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Optimizing the Faculty Experience for Institutional Success: Practical Approaches for Minimizing Microfrustration

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Introduction

Across institutions of higher education, faculty share the sense that they are being asked to do more for less (American Association of University Professors, 2023; National Education Association, 2022; Quinn, 2023). The repercussions of this workload-to-compensation imbalance are significant. Feelings of being overworked and underpaid contribute to low morale, leading to burnout, and ultimately resignation for some (Flaherty, 2022; Kaminski & Geisler, 2012; McCandless et al., 2023; McClure & Fryar, 2022).

Despite the cascade of negative effects created by the workload-to-compensation imbalance, most institutions have made little headway in correcting it. This impasse is attributable to several factors: a lack of state and federal funding; changing attitudes about higher education and demographic shifts that have reduced income generated by enrollment; and mismanagement of funds by university leadership (Grawe, 2018; Hoover, 2020; Smith, 2023; Western Interstate Commission for Higher Education, 2020). Individually, each of these issues would present a significant obstacle to correcting the workload-to-compensation imbalance and improving faculty well-being, but, in combination, they have made the problem virtually intractable.

Taking into consideration the obstinacy of recalibrating the workload-to-compensation ratio, faculty leaders and administrators would benefit from looking internally for ways to enhance faculty morale. In this article, I argue that one area they could do so is in the mitigation of microfrustration—a small feeling of frustration caused by a minor obstacle that delays accomplishment of the primary task. As I will show, microfrustrations compound into major problems. I substantiate these claims by further examining the workload faculty carry and exploring the role microfrustration plays in exacerbating that workload. I then go on to outline the outsized negative effects on faculty mental health and emotional well-being caused by microfrustrations, which in turn undermine institutional priorities. Finally, I provide ten simple, practical strategies and techniques for reducing microfrustration. All of this is put forth to complement other efforts intended to enhance faculty morale and support student success.

Unacknowledged Support Tasks in Faculty Workload

For the long-term well-being and sustainment of higher education, it is imperative that the skewed workload-to-compensation ratio be recalibrated. Until this is accomplished, no amount of internal enhancements or changes will result in the lasting improvement of faculty morale and increased

sense of worth that is currently required. Nevertheless, even if the longstanding issues that prevent this necessary correction were miraculously resolved tomorrow, the prevailing framework for a faculty member's workload fails to comprehensively address the multitude of everyday tasks they are required to accomplish in order to get that work done.

For most faculty, workload is conceptualized as the outcome of the time and energy they dedicate to teaching, service and scholarship. And there have been several heuristics designed to ostensibly measure for each of these (Dennison, 2012; Fitzpatrick et al., 2016; Griggith & Altinay, 2020; Porter & Umbach, 2001). Despite the suggestions of empiricism these formulas project, none can truly overcome the fact that the variables associated with faculty work are so innumerable and incommensurate that calculating the actual level of productivity in the areas of teaching, service and scholarship is subjective at best. What is the difference in energy and time for a Full Professor lecturing to 100 students once a week compared to an Assistant Professor leading 10 students in a course with an intensive service learning project? Who works more, a Department Chair overseeing 6 tenured faculty members or a Program Director leading 12 lecturers? Which requires more work, a 4,000-word article in a premier disciplinary journal or a 6,000-word article in a less prestigious journal? For some, the answers might be apparent, but for many they are not.

Further complicating actual measurements of faculty workload is the invisible labor expected from some faculty members. It has been well-documented that women and BIPOC faculty members are often expected to participate in emotional labor at rates much higher than their white, male counterparts, (Blair-Loy & Cech, 2022; Gordon, et al., 2022; O'Meara et al., 2018; Rowley & Wright, 2023; Truong, 2021). For many, this type of emotional work is far more demanding than what's encompassed by the teaching, service and scholarship model. Furthermore, not only is this work virtually immeasurable with any kind of precision, there is no category in the triptych to which it can explicitly be assigned.

Another type of invisible labor that is performed by every faculty member in higher education is comprised of all the small but required support tasks necessary to actually teach, serve and create scholarship. These off-the-record support tasks involve a range of obligations. They include things like completing reimbursement documentation, obtaining access to buildings and rooms, securing meeting spaces, acquiring parking permits, aligning course materials with the library and bookstore, and the maintenance of technological resources. When the processes for these seemingly minor undertakings are clear and manageable, they require time and energy; however, when they are poorly designed or lack clarity, they can significantly prolong the time and require more-than-necessary cognitive bandwidth, ultimately hindering completion of the primary task.

A common scenario highlights this claim. A professor needs to print a quiz to distribute in an upcoming class. At minimum, this action requires the faculty member to log on to a computer, locate the document, and print copies of it. These are all common and expected steps to employ a simple pedagogical tool. Yet, even in this routine task, the professor could encounter a host of time-consuming and energy-reducing problems: a password might need to be changed; a software update might need to be installed; a network drive might need to be mapped; a printer might jam—or worse yet—need a new toner cartridge. For many, these types of impediments happen just often enough that the exact processes for addressing them are not retained, or such as in the case of equipment malfunction, they require someone else's assistance. When these secondary and

tertiary obstacles arise, a seemingly simple task has now significantly increased in time and difficulty, causing frustration and stress.

There are many more examples of the frustrating, stress-inducing impediments one encounters when trying to accomplish the supportive tasks necessary to complete “real” work. Most everyone has experienced the delay and annoyance caused by a badly designed form, for instance, where space is too small to enter the expected information, or it is unclear whether text is supposed to be placed above or below the line. Likewise, the exasperation that comes from trying to locate what should be readily available information on a badly designed website is likely shared by many. Even the simple function of maintaining an email inbox can take up too much time and energy, causing us to become aggravated by the diversion it creates from teaching, service, and scholarship. These seemingly minor inefficiencies are ubiquitous for faculty working in contemporary institutions of higher education; yet no workload model or formula accounts for them or the harmful effects they have on faculty members and the institutions they work for.

Sludge, microstress and microfrustrations

While workload models and heuristics typically don’t account for the work required to overcome inefficient processes, two recently introduced concepts effectively characterize the trajectory of small annoyances leading to big problems: sludge and microstress.

Sludge

Cass R. Sunstein is a Harvard University law professor and chair of the technical advisory group on behavioral insights and sciences at the World Health Organization. In his 2021 book, *Sludge: What Stops Us from Getting Things Done and What to Do about It*, Sunstein coined the term "sludge" to illustrate the everyday inefficiencies that hinder us from achieving our goals. He explained that sludge should be “understood to consist of frictions that separate people from what they want” (p. 4). His analogy to a viscous, slow moving mixture of liquid and solid aptly captures the obstructive nature of the myriad small but exasperating obstacles one encounters when they try to get something done. Just as actual sludge impedes movement, figurative sludge leaves us feeling stuck and unable to accomplish what we want to accomplish at the speed we believe it should be accomplished. Sunstein provides numerous examples, including long wait times, duplicative procedures, and confusing websites. In the workplace, sludge includes these things but also things like requirements for seemingly unnecessary reports, expectations to fill out badly designed forms, and the completion of ill-conceived training modules.

One obvious outcome of sludge, then, is a reduction in productivity. This alone should be cause for its remedy. Nonetheless, when sludge becomes a persistent and recurring problem, it can be exceedingly detrimental. Left untreated, sludge erodes morale and undermines well-being, which in turn causes amplified feelings of annoyance and irritability. In the workplace, sludge can lead to decreased productivity, financial loss, heightened tensions, and ultimately to resentment toward the organization and those who populate it. Most troubling is that persistent sludge signals undervaluation of an individual's time, effort, and contributions, diminishing their self-worth and sense of significance, leading to an actual existential crisis. As Sunstein (2021) concludes, “Sludge

infringes on human dignity. It makes people feel that their time does not matter. In extreme cases, it makes people feel that their lives do not matter" (p. 109).

Microstress

In their book, *The Microstress Effect: How Little Things Pile Up and Create Big Problems—and What to Do about It*, researchers Cross and Dillon (2023) outlined a sludge-related concept: microstress. Derived from hundreds of interviews and studies of various workplaces, the researchers defined microstress as "tiny moments of stress triggered by people in our personal and professional lives" (p. 7). There are countless sources of microstress, such as arriving late to an appointment, forgetting to plan for dinner, and simple miscommunication with a partner.

In the context of work, microstress stems from communicating with unpredictable leaders and unreliable colleagues. In fact, Cross and Dillon (2023) point out that in contemporary work settings, the largest source of microstress comes from a combination of the numerous communication channels we use with the expectation of being always-connected. Thus, poorly written emails can cause microstress. A supervisor's failure to fully explain the expectations for a project can cause microstress. So, too, can a co-worker's failure to complete a simple request in a timely manner.

Consider the scenario where a colleague takes longer than expected to fulfill a request for some information. This delay results in the postponement of a larger project dependent on this information. Consequently, the requesting individual fills the gap and rushes to meet the original deadline but compromises the project's quality by doing so. Obviously, this would be stressful, but it also sets a precedent for the colleague, indicating that they do not take requests or deadlines seriously. As a result, the requesting individual becomes bitter and resentful towards their colleague, fostering reluctance to collaborate with them in the future, and thereby undermining the institution's larger goals. Most importantly, a sense of disrespect and undervaluation emerges. And, once these feelings arise, the negativity extends beyond the workplace, creating more stress and causing harm in a person's personal life.

Due to its small size and subtle nature, microstress and its disproportionate effects can be challenging for individuals to discern. Few would think to attribute the unhappiness they are experiencing in their personal life with a colleague being slow to fulfill a request. However, like sludge, microstress has a much more profound influence on mental health and emotional well-being than the ostensibly diminutive prefix "micro" suggests. As Dillon and Cross (2023) substantiated, "Microstress seeps into our thoughts, saps our energy, and diverts our focus. Little by little, it's stealing our lives" (p. 3).

Microfrustration

Sludge and microstress are two interconnected concepts that shed light on the impediments to productivity and well-being in both personal and professional spheres. Effectively, there is an interdependency between the two, as sludge is often a source of microstress. The relentless friction and frustration caused by sludge contribute to the accumulation of microstress. And the resulting combination is a critical factor to consider when evaluating the broader issue of productivity and personal well-being in any organization.

Considering how the two are intertwined, I maintain that "microfrustration" is a useful term for describing the symbiotic nature of sludge and microstress. "Frustration" denotes a thing that prevents progress, as in the sentence, "A minor frustration arose from the internet running slow." The word "frustration" in this sense is analogous with "sludge." But "frustration" also denotes the feeling one experiences from an inability to do something, such as in the sentence, "Her frustration grew as she struggled with the door." "Frustration" in this sense is akin to "stress." The prefix "micro" maintains the diminutive size of both. Thus, the portmanteau "microfrustration" denotes obstacles to progress as well as the feeling of aggravation elicited by encountering them, while also maintaining the diminutive nature of each.

