking water if you're underage can really go a long way in terms of making lasting connections," which is important given the absence of in-person social interactions in an online internship (Buchwald, 2020). Additional suggestions from higher education professionals include having students advocate for themselves in an online internship and ask for regular meetings with and feedback from their supervisors (Eastern Washington University, 2020), that companies should be aware of potential biases and blindspots with respect to intern identities (NACE, 2020) and to prepare interns for their work assignments 1-2 months prior to the start of the internship itself (Handshake, 2020).

Tips, guides and approaches from employers

In briefly reviewing the ways in which employers themselves organize and offer online internships, it is important to recognize that for some employers an online internship is decidedly unlike the experiences offered by third-party vendors. For some employers, offering an online internship is simply a matter of taking those more traditional experiences and re-casting them as remote experiences, much like remote workers in a company essentially do the same tasks that they would be performing on-site. For example, the insurance company Humana has long had an active internship program, hiring college students in information technology, actuarial, analytics and finance and accounting positions. The head of Talent Management at Humana told a reporter that,

> "We are very well experienced at working from home. We've done it before. We did it before COVID-19, and we're very confident we can provide a meaningful experience. We have a plan that can be clearly articulated to interns so they are well equipped to understand the tasks and outcomes they are responsible for at the end of the summer" (Braga, 2020).

Additionally, some firms are attempting to create experiences for their online interns that bring them benefits enjoyed in a face-to-face workplace, especially opportunities for socializing and networking. For example, some companies are creating weekly social activities including "virtual escape room challenges" and randomly assigning interns to company executives for coffee chats, in order to reduce the feeling that a virtual experience is a socially isolating one (Buchwald, 2020). It is evident that there is a lot that an employer can do to make a virtual internship approximate an in-person experience, and that these efforts revolve around the prospect of creating community and social interactions among interns, employees and organizational leaders.

Framework for distinguishing different types of online internships

Reviewing these resources illuminated the fact that in the universe of online internships, there are a wide range of program types and experiences available to students, and that just as with face-to-face internships, there is no single monolithic type of online internship. Instead, we found that whether the internship is offered

There is no single monolithic type of online internship, and that whether the internship is offered and mediated by employers or third-party vendors makes a big difference in the structure, nature, and potential outcomes of the experience.

and mediated by employers or third-party vendors makes a difference in the structure, nature and potential outcomes of the experience. In addition, we reiterate the importance of considering existing criteria (e.g., NACE and CCWT) for determining whether or not an internships – whether in-person or online – can be seen as a "legitimate" or high-quality experience, which means that in practice some forms of online internships (especially micro-internships) do not meet these criteria.

Based on criteria for legitimate or high-quality internships from NACE and CCWT, some forms of online experiences (e.g., micro-internships and course-embedded simulations) do not meet these standards and should not be considered internships.

It is important to note that we do not claim that each online internship opportunity fits neatly into one of these types, but instead we offer this framework as a way for stakeholders to better understand potential points of variability among online internship offerings (see Table 2).

Table 2. Framework for identifying different types of online internship programs

Points of Variation	**Categories**		
Host organization	Employer	Third-party vendor	
Program duration	4-40 hours (micro-internship)	2-4 weeks	1+months
Experiential learning standards	Meets NACE and CCWT standards for "legitimate" internship	Does not meet NACE or CCWT standards	

Host organization. There are primarily two types of organizations that host or mediate an online internship – employers or third-party vendors. In cases where employers are the primary agency through which students will interact, the internship is often a virtual version of a firm's traditional face-to-face program (e.g., Humana and Liberty Mutual). The duration and organizational structure of these employer-hosted online internships are determined by the employer, and they maintain complete control of most every aspect of the program.

In contrast, third-party vendors (e.g., Parker Dewey, Virtual Internships, CapSource, Symba) act as "middlemen" between employers and students, offering a platform for posting internship openings. While third-party vendors offering to connect students with employers have long been a part of the internship economy, especially for international programs, the field of online internships is unique in the large and growing number of companies acting as "middlemen" between firms and students. In some cases, these vendors actively structure key aspects of the internship program including recruitment and hiring, nature and type of supervision, and feedback mechanisms. At this time there is no research exploring potential differences in student satisfaction and/or outcomes between internships hosted by employers versus third-party vendors, and here we simply point out that this is a distinguishing factor between and among online internships available to college students.