The High Costs of Microfrustration

While the primary cause of faculty dissatisfaction lies in the imbalance between compensation and workload, the contributing factor of microfrustration should not be underestimated. Microfrustrations compound into serious detriments to faculty mental health and emotional well-being. They are the proverbial "thousand cuts" that lead to a figurative demise. And, in the realm of higher education, the consequences can be seen in ever-increasing reports of burnout and associated resignations.

Burnout is "a state of emotional, mental, and often physical exhaustion brought on by prolonged or repeated stress" (Burnout*,* 2023). Recent research has shown that there has been a significant rise in faculty burnout (Herbert, 2019; McClure, 2021; McClure & Fryar, 2022; Sell, 2023; Lederman, 2022; Pettit, 2021; Pope-Ruark, 2022). While the primary cause of faculty burnout is attributable to the workload-to-compensation imbalance, it's also derived from the circumstances that allow microfrustrations to prevail in institutions of higher learning. Colleges and universities are not businesses, where time is money and efficiency is paramount. Thus, the impetus to improve processes to heighten output is rarely present. Nonetheless, without this focus on mitigating inefficiency, microfrustrations can proliferate and remain unchecked in institutions of higher education for years.

In addition to the toll burnout takes on individual faculty member's well-being, it results in resignations that undermine larger institutional goals and long-term stability. A recent study produced by *The Chronicle of Higher Education* and Fidelity Investments (2020) found that approximately one-third of faculty members surveyed are considering changing careers or retiring (p. 11). This loss of experienced educators can critically damage an institution (Dolezal, 2022; Jaschik & Lederman, 2022; Zahneis, 2023). New faculty might be unwilling to replace them, as competitive candidates are likely to apply elsewhere. Equally, prospective and current students may interpret institutional instability as a lack of commitment, potentially prompting them to seek education elsewhere, and thereby deterring future enrollment. Consequently, this cycle perpetuates a decline in the overall success and reputation of the educational institution. Just as microfrustration creates a ripple effect that damages an individual's personal well-being, so too does it have an outsized effect on the very institutions those faculty who suffer from untreated microfrustration work at.

Microfrustration Reduction Strategies

Addressing microfrustration serves as a solution to boost faculty morale, reduce burnout and prevent resignations—both as a short-term measure alongside ongoing pay and workload adjustments and as a long-term strategy for creating a more positive work environment in institutions of higher education. Considering the pervasive negative effects of microfrustration, institutional leadership would be wise to implement strategies intended to diminish it. Admittedly, each institution will have its own unique microfrustrations; however, the following toolbox contains general strategies and techniques to alleviate them and can be applied and adapted to suit an institution's distinctive needs.

Toolbox – Strategies & Techniques

1. Recognize, acknowledge, and inventory

The initial and crucial first stage of microfrustration reduction is to acknowledge its presence, recognize its substantial impact on faculty morale, and understand how it connects to the overall health of the institution. There are general areas where one is likely to find microfrustrations. There will also be microfrustrations that are idiosyncratic and felt only by those who work at a certain institution. Because microfrustration can manifest in diverse ways, it's important that an inventory of microfrustrations be performed at the institution initially. This could be informal, such as discussions between leadership and faculty members, or formal, as in a survey or questionnaire dispersed across campus. Once the concept of microfrustration is introduced, it becomes that much easier to identify and collect instances of, and therefore that much easier to alleviate.

2. Reconsider evaluation and workload models

Recognizing, acknowledging, and inventorying microfrustrations should produce a more meaningful awareness of the actual work faculty do, which in turn should justify their inclusion and consideration in faculty evaluations. As any faculty member can attest, managing a class extends beyond merely preparing course materials and assignments; it also involves additional tasks like securing classroom access, printing necessary documents, and setting up classroom technology. Similarly, participating in a committee, presenting at a conference, and creating scholarship for publication also entail countless ancillary support tasks—all of which increases the likelihood of microfrustration.

When assessing faculty workload within the conventional framework of teaching, service and scholarship, it's crucial for everyone involved to recognize the numerous hidden supportive tasks inherent in these activities. Faculty members must be mindful of these tasks, but it's equally important for leadership to integrate them into workload models and evaluations. Moreover, institutions should reconsider many of their internal processes, and strive to clarify and optimize them. Doing so can reduce the prospect of microfrustrations arising in the first place.

3. Confront email overload and improve communication

Email overload persists as a significant problem for those who work in higher education (Halupa & Bolliger, 2020; Wood & Kraskowski, 2020). Paradoxically, the constant influx of messages disrupts the prioritization of crucial communications, leading to confusion and missed opportunities. Moreover, as most know, some colleagues and administrators simply are not good users of email. Either they send too many, write too much, or compose unclearly. Thus, it is useful to establish email communication guidelines to promote the creation of necessary, concise, and action-oriented emails. Training sessions focused on effective email communication to proactively address these issues can help circumvent the microfrustration that's created by a seemingly incessant stream of emails.

The use of alternative communication tools, such as instant messaging for informal issues, can also help alleviate the burden of overflowing inboxes—provided that this additional channel itself doesn't become a source of microfrustration. Additionally, when executed efficiently, centralized communication streams, like weekly newsletters or regularly updated internal webpages, can effectively mitigate the burden of email and reduce microfrustration.

4. Reevaluate the use of traditional recommendation letters

Faculty members often find themselves tasked with writing various documents that go beyond scholarly work. This includes composing recommendation letters for students seeking employment or applying to graduate school, as well as writing letters of support for colleagues pursuing promotions or new job opportunities. For faculty in administrative roles, such as program directors or department chairs, the frequency of these letters can be even more substantial. Not only is writing these letters time-consuming, many suspect that the letters are merely skimmed by their intended audience. Exacerbating the problem even further are the inherent biases embedded in the many letters written in this genre, particularly in terms of gender (Houser & Lemmons, 2018; Machen et al., 2023; Madera et al., 2019; Newkirk-Turner & Hudson, 2022; Morgan et al., 2013).

The time spent writing these letters, uncertainty about their readership, and their overall unreliability create a strong potential for microfrustration. Therefore, it would be wise to explore alternatives. Some institutions have turned to surveys and questionnaires, at least for the early review stages of the opportunities recommendation letters are typically requested for. If well-designed, these forms not only reduce microfrustration, but can also offer a more reliable and less biased way to support colleagues and students.

5. Create and utilize well-designed forms

For forms to replace traditional letters of recommendation and similar missives as a way to mitigate microfrustration, it is important they be well-designed. Good forms significantly expedite processes. Conversely, as anyone who has struggled to write in a space too small to fit the requested information or had the entire layout of a document change when they add text electronically knows, badly designed forms can certainly cause microfrustration.

Whether print or electronic, good forms can greatly reduce microfrustration; however, there is more potential to mitigate microfrustration with the latter. Electronic forms minimize the issues often encountered in paper-based systems, such as the handling of signatures and delivery. They also result in cost savings created by the reduction of the materials needed for physical paperwork—paper, toner, equipment maintenance—which also entails the added benefit of supporting sustainability. Electronic forms also facilitate the repeated entry of recurring data, thereby reducing errors and miscommunication. A number of programs exist today that help users make electronic forms. Many of these are intuitive and easy to use, allowing even non-experts to create useable, microfrustration-reducing forms.

6. Reduce the number of meetings and reconsider their mode

Many meetings are conducted out of habit rather than necessity. This is certainly true of the duration of meetings, which always seem to fill the time allotted, regardless of what that timespan may be. New research suggests that scheduling meetings in 25 and 50-minute increments, instead of the usual 30 and 60-minute increments, enhances their value because it allows participants time to regroup, refocus and travel to their next meetings without any loss of efficacy (Gallo, 2020; McGeorge, 2019). As anyone who's tried to refocus and prepare as they rushed from one meeting to the next knows, back-to-back meetings can be the cause of microfrustration.

Other effective techniques for mitigating microfrustration induced from meetings include clearly defining the purpose of each meeting by sending out agendas in advance, using alternative communication channels for less important matters, regularly evaluating the necessity of meetings, and making meetings virtual rather than face-to-face when possible. Implementing these approaches can significantly reduce meeting overload and diminish all of the associated microfrustration, allowing faculty to devote their time and energy to their essential academic responsibilities.

7. Embrace open educational resources

Open Educational Resource (OER) usually refers to an online textbook, but it can be any type of educational material that is free, accessible, adaptable, and shareable. The use and availability of OERs has grown rapidly in recent years because they offer a host of benefits. OERs save students money, they're easy to update with new content, and they can be adapted (font size, color, and alt text for images) to ensure increased accessibility and inclusivity for a diverse range of learning needs. They also help reduce microfrustration for faculty, because their use circumvents the procurement delays that can occur with traditional textbooks and dealing with institutional bookstores. By embracing OERs, and with the support of leadership, faculty can provide up-to-date, accessible course materials while promoting cost savings. And they can do all this without the usual microfrustrations caused by traditional processes for assigning, ordering, and providing textbooks to students.

8. Consider centralized booking

For many institutions, space can be scarce. This can make securing the rooms needed for a number of facility activities—meetings, student events, workshops, presentations, lab use—a

microfrustration-inducing chore. By either implementing an intuitive, centralized booking system or having a booking liaison, institutions of higher education can establish transparent booking policies that make the process for securing space more straightforward and understandable. The real-time availability information that is afforded by either method allows for easy room selection and scheduling. Whether it be through a person or a self-accessed system, efficient booking processes can lessen the microfrustration associated with room and resource scheduling.

9. Automate where possible

Recurring semesters and routine course offerings, along with cyclical annual requirements, are cause for many repeating, sometimes even duplicative, tasks in higher education. Learning management system shells need to be populated every semester; course schedules need to be built; spaces need to be secured; and personnel review documents need to be completed each year. Automating these processes can greatly reduce the time and energy they require, as well as the likelihood of microfrustration.

Specific automation processes will depend on institutional needs, but one helpful general technique is to default to "opt out" rather than "opt in" (Sunstein, 2021). For instance, assume that every faculty member who required a parking pass last year will need the same for this year. Instead of requiring all faculty members to opt in and renew their parking passes annually, require only those who have had a change in circumstances to opt out and adjust or cancel their parking pass. Making opt in the default assumption reduces the work required by faculty, as well as all those in the parking and safety office, which in turn saves time and energy while precluding potential microfrustration. Opt in as default could be applied to many recurring and repeating tasks with similar effects.

10. Continue collaborating and auditing

One inevitable outcome of focusing on reducing microfrustration is collaboration between disparate groups who work at and comprise the institution. To reduce microfrustration, institutional leadership and faculty will have to work together, but both will, in turn, be required to collaborate with staff members who they may have had only limited dealings with previously. As the above techniques suggest, the mitigation of microfrustration will likely require the involvement of information technology staff, human resources personnel, administrative assistants, and many others who support the institution.

What's also implied in the strategies and techniques outlined above is the potential for new microfrustrations or the recurrence of previously mitigated ones. Consequently, it will be necessary to audit for microfrustration on a regular basis and continue to collaborate to diminish it. This can be achieved through a change in an institution's zeitgeist, where microfrustration reduction becomes embedded in an institution's culture, or it could be something more formal, like a microfrustration reduction liaison or committee. Regardless, regular audits accompanied with collaborative work to evaluate and reduce microfrustration must be ongoing.

Conclusion

Efforts must be made to improve faculty well-being, as the current circumstances of low morale, burnout, and resignations are untenable for the long-term success of any institution of higher education. The primary way to do so is through a rebalancing of the workload-to-compensation ratio. Nevertheless, more pay and less work alone will not help ensure that faculty feels valued if they are constantly thwarted from engaging in teaching, service, and scholarship from persistent, unchecked microfrustration. Leadership at institutions of higher education would be wise, then, to include efforts to reduce microfrustration as a part of a comprehensive strategy to support faculty, enhance morale, and enrich the entire institution. The ten recommendations offered above are intended to help start this process. They provide a broad strategy comprised of general techniques for reducing microfrustration. While some of the steps could involve initial expenditures, the potential return on investments is so high that it justifies costs. By addressing microfrustration, institutions of higher education can improve faculty well-being, which, in turn, benefits the institution itself, as well as the students everyone serves.

References

American Association of University Professors. (2023). *The annual report on the economic status of the profession, 2022-23*. https://www.aaup.org/report/annual-report-economic-status-profession-2022-23

Blair-Loy, M., & Cech, E. A. (2022). *Misconceiving merit: Paradoxes of excellence and devotion in academic science and engineering*. Chicago, IL: The University of Chicago Press.

Burnout. (2023). *Psychology Today*. https://www.psychologytoday.com/us/basics/burnout

Chronicle of Higher Education & Fidelity Investments. (2020). *On the verge of burnout: Covid-19's impact on faculty well-being and career plans*.

Cross, R., & Dillon, K. (2023). *The microstress effect: How little things pile up and create big problems—and what to do about it*. Boston, MA: Harvard Business Review Press.

Dennison, G. M. (2012). Faculty workload: An analytical approach. *Innovative Higher Education, 37*, 297-305.

Dolezal, J. (2022). The big quit: Even tenure line professors are leaving academe. *The Chronicle of Higher Education*. https://www.chronicle.com/article/the-big-quit?

Fitzpatrick, L. R., Millette-Snodgrass, C., & Atef, E. (2016). A novel mathematical model for determining faculty workload. *American Journal of Pharmaceutical Education, 80*(9), 152.

Flaherty, C. (2022). Calling it quits. *Inside Higher Ed*. https://www.insidehighered.com/news/2022/07/05/professors-are-leaving-academe-during-great-resignation

Gallo, C. (2020). The 50-minute rule makes virtual meetings more productive, according to neuroscience. *Forbes*. https://www.forbes.com/sites/carminegallo/2020/09/29/the-50-minute-rule-makes-virtual-meetings-more-productive-according-to-neuroscience/?sh=7d51871c14ff

Gordon, H. R., Willink, K., & Hunter, K. (2022). Invisible labor and the associate professor: Identity and workload inequity. *Journal of Diversity in Higher Education*.

Grawe, N. D. (2018). *Demographics and the demand for higher education*. Baltimore, MD: John Hopkins University Press.

Griffith, A. S., & Altinay, Z. (2020). A framework to assess higher education faculty workload in US universities. *Innovations in Education and Teaching International*, *57*(6), 691-700.

Halupa, C., & Bolliger, D. U. (2020). Technology fatigue of faculty in higher education. *Technology, 11*(18), 16-26.

Hebert, E. (2019). Faculty morale: A perspective for academic leaders. *Kinesiology Review, 8*(4), 305-311.

Hoover, E. (2020). The demographic cliff: 5 findings from new projections of high-school graduates. *The Chronicle of Higher Education*. https://www.chronicle.com/article/the-demographic-cliff-5-findings-from-new-projections-of-high-school-graduates

Houser, C., & Lemmons, K. (2018). Implicit bias in letters of recommendation for an undergraduate research internship. *Journal of Further and Higher Education, 42*(5), 585-595.

Jaschik, S., & Lederman, D. (2022). *2022 Survey of College and University Chief Academic Officers: A survey by Inside Higher Ed and Hanover Research*. *Inside Higher Ed* and Hanover Research.

Kaminski, D., & Geisler, C. (2012). Survival analysis of faculty retention in science and engineering by gender. *Science, 335*(6070), 864-866.

Lederman, D. (Host) (2022, May 3). Turnover, burnout and demoralization in higher ed. [Audio podcast transcript]. In *The Key*. *Inside Higher Ed*. https://www.insidehighered.com/audio/2022/04/14/ep77-turnover-burnout-and-demoralization-higher-ed

Machen, J. L., Gandhi, S. M., Moreland, C. J., & Salib, S. (2023). Promoting equity in letters of recommendation: Recognizing and overcoming bias. *The American Journal of Medicine, 136*(12), 1216-1221.

Madera, J. M., Hebl, M. R., Dial, H., Martin, R., & Valian, V. (2019). Raising doubt in letters of recommendation for academia: Gender differences and their impact. *Journal of Business and Psychology, 34*, 287-303.

McCandless, S., McDonald, B., & Rinfret, S. (2023). Walking faculty back from the cliff. *Inside Higher Ed*. https://www.insidehighered.com/opinion/views/2023/08/21/institutions-must-take-faculty-burnout-seriously-opinion

McClure, K. R. (2021). Higher ed, we've got a morale problem—and a free t-shirt won't fix it. *EdSurge*. https://www.edsurge.com/news/2021-09-27-higher-ed-we-ve-got-a-morale-problem-and-a-free-t-shirt-won-t-fix-it

McClure, K. R. & Hicklin Fryar, A. (2022). The great faculty disengagement. *The Chronicle of Higher Education*. https://www.chronicle.com/article/the-great-faculty-disengagement

McGeorge, D. (2019). *The 25 minute meeting: Half the time, double the impact*. Hoboken, NJ: Wiley.

Morgan, W. B., Elder, K. B., & King, E. B. (2013). The emergence and reduction of bias in letters of recommendation. *Journal of Applied Social Psychology, 43*(11), 2297-2306.

National Education Association. (2022). *Higher education faculty pay: A post-pandemic look at faculty salaries*. https://www.nea.org/resource-library/educator-pay-and-student-spending-how-does-your-state-rank/he

Newkirk-Turner, B. L., & Hudson, T. K. (2022). Do no harm: Graduate admissions letters of recommendation and unconscious bias. *Perspectives of the ASHA Special Interest Groups, 7*(2), 463-475.

O'Meara, K., Jaeger, A., Misra, J., Lennartz, C., & Kuvaeva, A. (2018). Undoing disparities in faculty workloads: A randomized trial experiment. *PLoS One, 13*(12).

Pettit, E. (2021). Faculty members are suffering burnout. These strategies could help. *The Chronicle of Higher Education*. https://www.chronicle.com/article/faculty-members-are-suffering-burnout-so-some-colleges-have-used-these-strategies-to-help

Pope-Ruark, R. (2022). *Unraveling faculty burnout: Pathways to reckoning and renewal*. Baltimore, MD: John Hopkins University Press.

Porter, S. R., & Umbach, P. D. (2001). Analyzing faculty workload data using multilevel modeling. *Research in Higher Education, 42*, 171-196.

Quinn, R. (2023). Historic faculty pay increase still beaten by inflation. *Inside Higher Ed*. https://www.insidehighered.com/news/2023/04/07/historic-faculty-pay-increase-still-beaten-inflation

Rowley, K. M., & Wright, E. M. (2023). Navigating a professional minefield: Service workload, identity taxation, and department culture. *Kinesiology Review, 12*(4), 286-292.

Sell, A. J. (2023). Contextual factors associated with the morale of academic and support staff in universities. *Perspectives: Policy and Practice in Higher Education, 27*(2), 41-50.

Smith, M. D. (2023). The public is giving up on higher ed. *The Chronicle of Higher Education*. https://www.chronicle.com/article/the-public-is-giving-up-on-higher-ed

Sunstein, C. R. (2021). *Sludge: What stops us from getting things done and what to do about it*. Cambridge, MA: The MIT Press.

Truong, K. A. (2021). Making the invisible visible: Acknowledging faculty of color invisible labor. *Inside Higher Ed*. https://www.insidehighered.com/advice/2021/05/28/why-and-how-colleges-should-acknowledge-invisible-labor-faculty-color-opinion

Western Interstate Commission for Higher Education. (2020). *Knocking at the college door: projections of high school graduates through 2037*.

Wood, K. E., & Krasowski, M. D. (2020). Academic e-mail overload and the burden of “academic spam”. *Academic pathology, 7*.

Zahneis, M. (2023). Higher ed’s work-force-retention problems aren’t going away. *The Chronicle of Higher Education*. https://www.chronicle.com/article/higher-eds-work-force-retention-problems-arent-going-away

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Examining the Effectiveness of Corequisite Remediation at a Two-Year College

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The value of a college degree is well documented. A recent study published by Gallup, in partnership with the Lumina Foundation, examined economic and non-economic outcomes for adults with varying levels of educational attainment. Higher education is linked to better health and general satisfaction with life, increased civic engagement, stronger interpersonal relationships, and increased mental aptitude (Gallup, 2023). Bachelor's degree holders are 47 percent more likely to have health insurance due to their employability, resulting in a mortality gap between those with a degree and those without (APLU, n.d.; Case & Deaton, 2023). Despite the perceived value of higher education decreasing among US citizens, bachelor's degree holders will earn an average of $1.2 million more in their lifetime than those who only earn a high school diploma (Carnevale et al., 2021).

Unfortunately, many potential college students are found not to be college-ready. Nearly two-thirds of students at American community colleges lack academic skills in at least one fundamental subject area, resulting in the need to enroll in developmental education (Bailey, 2009; Bailey et al., 2010; Chen & Simone, 2016). Developmental education, sometimes referred to as remedial education, includes coursework designed to increase the academic skills necessary to be successful in college-level coursework (Boylan & Bonham, 2007). Despite being labeled as a response to the current failings of modern secondary education, developmental education dates back centuries (Arendale, 2002; Boylan, 1988). Over time, as college became more accessible to students, the demographics of students diversified to include larger populations of non-traditional students, females, students of color, and veterans, and developmental education evolved in an attempt to meet their needs (Arendale, 2002). Virtually every community college in the United States offers developmental education and, on average, delivers twice as many sections as public four-year institutions (Parsad & Lewis, 2004). Over the hundreds of years developmental education has been provided, and especially as it has grown in both need and demand, educators and institutions have tried to address this problem through various strategies and pedagogies.