Program duration. Another point of variation among different types of online internships also applies to traditional face-to-face internships – that of duration. On one end of the spectrum there are "micro-internships" that may be as brief as four hours. For these short experiences, there are necessarily limitations to the types of tasks students engage with, the nature of supervision and mentoring, the types of networking available (if any), and other elements typically associated with experiential learning. Again, little research exists on whether or not the duration of an internship impacts student outcomes, but here we hypothesize that the time that a student engages with a task, supervisor, and employer is an important variable in dictating the ultimate efficacy and impact of an internship.

Experiential learning standards. Finally, we draw attention to the fact that organizations such as NACE have articulated standards for what constitutes a "legitimate" or high-quality internship experience. These standards were developed in part as a response to the wide range of program quality in the field, to reduce the potential for exploitation of student labor, and to highlight the fact that fields such as the learning sciences have documented key elements of high-quality experiential learning. As a result, we argue that these standards should be applied to both face-to-face and online internships, and given the high bar represented by these standards with respect to task quality, nature of mentoring, connection to students' academic work, and socialization into professional cultures, it is likely that some forms of online internships do not meet the criterion set forth by NACE and CCWT. It is possible that terms such as "micro-internships" are sufficient to distinguish between a very short project-based internship and other experiences, but the field should also consider whether or not some experiences should not be assigned the label of "internship" at all.

Existing standards for legitimate and high-quality internships and experiential learning be applied to both face-to-face and online internships. This likely would result in some programs currently called "online internships" not meeting these standards.

Complicating this discussion, of course, is the likelihood that duration alone is insufficient for determining program quality, as some micro-internships may in fact provide a better experience for a student than a poorly designed two-month program. In raising this issue we are simply pointing out that standards for legitimate and high-quality internships do exist, and that they should be applied to distinguish different internship programs from one another.

Conclusions

In this review of the research literature on online or virtual internships, we sought to provide the field of higher education, experiential learning, and career development with a synopsis of this rapidly growing mode of providing internship experiences. One of the central findings of our study is that there simply is not much rigorous empirical research about online internships. While the literature on traditional face-to-face internships has considerable limitations (e.g., terminological inconsistency),

There is very little rigorous empirical research about online internships. Consequently, it is premature and inaccurate to claim that online internships confer similar advantages and positive outcomes for students as traditional in-person internships.

researchers have consistently demonstrated that well-designed internships have positive impacts on college student academic, developmental, and labor market outcomes (see Hora, Wolfgram & Thompson, 2017). However, given the lack of research on online internships, it is premature and inaccurate to claim that they automatically confer similar advantages and positive outcomes to college students.

The nascent literature on online internships, however, does point to several findings that should be explored in greater detail in future research. Given the short duration of many online internships, the relationship between program length and other features of an internship (e.g., mentoring, task quality) and student outcomes should be studied in the future (Jeske & Linehan, 2020). With some studies indicating the importance of student interns being provided with clearly stated goals and expectations for their internship and consistent advising by both academic and organizational mentors (Dotson & Bian, 2013), the specific types of supervision required to make an online internship effective warrants additional study. Finally, with studies highlighting the importance of student interns' being self-motivated and self-regulated learners (Black & Bachman, 2007; Medeiros et al., 2015), research on the specific types of meta-cognitive aptitudes best help students succeed in an online internship should be conducted.

In addition to documenting the scope and nature of existing research, our review revealed that considerable variation exists in the modality such that the term "online internship" masks considerable variation. This state of affairs also applies to traditional face-to-face internships, where program elements such as duration and the quality of mentoring can vary considerably from employer to employer, and another layer of complexity is introduced when the internship is mediated by and conducted remotely through communication technologies. Consequently, understanding differences among types of online internships is a critical first step in improving the field's knowledge about these increasingly prominent programs in the higher education landscape.

Just as research has documented inconsistent use of terminology to describe and define virtual learning environments (e.g., e-learning, online learning, distance learning)(Moore, Dickson-Deane & Gaylen, 2011), it is also apparent that researchers of online internships use a variety of terms to describe different types of experiences. This is not simply a matter of semantics, as the use of different labels also include different expectations and perceptions about the nature and quality of these different modalities (Moore, Dickson-Deane & Gaylen, 2011), and the field of higher education should be wary about the label of "online internship" being applied to any type of work-based or work-integrated learning experience that also happens to take place in a virtual environment.