Developmental education comes with a significant price tag. While literature and analysis are lagging, estimated total annual costs nationally range from $1 billion to $3.7 billion to $7 billion (Breneman and Haarlow, 1998; Noble, Schiel, & Sawyer, 2003; Pretlow & Wathington, 2012; Scott-Clayton, Crosta, and Belfield, 2012); whichever figure is used, it represents a huge expenditure. The burden of this cost is shared among many. Students pay tuition and fees for the coursework; if they qualify, and if it is available, they can utilize financial aid in the form of federal loans, grants, and private loans to pay for this coursework. Using federal dollars means using tax dollars to fund

developmental coursework that fails to provide progress toward a college degree (Bettinger & Long, 2005; Parsad & Lewis, 2004). Considering that only 28% of community college students who take a developmental course earn a college degree within eight years, the exorbitant cost coupled with the low degree completion rates creates a dire situation that must be addressed (Attewell, Lavin, Domina, & Levey, 2006).

Reform has occurred over the years in academic redesign and delivery. Many institutions have attempted to improve developmental education through various adjustments. Curriculum redesign, such as eliminating or combining multiple courses into a single course, aims to shorten the developmental education sequence. Changes to course placement practices, such as examining multiple placement test scores, high school GPA, and prior academic performance in the subject area, aim to allow for a more holistic view rather than a single moment in time with a single test score. Some colleges have relied more into curriculum redesign, enrolling students in college-level coursework along with a corequisite class to simultaneously fill the academic gap (Bailey et al., 2010; Cho et al., 2012, Edgecombe, 2011). The Community College of Baltimore County's Accelerated Learning Program is considered a national model for corequisite course design. The college's program of enrolling students in the college-level composition course and a strategically designed developmental corequisite course has been used across the United States since 2007 (Adams et al., 2009).

Statement of the Problem

Many colleges have transformed developmental education coursework by implementing corequisite remediation, generally referred to as Accelerated Learning Program. Corequisite remediation provides additional academic support to students enrolled in a modified college-level course designed to accelerate attaining the deficient academic skills necessary for success in future college-level studies. The corequisite remedial coursework model is intended to lessen the time to degree, reduce costs, and simultaneously focus on closing gaps in educational attainment among different groups.

Despite academic reform, there needs to be more research focusing on whether the various approaches to developmental education have increased student success. Early studies show corequisite remediation is more effective when examining subsequent college-level math and English course completion than multiple developmental education courses. Students earn higher course pass rates if enrolled in the corequisite model than those in the traditional developmental education course sequence. Additionally, corequisite students earn more credit hours than those not enrolling in corequisite coursework. (Cho et. al, 2012; Daugherty et al., 2018; Jenkins et. al, 2010).

However, there is a gap in the literature describing research comparing students who enroll in a corequisite English course to those who enroll in college-level English. Comparing these two student populations to one another is significant for multiple reasons. Students registered in corequisite coursework typically have higher tuition costs due to paying for additional credit hours and fees associated with the corequisite course. This could also lengthen the time to a degree depending upon the credit hours of the corequisite course. Finally, a corequisite course with more credit hours creates more pressure for successful completion. A course failure has a more significant negative

impact on GPA and the percentage of completed credit hours versus attempted credit hours, which could ultimately impact financial aid eligibility.

The problem to be addressed by this study was to examine the differences between students who enrolled in corequisite English remediation and students who enrolled directly in college-level English. The study specifically investigated persistence, degree completion rates, GPA, and completion of attempted credit hours during the first semester.

Purpose and Significance of the Study

The purpose of this quasi-experimental study was to examine differences between students who enrolled in a traditional, college-level English course and those students who enrolled in a corequisite English course when looking at degree completion and semester-to-semester persistence rates, first-term GPA, and the percentage of completed attempted credit hours. Propensity score matching was used to create a control group of students who enrolled directly in college-level English composition compared to the treatment group.

While there are reports of studies that contrast the efficacy of corequisite remediation to other models of remedial coursework delivery, there needs to be more research concerning the success of students who enrolled in corequisite remediation compared to those who enrolled in college-level coursework to examine its effectiveness on student success. Additionally, there may be socioeconomic ramifications for registering students in all models of developmental education that should be considered, including the stigma of labeling the student as not college-ready and the burden of the additional cost. Because corequisite remediation is designed to deliver a college-level class with further support, the course designs must be compared, and student success must be measured if persistence and graduation rates are to increase.

Literature Review

Theoretical Framework

The idea of academic momentum guided this study. Clifford Adelman (1999, 2006) presented three ways degree non-completion is steered by academic momentum. Adelman's theory describes the influence of earned credit hours, academic momentum, and general course success on degree completion. Additionally, Adelman's theory addresses a student's academic readiness and sociodemographic background as they relate to academic momentum and influence degree completion (Attwell et al., 2012).

Adelman's study of transcript data from the National Education Longitudinal Study of 1988 found that significant credit attainment within the student's first academic year was a strong indicator of the probability of degree completion. His longitudinal studies were conducted to determine if degree completion correlates to academic momentum (Attwell et al., 2012). Additional degree completion indicators he identified are lack of earning 20 credit hours within the initial academic year, immediate enrollment upon high school graduation, credit attainment during the summer, lack of penalty for withdrawals and no-credit repeat courses, and remedial course load (Adelman, 2006).

More recently, Jenkins and Bailey (2017) addressed academic momentum and examined why credit and gateway course completion momentum are significant indicators of student success. Calcagno, Crosta, Bailey, and Jenkins (2007) studied students at community colleges in Florida. Students who had enrolled in developmental English and passed the next college-level English course more than doubled their probability of earning their degree than those who did not register and pass the subsequent college-level English course. Examining community college students in Washington, higher degree completion rates were associated with students successfully passing college-level English and Math (Leinbach & Jenkins, 2008). The concept of gateway course completion, or the successful completion of college-level English and mathematics within the first academic year, further cements the importance of academic momentum as a construct.

This study focused on academic momentum related to corequisite remediation course delivery and student success. The study seeks to find differences in success between students who enrolled in corequisite remediation and those who enrolled directly in college-level coursework.

Cost of Developmental Education in the United States

Cost is one of the most significant complaints and concerns about developmental education. Nationally, the widely circulated annual cost for developmental education instruction and support is $7 billion (Scott-Clayton et al., 2014). Jimenez, Sargrad, Morales, and Thompson estimated the out-of-pocket costs for students and families at 1.3 billion dollars per year. Costs vary by state, as placement practices are not uniform nationwide. Out-of-pocket costs to students and families for developmental education were over $205 million in California and as low as $1 million in the District of Columbia (2016). Additionally, community college students enroll in developmental education much more than their four-year counterparts, accounting for as much as two-thirds of all developmental education enrollment (Bailey et al., 2010). Barry and Dannenberg calculated that students borrow $380 million for developmental coursework, which does not count toward academic degree completion requirements (2016).

Developmental Education Today

Nearly half of entering students at community colleges were found to be underprepared for college-level coursework and enrolled in developmental courses (Parsad et al., 2004; Bailey et al., 2010). Developmental education is not only a financial burden on the student but also a psychological one; a survey conducted by Strong American Schools found that most students thought they were college-ready. Students expressed frustration and embarrassment at being placed into developmental coursework (2008). By repeating courses with high school content, students are losing time towards earning their college degree and momentum.

The developmental education pipeline has significant leaks. There are no real successes or milestones that lend themselves to achievement. According to Bailey and Cho (2010), as much as 30 percent of students referred to developmental education courses never enroll. In a study of public two-year college students, 43 percent of first- and second-year students enrolled in at least one developmental education course (Horn & Nevill, 2006). Even years later, the National Center for Education Statistics reported that of the students who do enroll in developmental education

courses, as few as 49 percent complete all the developmental education courses they attempt, only 35 percent complete some attempted developmental educational courses, and 16 percent complete none or withdrew from their attempted developmental education courses (Chen & Simone, 2016).

While we know students who enroll in developmental education are less likely to earn their degree, exacerbated by a lack of consistency among policies and practices, it cannot be said that developmental education alone is the most significant contributing factor to retention and completion. However, there is a lack of evidence stating that developmental education helps students earn their degrees (Bailey, 2009). Jaggars and Bickerstaff (2018) noted that low student success rates in developmental education are impacted by three contributing factors – instructional methods in developmental education coursework, the length of the development course sequence, and placement test practices.

Developmental Education Delivery Methods

Developmental education delivery methods vary, and this study was designed to examine one such developmental education program. However, the various developmental education programs were reviewed to understand the differences in developmental education course delivery. Historically, developmental education is delivered as a series of semester-length courses offered sequentially. A sequence is generally defined as beginning with developmental course placement by assessment of individual academic skill set and ending with the completion of the highest-level developmental course, culminating in the enrollment of college-level coursework (Bailey et al., 2010; Jaggars et al., 2015). When considering the amount of developmental coursework, a student may be required to take, students who must take more are less likely to complete a degree (Jenkins et al., 2009; Bailey et al., 2010). Jaggars and Bickerstaff (2018) believed momentum was impacted by the length of the course sequence, considering how many students never take the subsequent college-level course.

Developmental course delivery models exist throughout the United States. Compressed, or accelerated courses, is a common approach (Edgecombe et al., 2013). In accelerated courses, a college combines developmental courses that traditionally require multiple semesters of enrollment into a single, higher number of credits course. The intent is to expedite the developmental academic requirements. Courses can be designed so that the first half of the semester delivers content from one developmental course, and the second half delivers content from the second developmental course. It is common for the same instructor to teach both accelerated courses to a cohort of students, allowing for deep relationships to develop between the students themselves and between the students and the instructor, subsequently creating additional support (Edgecombe et al., 2013). Chabot College implemented an accelerated English course that integrated reading and writing requiring no minimum placement test score. Studies showed that students who participated in the accelerated course and passed had higher pass rates in other coursework, and once accelerated, English completers have a higher college-level English completion rate than those students who took the more traditional developmental English course pathway (Hern, 2012).

Contextualization integrates the skills applicable to the student's academic and career interests into the developmental curriculum (Bailey et al., 2016). This model seeks to engage students early on in

their educational journey and students participating in accelerated and contextualized developmental coursework. One such program is I-BEST. Developed by the Washington State Board for Community and Technical Colleges, the program simultaneously delivers essential skill and occupational-focused content through a team-teaching approach. A 2010 study found that I-BEST students were 56% more likely to earn college credit, 13% more likely to persist year to year, and 26% more likely to make a credential than non-IBEST students (Juncos & Collins, 2015).

Modularized courses separate an entire developmental course's curriculum into distinct modules. Students must show mastery of each module before advancing to the next by passing computerized and customized interventions (Nodine et al., 2013). Some colleges adjust the module completion requirement by academic programs of study, thus reducing the amount of developmental curriculum required (Edgecomb et al., 2013). The start point is determined by placement testing, which results in customized modules (Juncos & Collins, 2015). Modularized courses rely heavily on technology, which may cause issues for students struggling to overcome that barrier (Ariovich & Walker, 2014).

Corequisite developmental courses allow students to enroll in college-level coursework with additional academic support (Complete College America, 2016; Schak et al., 2017). The corequisite model widely supports academically underprepared students as it does not use developmental coursework as a pre-requisite to college-level course enrollment and provides supplemental support (Belfield et al., 2016). By eliminating the pre-requisite requirement and focusing on the areas of academic skill deficiency, instructors can concentrate on strengthening the learning of the college-level material (Jaggars et al., 2014).

One of the most recognizable examples of corequisite developmental education is the Accelerated Learning Program (ALP) at the Community College of Baltimore County (Jaggars et al., 2015). Students whose placement test scores rank them in the highest level of developmental English may opt to enroll in ALP. Through this program, ALP students enroll in college-level English 101 alongside students whose placement test scores showed higher academic proficiency in English. ALP students participate in a supplemental course taught by the same instructor and are mentored by their non-ALP classmates (Juncos & Collins, 2015). ALP intends to eliminate a point of exit and reinforce college-level English skills with those skills retaught in developmental English. Students who participated in ALP sequencing at the Community College of Baltimore County earned more college-level credits than their non-ALP classmates (Jaggars et al., 2015).

Methodology

Randomization in educational research has been the most accepted method of studying the influence of an intervention or treatment. The Department of Education's support guide on educational research calls randomized control trials the "gold standard" for evaluating the effectiveness of a prescribed intervention (Davies et al., 2008; USDOE, 2003). However, conducting experimental design in education is difficult due to ethical implications and the cost. Despite the difficulties, the experimental design was traditionally the accepted approach in examining the effects of treatment within education. Unfortunately, research in education does not typically suit randomization and large-scale design due to the scenarios mentioned above (Grunwald & Mayhew, 2008). However, there are proponents of quasi-experimental design in education research despite

the inclination to recognize quasi-experimental design as a lesser method, especially when done correctly (Shadish et al., 2005).

Propensity Score Matching

Propensity score matching (PSM) is a way to conduct research in higher education through quasi-experimental design when the ability to assign true randomization is impossible. A propensity score is the probability that a person, or student, given chosen characteristics for comparison will be in the treatment group (Holmes, 2014; Rosenbaum & Rubin, 1983; Grunwald & Mayhew, 2008). PSM consists of multiple steps resulting in the creation of the control and treatment group.

PSM begins with choosing covariates or predictors of participation in the treatment or intervention. The selected covariates allow for a balance between the treatment and control group, and without balance between the groups, the accuracy of the comparison and inferences between the groups comes into question (Harris & Horst, 2016; Steiner et al., 2010). Logistic regression is the most common model for creating propensity scores to create a balancing score (Austin, 2011; Stuart, 2010; Holmes, 2014). Choosing covariates and searching for optimal balance is a repetitive process to ensure as few differences between groups as possible (Austin, 2011). After calculating the propensity scores, matching occurs. Multiple methods exist to create a control group, such as nearest neighbor matching, optimal matching, and exact matching. The most often used for match creation is near neighbor, with or without caliper adjustment, which is the adjustment of the distance between matched covariates (Austin, 2011; Harris & Horst, 2016). The match occurs, the two groups are created based on their propensity scores, and comparisons can occur (Austin, 2011; Rosenbaum & Rubin, 1983).

Research Methodology and Design

The data for this study came from a well-known and well-respected community college in metropolitan Detroit. The data set included 8,394 individual, de-identified records for first-time college students who took English Composition in their first term at the college between Fall 2016 and Fall 2022. A total of 1,573 students enrolled in corequisite English Composition (ENG 131A), and 6,821 enrolled in traditional English Composition (ENG 131). Students who enrolled in other first-year English courses or dropped the course before the census date were omitted. Propensity score matching was used to create a control group of ENG 131 students who were matched to ENG 131A students on a multitude of academic and demographic factors. In this casual-comparative, quasi-experimental quantitative study, differences in degree completion rates, re-enrollment rates, term GPA, and credit completion rates were compared for students enrolled in ENG 131A and those in ENG 131. After propensity score matching, the control group of 1,573 students, similar to the characteristics of the students in ENG 131A, emerged.

Results

The first research question asked if there were statistically significant differences in the completed credit hours in the first term of students who enrolled in the Accelerated Learning Program English course (ENG 131A) compared to the traditional English composition course (ENG 131). The results of the independent samples *t*-test indicated that the students who enrolled in ENG 131A (*M* =

80.78%, *SD* = 33.72%) earned a lower proportion of attempted credit hours compared to students who enrolled in ENG 131 (*M* = 84.53%, *SD* = 29.52%) during their first term of enrollment, *t*(3,090) = 3.320, p = <.001 (Table 1). The null hypothesis was therefore rejected because the p-value is less than 0.05, and the alternative hypothesis was accepted. There were statistically significant differences in the percentage of credit hours earned in the first term between students who enrolled in ENG 131A and those who enrolled in ENG 131.

Table 1
Independent Samples t-Test of First Term Credit Hours Earned

Percent of Credit Hours Earned	Equal variances not assumed	*t*	*df*	Mean Difference	Std. Error Difference
		3.320	3,090	3.75%	1.13%

The second research question asked if there were statistically significant differences in the first-term cumulative grade point averages of students who enrolled in the Accelerated Learning Program English course (ENG 131A) compared to the traditional English composition course ENG 131). The results of the independent samples *t*-test indicated that the students who enrolled in ENG 131A (*M* = 2.17, *SD* = 1.29) compared to the students who enrolled in ENG 131 (*M* = 2.44, *SD* = 1.24) had lower grade point averages at the end of their first term of enrollment, *t*(3,140) = 5.895, p = .027 (Table 17). Thus, the null hypothesis was rejected because the p-value was less than 0.05, and the alternative hypothesis was accepted. There were statistically significant differences in the earned first-term GPA between students who enrolled in ENG 131A and those who enrolled in ENG 131.

Table 2
Independent Samples t-Test of First Term Grade Point Average

End of Term 1 GPA	Equal variances not assumed	*t*	*df*	Mean Difference	Std. Error Difference
		5.895	3,140	.266	.045

The third research question asked if there were statistically significant differences in the re-enrollment rates of students who enrolled in the Accelerated Learning Program English course (ENG 131A) compared to the traditional English composition course. The observed and expected counts for re-enrollment to the following term were examined. The results of the Chi-Squared Test of Association (2x2) show there was not a significant association between the course taken and subsequent term re-enrollment ($\chi^2(1, 3{,}146) = .005^a$, p = .942). The null hypothesis was accepted because the p-value is greater than 0.05, and the alternative hypothesis was rejected. The count versus expected count data is presented in Table 3.

Table 3
Course Taken and Re-Enrollment to the Subsequent Term: Count vs. Expected Count

			No	Yes	Total
Course Taken	ENG 131	Count	615	958	1,573
		Expected Count	616	957	1,573
	ENG 131A	Count	617	956	1,573
		Expected Count	616	957	1,573
Total		Count	1,232	1,914	3,146
		Expected Count	1,232	1,914	3,146

The fourth research question asked if there were statistically significant differences in degree attainment rates of students who enrolled in the Accelerated Learning Program English course (ENG 131A) compared to the traditional English composition course ENG 131). The number of students who enrolled in ENG 131A who did not graduate within three years was higher than expected (815 vs 762.3). The actual count of students who enrolled in ENG 131 who did not graduate within three years was lower than expected (790 vs. 842.7). Students who enrolled in ENG 131A had a lower-than-expected three-year graduation count (104 vs. 156.7), while students who enrolled in ENG 131 had a higher-than-expected three-year graduation count (226 vs. 173.3), presented in Table 4.

Table 4
Course Taken and Three-Year Graduation Rate: Count vs. Expected Count

			No	Yes	Total
Course Taken	ENG 131	Count	790	226	1,016
		Expected Count	842.7	173.3	1,106
	ENG 131A	Count	815	104	919
		Expected Count	762.3	156.7	919
Total		Count	1,605	330	1,935
		Expected Count	1,605	330	1,935

The results of the Chi-Squared Test of Association (2x2) show there was a significant association between the course taken and graduating within three years of enrollment ($\chi^2(1, 1{,}935) = 40.732$, $p = <.001$). The null hypothesis was rejected because the p-value is less than 0.05, and the alternative hypothesis was accepted. Students who took ENG 131A in their first term had significantly lower three-year graduation rates (11.3%) than students who took ENG 131 (22.2%).

The process was repeated, examining the six-year graduation rate. While the federal standard for measuring the time to associate's degree completion is three years, the average elapsed time to degree for an associate's degree is five point six years (Shapiro et al., 2016). The number of students who enrolled in ENG 131A who did not graduate within six years was higher than expected (160 vs. 141.6). The actual count of students who enrolled in ENG 131 who did not graduate within six years

was lower than expected (199 vs. 217.4). Students who enrolled in ENG 131A had a lower-than-expected six-year graduation count (167 vs. 185.4), while students who enrolled in ENG 131 had a higher-than-expected six-year graduation count (303 vs. 284.6), presented in Table 5.

Table 5
Course Taken and Six-Year Graduation Rate: Count vs. Expected Count

			No	**Yes**	**Total**
Course Taken	ENG 131	Count	199	303	502
		Expected Count	217.4	284.6	502
	ENG 131A	Count	160	167	327
		Expected Count	141.6	185.4	327
Total		Count	359	470	829
		Expected Count	359	470	829

The results of the Chi-Squared Test of Association (2x2) show there is a significant association between the course taken and graduating within six years of enrollment ($\chi^2(1, 829) = 6.958$, $p = .008$). The null hypothesis was rejected because the p-value was less than 0.05, and the alternative hypothesis was accepted. Students who took ENG 131A in their first term had significantly lower six-year graduation rates (51.1%) than students who took ENG 131 (60.4%).

Summary of the Results

After using propensity score matching to create a control, two unique and separate sample groups with as much similarity as possible were formed. Statistical analysis resulted in three questions rejecting the null hypothesis. There was statistical significance in degree attainment, earned first-term GPA, and proportion of earned credit hours between students who enrolled in ENG 131 and those who enrolled in ENG 131A at the college. When considering that the Accelerated Learning Program (ALP) is designed to replace the outdated traditional, multiple course level model of developmental education, the fact that each research question rejected the null hypothesis is noteworthy because ENG 131A students were not progressing and graduating at the same rate as their ENG 131 peers. The null hypothesis was rejected for three statistical tests, and students in ENG 131A demonstrated poorer outcomes each time.

Since we know students who enroll in developmental education are less likely to earn their degree, it cannot be said that developmental education alone is the most significant contributing factor to retention and completion. However, no evidence is available to suggest that developmental education actually helps students earn their degrees (Bailey, 2009). Jaggars and Bickerstaff (2018) noted that low student success is impacted by three contributing factors—instructional methods in developmental education coursework, the length of the developmental course sequence, and placement test practices. This study confirmed that student success, when measured through the lens of the research questions, is negatively related to developmental education, specifically the ALP model. However, literature shows that students who participated in ALP sequencing at the

Community College of Baltimore County earned more college-level credits than their non-ALP classmates (Jaggars et al., 2015), which is the opposite of the statistical results of this study.