Recommendations for students, higher education professionals and employers

Based on our review of the empirical and practitioner literatures about online internships, we offer the following recommendations for students, postsecondary professionals and employers. These recommendations are grounded in criterion offered by NACE and CCWT regarding legitimate and high-quality internships as well as insights from papers and reports reviewed for this manuscript.

What students should do when pursuing an online internship

- Determine whether a short-term micro-internship or a longer-term internship program is desirable, while recognizing the pros and cons of each modality;
- Reflect on your ability to self-monitor and self-regulate your own work schedules and habits, seeking ways to improve them if these are not a strong suit;
- Ensure that you have sufficient information and communication technologies (e.g., laptop, internet access) and if not, seek assistance from your college and/or the host organization;
- Do background research on the host organization, ensuring that they are a legitimate organization;
- Ensure that the internship provider or host has a clear plan for your work and supervision; and,
- Seek opportunities with the internship host and/or your college for networking with other interns, professionals at the host organization, or alumni at your institution.

What higher education professionals should do when offering online internships

- Ensure that all students recognize the pros and cons, strengths and limitations, and other details regarding different types of online internships (e.g., micro-internships versus traditional internships offered remotely);
- When advocating for or advertising online internships, ensure that organizations are legitimate and that appropriate legal protections are in place (e.g., insurance, intellectual property agreements, etc.);
- Create procedures for receiving and then handling student complaints about harassment, discriminatory behavior, and other workplace-related issues;
- Create a diverse range of online internship opportunities that accommodate students' needs that include ambulatory, intellectual and other types of disabilities;
- Offer a pre-internship orientation for students where issues such as sufficient information and communication technologies, the importance of self-regulation and self-monitoring, professionalism in a remote environment, how to self-advocate, how to deal with harassment and/or discrimination, and related topics are addressed prior to the internship;
- Converse with organizations that have traditionally offered face-to-face internships to see if they can provide online internships, and if not, offer assistance in making the conversion from face-to-face to online;
- Create opportunities for students to regularly check-in with career advisors about the progress and quality of their online internship;
- Collect feedback from students about their experiences with online internships and continually improve how your college offers and supports them; and,
- Provide opportunities to supplement students' development of social and professional networks such as connecting student interns with alumni in their disciplines, holding virtual "coffee chats," and other ways to approximate the benefits of a face-to-face internship.

What employers should do when creating online internships

- Consider ways to offer traditional face-to-face internships in an online environment, instead of offering micro-level projects;
- Determine if your organization has meaningful tasks and/or projects for students to perform, and if they represent a real learning opportunity for the student;
- Ensure that any legal issues or concerns (e.g., intellectual property rights) are addressed and conveyed to the student and/or host institutions;
- Ensure that trained mentors are on staff who can supervise the student throughout their internship, and that these mentors are also proficient at working with employees and/or interns across different racial and ethnic groups, gender identities, disability statuses, and other individual attributes and identities;
- Ensure that your organization has sufficient information and communication technology and protocols in place to host a remote intern;
- Hold a pre-internship orientation with students that includes information about company culture, clearly stated objectives and expectations for their work, opportunities for networking, and to answer any questions students may have; and,
- Provide opportunities for the student to provide feedback about their experience and engage in continuous improvement for future iterations of the program.

Next Steps

Given the growing prominence and availability of online internships, particularly as the impacts of the COVID-19 pandemic re-shape the landscape of experiential learning for college students, it is critical that the field of higher education expand the evidentiary base on the nature and efficacy of these programs. In building an evidentiary base on online internships, we urge scholars to engage in both basic and applied research on the topic, and address questions such as:

- What are the impacts of online internships on student academic, psychosocial, health, and labor market outcomes?
- To what degree are low-income, first-generation college students, students from marginalized backgrounds, and working students participating in online internships?
- How, if at all, does the duration of an online internship influence student satisfaction and outcomes?
- What is the nature of supervision, task quality, and professional network development within different types of online internships?

As more college students pursue online internships, which remain a veritable “black box” of an educational experience, the educational research community will need to closely scrutinize whether online forms of work-based learning are effective, equitable and truly educational.

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