Recommendations

1. Subsequent term re-enrollment was used in this study. The initial term of enrollment was not considered, and most often, the fall-to-fall term is used to measure student retention. Examining subsequent term semester enrollment gives insight into progression during an academic year but not between academic years. Analyzing this dataset by academic years is recommended.

2. Studies have shown the differences in need based on the age of postsecondary students, specifically regarding the time away from the secondary classroom. Additionally, examining the type of high school diploma earned (whether it was conferred by a recognized school or if the student earned their high school equivalency diploma) would allow for conversation regarding academic alignment based on the diploma earned and years between formal academic instruction.

3. Because the faculty chose the textbook and supplemental academic materials, comparing student outcomes based on the course materials could provide fascinating insight into which materials lend themselves to more successful student learning outcomes. Additionally, because the pacing is determined by the needs of the students in each section, examining the timing of the content delivery could provide insight into how to best pace and sequence materials, specifically when considering the needs of students who have been away from formal classroom instruction longer than others.

4. Finally, future examinations of student success should consider the disruption caused by the COVID-19 pandemic. Based on adjustments made to modality, academic content, and semester calendaring, much could be learned about student success when examining the warp-speed changes implemented to ensure students could continue their academic journey. Additional research is suggested to compare the different models of corequisite design. Only some colleges create a separate section of supplemental instruction, while others deliver the supplemental content in college-level composition courses. Some corequisite models may be more conducive to student success.

References

Adams, P., Gearhart, S., Miller, R., & Roberts, A. (2009). The accelerated learning program: Throwing open the gates. *Journal of Basic Writing, 28*(2), 50-69. https://doi.org/10.37514/JBW-J.2009.28.2.04

Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment.* Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education. https://eric.ed.gov/?id=ED431363

Adelman, C. (2006). *The toolbox revisited: paths to degree completion from high school through college.* Washington, DC: Office of Vocational and Adult Education, U.S. Department of Education. https://eric.ed.gov/?id=ED490195

Arendale, D. (2002). Then and now: The early history of developmental education: past events and future trends. *Research & Teaching in Developmental Education, 18*(2), 3-26.

Ariovich, L., & Walker, S. (2014). Assessing course redesign: The case of developmental math. *Research & Practice in Assessment, 9,* 45-57. http://files.eric.ed.gov/fulltext/EJ1062722.pdf

Association of Public & Land Grant Universities. (n.d.) *How does a college degree improve graduates' employment earnings potential?* Retrieved from https://www.aplu.org/our-work/4-policy-and-advocacy/publicuvalues/employment-earnings/

Attewell, P. A., Lavin, D. E., Domina, T., & Levey, T. (2006). New evidence on college remediation. *The Journal of Higher Education*, *77*(5), 886–924.

https://doi.org/10.1353/jhe.2006.0037

Austin, P. C. (2011). An introduction to propensity score methods for reducing the effects of confounding in observational studies. *Multivariate Behavioral Research, 46*(3), 399-424. https://doi.org/10.1080/00273171.2011.568786

Bailey, T. (2009). Challenge and opportunity: Rethinking the role and function of developmental education in community college. *New Directions for Community Colleges*, *2009*(145), 11–30. https://doi.org/10.1002/cc.352

Bailey, T., Bashford, J., Boatman, A., Squires, J., Weiss, M. (2016). *Strategies for postsecondary students in developmental education: A practice guide for college and administrators, advisors, and faculty.* Washington, DC: Institute of Education Sciences, What Works Clearinghouse. Retrieved from https://ies.ed.gov/ncee/wwc/PracticeGuide/23

Bailey, T., & Cho, S.W. (2010). *Developmental education in community colleges*. New York, NY: Community College Research Center, Teachers College, Columbia University. Retrieved from https://www2.ed.gov/PDFDocs/college-completion/07-developmental-education-incommunity-colleges.pdf

Bailey, T., Jaggars, S. S., & Scott-Clayton, J. (2013). Characterizing the effectiveness of developmental education: A response to recent criticism. *Journal of Developmental Education, 36*(3), 18–22, 24–25.

Bailey, T., Jeong, D. W., & Cho, S.W. (2010). Referral, enrollment, and completion in developmental education sequences in community colleges. *Economics of Education Review*, *29*(2), 255–270. https://doi.org/10.1016/j.econedurev.2009.09.002

Barry, M. N., & Dannenberg, M. (2016). *Out of pocket: The high cost of inadequate high schools and high school student achievement on college affordability*. Washington, DC: Education Reform Now. Retrieved from https://edreformnow.org/wpcontent/uploads/2016/04/EdReformNow-O-O-P-Embargoed-Final.pdf

Belfield, C., Jenkins, D., & Lahr, H. (2016). Is corequisite remediation cost-effective? Early findings from Tennessee. *CCRC Research Brief*, *62*. Retrieved from https://ccrc.tc.columbia.edu/media/k2/attachments/corequisite-remediation-cost-effective-tennessee.pdf

Bettinger, E., & Long, B. (2004) *Shape up or ship out: The effects of remediation on students at four-year colleges*. Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w10369/w10369.pdf

Boylan, H. (1988). The historical roots of developmental education part III. *Research in Developmental Education, 5*(3), 1-4. https://files.eric.ed.gov/fulltext/ED341434.pdf

Boylan, H., & Bonham, B. (2014). *Developmental education: Readings on its past, present, and future.* New York, NY: Bedford/St. Martins.

Breneman, D. W., & Haarlow, W. N. (1998). Remediation in higher education: A symposium featuring developmental education: Costs and consequences. *Fordham Report, 2*(9), 1-57.

Calcagno, J. C., Crosta, P., Bailey, T., & Jenkins, D. (2007). Stepping stones to a degree: The impact of enrollment pathways and milestones on community college student outcomes. *Research in Higher Education, 48*(7), 775–801.

Carnevale, A., Cheah, B., & Wenzinger, E. (2021). *The college payoff: More education doesn't always mean more earnings*. Washington, DC: Georgetown University Center on Education and the Workforce. Retrieved from https://cew.georgetown.edu/cew-reports/collegepayoff2021/

Case, A. & Deaton, A. (2023, September). *Accounting for the widening mortality gap between American adults with and without a BA.* [Conference presentation]. BPEA Conference Draft, Fall, virtual. Retrieved from https://www.brookings.edu/wp-content/uploads/2023/09/1_Case-Deaton_unembargoed.pdf

Chen, X., & Simone, S. (2016). *Remedial coursetaking at U.S. public 2- and 4-Year institutions: Scope, experience, and outcomes – statistical analysis report*. Washington, DC: National Center for Education Statistics. Retrieved from https://nces.ed.gov/pubs2016/2016405.pdf

Cho, S.W., Kopko, E., Jenkins, D., & Jaggars, S. S. (2012). *New evidence of success for community college remedial English students: Tracking the outcomes of students in the accelerated learning program (ALP)*. New York, NY: Community College Research Center, Teachers College, Columbia University. Retrieved from https://ccrc.tc.columbia.edu/media/k2/attachments/ccbc-alp-student-outcomes-followup.pdf

Complete College America. (2016). *Corequisite remediation: Spanning the completion divide*. Indianapolis, IN. Retrieved from https://completecollege.org/spanningthedivide/

Daugherty, L., Gomez, C., Carew, D., Mendoza-Graf, A., & Miller, T. (2018). *Designing and Implementing Corequisite Models of Developmental Education: Findings from Texas Community Colleges*. Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RR2337

Davies, R., Williams, D., & Yanchar, S. (2008). The use of randomisation in educational research and evaluation: A critical analysis of underlying assumptions. *Evaluation & Research in Education, 21*(4), 303-317.

Edgecombe, N. (2011). *Accelerating the academic achievement of students referred to developmental education*. New York, NY: Community College Research Center, Teachers College, Columbia University. Retrieved from https://files.eric.ed.gov/fulltext/ED516782.pdf

Edgecombe, N., Cormier, M. S., Bickerstaff, S., & Barragan, M. (2013). *Strengthening developmental education reforms: Evidence on implementation efforts from the scaling*
innovation project. New York, NY: Community College Research Center, Teachers College, Columbia University.

Gallup (2023). *Education for what?.* Retrieved from https://www.gallup.com/analytics/468986/state-of-higher-education.aspx

Grunwald, H. E., & Mayhew, M. J. (2008). Using propensity scores for estimating causal effects: A study in the development of moral reasoning. *Research in Higher Education, (49)*8, 758-775. https://doi.org/10.1007/s11162-008-9103-x

Harris, H., & Horst, S.J. (2016). A brief guide to decisions at each step of the propensity score matching process. *Practical Assessment, Research, and Evaluation, (21)*4, 1-12. https://doi.org/10.7275/yq7r-4820

Hern, K. (2012). Acceleration across California: Shorter pathways in developmental English and math. *Change, 44*(3), 60-68. https://doi.org/10.1080/00

Holmes, W. M. (2014). *Using propensity scores in quasi-experimental designs*. SAGE Publications.

Horn, L., & Nevill, S. (2006). Profile of undergraduates in U.S. postsecondary education institutions: 2003–04: With a special analysis of community college students (NCES 2006-184). Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Leinbach, D. T., & Jenkins, D. (2008). *Using longitudinal data to increase community college student success: A guide to measuring milestone and momentum point attainment* New York, NY: Community College Research Center, Teachers College, Columbia University.

Jaggars S. S., & Bickerstaff, S. (2018) Developmental education: The evolution of research and reform. In M. Paulsen (Ed.), *Higher education: Handbook of theory and research* (vol.33, pp 469-503). Retrieved from https://ccrc.tc.columbia.edu/publications/developmental-education-evolution-research-reform.html

Jaggars, S.S., Edgecombe, N., & Stacey, G.W. 2014. *What We Know About Accelerated Developmental Education*. New York, NY: Community College Research Center, Teachers College, Columbia University.

Jaggars, S.S., Hodara, M., Cho, S.W., & Xu, D. 2015. Three accelerated developmental education programs: Features, student outcomes, and implications. *Community College Review, 43*(1), 3-26.

Jenkins, D., & Bailey, T. (2017). Early momentum metrics: Why they matter for college improvement. *CCRC Research Brief*, *65*. Retrieved from https://ccrc.tc.columbia.edu/media/k2/attachments/early-momentum-metrics-college-improvement.pdf

Jenkins, D., Speroni, C., Belfield, C., Jaggars, S. S., & Edgecombe, N. (2010). *A model for accelerating academic success of community college remedial English students: Is the accelerated learning program (ALP) effective and affordable?*. New York, NY: Community College Research Center, Teachers College, Columbia University. Retrieved from http://ccrc.tc.columbia.edu/media/k2/attachments/remedial-english-alpeffective-affordable.pdf

Jimenez, L., Sargrad, S., Morales, J., Thompson, M. (2016). *Remedial education: The cost of catching up.* Washington, DC: Center for American Progress. Retrieved from https://www.americanprogress.org/issues/education-k12/reports/2016/09/28/144000/remedial-education/

Juncos, A., & Collins, M. L. (2015). *Literature review: Models for developmental education redesign*. Boston, MA: Jobs for the Future. Retrieved from https://www.jff.org/idea/literature-review-models-developmental-education-redesign/

Noble J. P., Schiel J. L., Sawyer R. L. (2004). Assessment and college course placement: Matching students with appropriate instruction. In Wall J. E., Walz G. R. (Eds.), *Measuring up: Assessment issues for teachers, counselors, and administrators* (pp. 297-311). Greensboro, NC: ERIC Counseling and Student Services Clearinghouse and the National Board of Certified Counselors (ERIC Document Reproduction Service No. ED480379).

Nodine, T., Dadgar, M., Venezia, A., & Bracco, K. R. (2013). *Acceleration in developmental education*. San Francisco, CA: WestEd.

Parsad, B., & Lewis, L. (2004). Remedial education at degree-granting postsecondary institutions in fall 2000 [Data set]. National Center for Education Statistics. https://doi.org/10.1037/e609922011-017

Pretlow, J., & Wathington, H. D. (2012). Cost of developmental education: An update of Breneman and Haarlow. *Journal of Developmental Education*, *36*(2), 4–44. Retrieved from http://www.jstor.org/stable/42785092

Primary Research Group, Inc. (2008). *Survey of assessment practices in higher education.* New York, NY: Author.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, *70*(1), 41-55.

Scott-Clayton, J., Crosta, P. M., & Belfield, C. R. (2014). Improving the targeting of treatment: Evidence from college remediation. *Educational Evaluation and Policy Analysis*, *36*(3), 371–393. https://doi.org/10.3102/0162373713517935

Schak, O., Metzger, I., Bass, J., McCann, C., & English, J. (2017). *Developmental education challenges and strategies for reform.* Washington, DC: Office of Planning, Evaluation and Policy Development, U.S. Department of Education.

Shadish, W. R., Luellen, J. K., & Clark, M. H. (2005). Propensity scores: An introduction and experimental test. *Evaluation Review, 29*(6), 530-558. https://doi.org/10.1177/0193841X05275596

Shapiro, D., Dundar, A., Wakhungu, P.K., Yuan, X., Nathan, A, & Hwang, Y. (2016). Time to Degree: A National View of the Time Enrolled and Elapsed for Associate and Bachelor's Degree Earners (Signature Report No. 11). Herndon, VA: National Student Clearinghouse Research Center.

Steiner, P. M., Cook, T. D., & Shadish, W. R. (2011). On the importance of reliable covariate measurement in selection bias adjustments using propensity scores. *Journal of Educational and Behavioral Statistics*, *36*(2), 213-236.

Strong American Schools. (2008). *Diploma to Nowhere*. Retrieved from http://www.edin08.com/.

Stuart, E. A. (2010). Matching methods for causal inference: A review and a look forward. *Statistical Science, 25*(1), 1-21.

U.S. Department of Education. (2003). *Identifying and implementing educational practices supported by rigorous evidence: A user friendly guide*. Washington, DC: Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, U.S. Department of Education. Retrieved from http://www.ed.gov/rschstat/research/pubs/rigorousevid/rigorousevid.pdf

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Fulfilling the Potential of Online Education Within Institutional Realities

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Online education has transformed higher education, expanding access and enrollment opportunities for diverse learners through technology-enabled instruction. Most colleges and universities now offer some online courses or fully online programs (Seaman et al., 2018). However, simply putting courses online does not guarantee effective learning. High dropout and low completion plague many online efforts, signaling suboptimal designs failing to actively engage and support students (Hart, 2012). Online learning presents unique challenges around isolation, limited instructor interactions, unfamiliarity with technology, motivation, and retention. Poorly designed courses that fail to apply proven engagement strategies lead to frustrating learner experiences and outcomes.

Successful online learning requires discarding assumptions that it inherently differs from quality face-to-face instruction. The foundations remain the same: clear learning objectives, organized content, applied activities, instructor guidance, peer interactions, and constructive assessments (Easton, 2003). The medium shifts from physical to virtual, but sound pedagogies transfer. Technology enables new modalities, interactions, and accessibility once limited by time and space. Yet dynamic learning still depends on activating evidence-based practices meeting diverse student needs. With appropriate design tailored to online contexts, virtual courses generate equal or greater learning than traditional formats while expanding access (Means et al., 2013).

This paper synthesizes established best practices for developing excellent online courses grounded in scholarship and standards. It provides actionable recommendations for institutions seeking to initiate or improve virtual offerings. First, it emphasizes the primacy of instructor preparation and engagement. Next, it outlines core pedagogical principles proven to enhance online learning. It then highlights the importance of quality standards and peer evaluations for continuous improvement. It also examines strategies for gaining stakeholder support and managing institutional change pressures. Guidance for contextualizing educational technology adoption is also provided. While common principles exist, tailoring initiatives to institutional environments, resources and capabilities is essential for sustainable success. With vision and effort, every college can create online learning on par with top programs nationally through these strategies.

Faculty Preparation and Engagement

Extensive instructor involvement throughout online course development is foundational to success. Subject matter experts design courses, facilitate discussions, give feedback, answer questions, and assess learning. No automation substitutes for live faculty guiding purposeful learning experiences tailored to diverse student needs (Garrison & Cleveland-Innes, 2005). Students crave meaningful connections with committed instructors, particularly at a distance. Yet many faculty remain

untrained in online pedagogies and reluctant to teach virtually, resulting in disengaging courses. Overcoming this barrier is essential.

Institutions serious about quality online learning invest in extensive faculty development around virtual pedagogies (Herman, 2012). Training helps transition instructors from physical class expertise to designing active virtual environments using technology tools effectively. Faculty learn research-based principles for teaching online, collaborating to redesign courses applying those strategies. Complete course templates enable plugging in content while modeling dynamic designs. Extended one-on-one support assists implementation and refinement. Institutions might even require certification ensuring preparedness to teach online. Such immersive training empowers and incentivizes excellent virtual instruction (Elliott et al., 2015).

Ongoing communities of practice further faculty development and sharing of creative online strategies after initial preparation (Baran & Correia, 2014). Building these collaborative networks recognizes effective online teaching as an ongoing growth process, not a one-time training event. Regular peer discussions of challenges and solutions, co-mentoring relationships, and continued experimentation with emerging technologies in a supportive culture enable instructors to persistently refine courses and practices. There are always improvements to be made. Sustaining faculty engagement through communities of inquiry yields continually evolving designs and energized instructors ready to meet learners needs (Garrison & Akyol, 2015).

For contingent faculty, intensive training and communities may be infeasible. However, course templates with built-in best practices help them succeed, as does mentoring. Student feedback also provides input on engagement and learning. When overlaying quality course structures with their content expertise, part-time instructors can facilitate impactful online learning experiences. But investing in core faculty preparedness and communities pays compounding dividends in virtual course quality and student satisfaction. Their creative course designs, presence, and guidance make online learning click.

Pedagogical Best Practices

While quality online learning depends on prepared, engaged faculty, research-based course designs enable their success. Challenges like isolation, limited interactions, technology unfamiliarity, variable academic skills, and low self-direction threaten online student persistence and learning (Angelino et al., 2007). But research identifies instructional strategies mitigating these barriers when intentionally incorporated. Aligning designs around proven engagement principles provides every learner pathways to excel. Though contexts differ, adopting validated practices empirically linked to online achievement transcends institutional specifics.

Several syntheses identify pedagogical best practices consistently shown to enhance online learning across settings (Ambrose et al., 2010; Bowen et al., 2013; Kebritchi et al., 2017). While not exhaustive, recurrent principles include:

- Establishing instructor presence through regular announcements, feedback, interactions, and availability cues building relationships and community. This sustains motivation and support.

- Facilitating discussions using authentic questions, case analyses, debates, collaborative projects, peer teaching, and other active learning strategies tying concepts to meaningful contexts. This drives engagement through knowledge construction.
- Providing prompt instructor feedback and direction on assignments and questions. This enables improvement and comprehension.
- Using multimedia like videos, simulations, and interactive elements leveraging diverse modalities for enhanced understanding and self-paced review. This expands learning channels.
- Designing accessible mobile-friendly courses enabling learning flexibility across devices. This provides anytime-anywhere access.
- Building in varied formative assessments like self-checks, low-stakes quizzes, practice activities, reflections, and other tools providing metacognitive opportunities to confirm understanding and direction. This reinforces learning.
- Incorporating student creation of videos, blogs, wikis, presentations, e-portfolios and other multimedia products demonstrating comprehension through diverse modalities. This enables personalized expression and skill development.
- Offering optional synchronous sessions via web conferencing for discussions, questions and peer connections. This provides valued live interactions.
- Using motivation research strategies like goal-setting, relevance, self-reflection, choice, acknowledgment, and peer accountability to help sustain self-direction in online contexts. This drives persistence and grit.
- Additional principles expand this starter set of pedagogical guides decompiling online learning barriers through design. Grounding courses in community building, metacognition, creation, and choice transforms passive learning into collaborative meaning-making. The modalities differ but activating research-based engagement principles remains essential to student achievement. Online learners deserve empowering designs matching simple content delivery.

Evaluation Using Quality Standards

Evaluating and improving online courses is critical, moving beyond design assumptions to gathered evidence. Quality Matters (QM) provides research-validated standards and rubrics assessing course designs (Shattuck, 2013). QM's eight standards encompass:

- Course overview and introduction
- Learning objectives
- Assessment and measurement
- Instructional materials
- Learner engagement
- Course technology

- Learner support
- Accessibility

Detailed indicators elaborate each standard through quantifiable measures of design quality and alignment. QM's rubric can guide course development, peer review, and improvement processes. Independently certified QM reviewers also formally evaluate courses, providing institutions external expertise and credibility.

QM provides common language and expectations for quality while allowing flexibility meeting institutional needs. The rubric can be used at scale to systematically strengthen online programs through measured enhancements. Student achievement and satisfaction data can also indicate designs needing revitalization. Rigorously evaluating courses against national benchmarks raises online excellence, overcoming skepticism with tangible improvements that drive outcomes (Parscale et al., 2015). But quality assurance is ongoing, not a one-time activity. A commitment to perpetual refinement based on diverse assessment data keeps courses cutting-edge.

Gaining Stakeholder Support

Implementing major online learning initiatives requires broad-based stakeholder support and cultural readiness for success. Leaders must cultivate buy-in and enthusiasm from multiple constituencies when planning transformations (Grajek, 2021). Each group has different needs, concerns, and motivations shaping receptivity. Strategically addressing stakeholder priorities builds willingness to actively participate in envisioned future states. However, overlooking key players risks sabotage or disengagement undermining progress.

Common stakeholders include:

- Faculty – desire evidence of learning effectiveness, professional development, incentives, intellectual property protections, workload balances, technology support.
- Students – desire quality learning experiences, affordability, support services, flexibility, career advancement.
- Staff – desire clear roles, training for new skills, inclusion in planning, manageable workloads.
- Administrators – desire enrollment growth, revenue gains, reputation enhancement, innovation leadership.
- Governing Boards – desire fiscal prudence, fulfilled mission, competitive position, quality.
- Business Leaders – desire qualified workforce, expanded pipelines, alignment with needs.
- Policy Makers – desire accountability outcomes, access, economic impacts.
- Technology Providers – desire sales, incentivized partnerships.
- Accreditors – desire adherence to standards, process integrity.
- Community – desire local access, social mobility, equity.

Connecting initiatives directly to stakeholder motivations builds buy-in (Kezar, 2018). For faculty, emphasize enhanced learning and teaching opportunities. Students appreciate flexibility and career relevance. Staff seek growth and clarity. Administrators want strategic impact and competitive advantages. Boards desire innovation and fiscal strength. Corporate partners need talent pipelines. Policy makers expect access and efficiency. Providers desire sales. Accreditors require adherence. Communities benefit from local education options. Understanding and speaking to diverse stakeholder priorities expands support.

A variety of engagement strategies assist securing buy-in. Advisory councils give representative stakeholders direct input shaping plans. Campus forums, committees and working groups solicit feedback. Pilot projects with willing faculty demonstrate potential. Presentations and informal conversations inform and excite interest. Data illustrates benefits and effectiveness. Celebrating incremental wins maintains momentum. Leader messaging reinforces urgency and vision. Training and support smooth transitions. Flexibility accommodates contextual needs. Patience and persistence overcome inevitable hurdles. Genuine commitment to stakeholder priorities manifests through words, plans and actions (Kezar, 2014). This builds the trust to fuel successful transformations.

Managing Institutional Change

Beyond immediate course designs, implementing successful online learning involves facilitating deep institutional transformation. Change management research highlights key factors set initiatives up for success instead of frustration and resistance (Burke, 2018; Kezar, 2018). Attending to these dynamics in planning processes leads to smoother transitions:

- Crafting a clear, compelling vision for change focused on enhancing mission and community needs. Online learning should fill discernible gaps, not just chase competitors.
- Assessing cultural readiness for change to target strategies where needs and energies align. Change gradually where reservations persist by starting small and demonstrating benefits.
- Engaging diverse stakeholders early through two-way input mechanisms, not just top-down communications. Feel heard.
- Probing concerns, questions and sources of potential resistance to address misconceptions directly with empathy. Fear sabotages.
- Developing coalition of champions at all levels to promote and model change. Grassroots pull matters.
- Building infrastructure to scaffold change through policies, training, technologies, measurements and support roles. Remove barriers.
- Planning multi-stage timelines allowing learning, adaptation and refinement between gradual implementation phases. Change is nonlinear.
- Celebrating small wins and milestones to sustain momentum and positivity. Mark progress.

- Continually evaluating progress and satisfaction to guide ongoing modifications ensuring relevance. Be agile.
- Persisting through setbacks with transparent communication, analysis and revised plans. Change is challenging.

With care and credibility, institutions can lead productive transformations. But change ultimately relies on intrinsic motivation more than mandates. People support what they help create and understand the need for. Enrollment pressures, competitive forces or technology hype alone will not sustain change. Connecting online learning to community needs and mission through inclusive processes cements commitment. Leaders must attune to cultural dynamics, provide scaffolding, and exude patience. Online learning futures manifest through shared vision and values.

Contextualizing Educational Technology

Educational technologies like learning management systems (LMS), lecture capture, simulations, collaboration tools and multimedia content delivery platforms enable online instruction. However, tools alone do not determine success any more than a textbook ensures learning. Quality stems from research-based instructional strategies and design thinking, not technology (Bates, 2021). Still, thoughtfully selected and implemented tools matched to institutional contexts can amplify learning, access, affordability and engagement. Leaders should focus first on educational goals, then examine how technologies provide optimal vehicles reaching them.

When evaluating technology acquisitions, key considerations include:

- Alignment with pedagogical priorities and needs. How specifically does technology enrich learning experiences and outcomes?
- Ease of use and implementation burden. Will extensive training be required? Will the tool integrate with existing systems?
- Affordability including total cost of ownership. Do benefits justify ongoing costs?
- Scalability across diverse programs and growth plans. Does the platform allow enterprise adoption?
- Data security, privacy and accessibility compliance. Does it meet legal and ethical standards?
- Reliability and uptime guarantee to ensure 24/7 availability. Will it work when needed?
- Company stability, sustainability and implementation support. Is the vendor a reliable long-term partner?

There are excellent technology solutions supporting nearly any online learning priorities institutions may have. Leaders should start by articulating clear pedagogical goals, then researching tools purpose-built to enable them. Buying comprehensive integrated platforms from reputable education companies often provides the most seamless experience balancing simplicity and customization (Dahlstrom et al., 2020). While open educational resources and homegrown tools

offer cost savings, they typically require more internal expertise developing and maintaining. The "best" technology depends on institutional needs, capacities and constraints.

Online learning technologies continue advancing rapidly, so periodic reevaluation ensures currency. No solution should remain static and entrenched without examining new innovations. Technologies empowering adaptive learning, competency-based progression, automated feedback and assessments, multimedia interaction, multi-device access, collaboration, learning analytics, and other emerging practices evolve continually (Adams Becker et al., 2018). Upgrades and new adoptions should target tangible pedagogical goals balanced with faculty readiness and financial impacts. Leaders must watch hype cycles and focus on true teaching and learning priorities rather than bells and whistles. Educational technologies enable quality online learning only when applied purposefully.

Contextualizing Implementation

While shared principles and standards exist for quality online learning, programs must still be tailored for institutional environments, resources, and capabilities. No absolute formula or vendor solution guarantees success. Context matters. Each college has unique needs, faculty mix, student profiles, staff capabilities, learning platforms, budgets, and strategic priorities shaping implementation options and pace. Leaders must honestly assess challenges, assets, cultures, and change readiness when planning initiatives. Attempting to replicate other exemplars without accounting for local realities risks failure.

Some common considerations when contextualizing online initiatives include:

- Do we have funding for instructional designers, media creators, and necessary technology? Can we provide stipends or course releases incentivizing faculty engagement?
- Are qualified staff available to coordinate training, support, QA processes, and other vital functions? If not, can we partner with other schools? Outsource temporarily?
- What policies and structures for intellectual property, workload, and compensation need alignment? Where are the bottlenecks?
- How many faculty are enthusiastic and ready to pilot courses? Is broader skepticism, indifference, or resistance prevalent? What motivates our instructors?
- How sophisticated are our analytics? Can we identify high versus low-performing courses? Determine drivers? Track student success factors? Data guides improvements.
- How will student services like advising, tutoring, and technology support scale online? Are processes prepped?

Addressing these reality checks and managing change pressures will dictate viable actions. With instructional design support, enthusiastic faculty partners, project funding, targeted training, and cultural preparedness, institutions can progress rapidly. Absent those factors, incremental pilots and steady convincing may be required. There are no uniform solutions, only contextual pathways and possibilities.

Ultimately, each college must chart its course, maximizing strengths while acknowledging growing edges. Many models exist nationally, but adaptation is essential. With vision and persistence, institutions can build exceptional online programs true to their mission and learners. However, public competitors and perceptions should not drive timelines beyond realistic capacities. Laying solid foundations enables sustainable quality and continual enhancements. There are no shortcuts, but the destination is worth the climb.

Continuous Improvement

Continuous improvement through ongoing evaluation and redesign is critical for maintaining cutting-edge online learning experiences. The virtual landscape evolves rapidly, with new technologies, pedagogies, and learner expectations shifting continually. A course designed today may become outdated or less effective within months as innovations emerge. Without a vigilant focus on improvement, online offerings risk stagnation and frustration for learners who desire relevance, interactivity, and accessibility to match their everyday digital experiences. Building a culture of continuous improvement ensures online programs persistently refine and elevate learning through new ideas, tools, assessments, and responsiveness to changing needs (Niemiec & Otte, 2021). Like technology companies, colleges must persistently upgrade, test, and optimize online education through A/B testing new designs, piloting new modalities, monitoring satisfaction, and simplifying friction points. Continuous improvement powered by data and human-centered design thinking sustains online excellence.

Conclusion

Developing engaging online courses enabling impactful virtual learning is achievable by all institutions through deliberate strategies. Success begins with extensive instructor training and ongoing communities cultivating teaching presence and course designs activating research-based engagement principles. Rigorously evaluating courses against national quality standards provides objective measures of continuous improvement. Frameworks like Quality Matters offer research-backed tools to enhance learning quality. Educational technologies empower further possibilities when applied purposefully based on pedagogical priorities rather than flashy capabilities alone. Contextual factors and proactive change management must guide the pace and scope of initiatives matching institutional environments and resource realities.

There are no foolproof universal tactics guaranteeing online learning excellence. But institutions can absolutely build exceptional programs by: investing in faculty preparation and communities, leveraging technologies for learning goals, focusing relentlessly on engagement and outcomes, and leading change sensitively attentive to campus culture and needs. With creativity and commitment to learner-centered design, colleges can create vibrant virtual learning true to their mission. The possibilities ahead remain filled with potential.

References

Adams Becker, S., Brown, M., Dahlstrom, E., Davis, A., DePaul, K., Diaz, V., Pomerantz, J. (2018). NMC Horizon Report: 2018 Higher Education Edition. EDUCAUSE. https://library.educause.edu/resources/2018/8/2018-nmc-horizon-report

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). How Learning Works: Seven Research Based Principles for Smart Teaching. John Wiley & Sons.
Angelino, L. M., Williams, F. K., & Natvig, D. (2007). Strategies to Engage Online Students and Reduce Attrition Rates. Journal of Educators Online, 4(2), n2.
Baran, E., & Correia, A. P. (2014). A professional development framework for online teaching. TechTrends, 58(5), 96-102.
Bates, T. (2021). Defining Technology Roles in Education. Online Learning and Distance Education Resources. https://www.tonybates.ca/2021/11/01/defining-technology-roles-in-education/
Bowen, W. G., Chingos, M. M., Lack, K. A., & Nygren, T. I. (2013). Online learning in higher education: Randomized trial compares hybrid learning to traditional course. Education Next, 13(2), 58-64.
Burke, W. W. (2018). Organization change: Theory and practice (5th ed.). Sage Publications.
Dahlstrom, E., Brooks, D. C., Grajek, S., & Reeves, J. (2020). ECAR study of technology leadership for higher education. Research report. ECAR, Louisville, CO.
Easton, S. S. (2003). Clarifying the instructor's role in online distance learning. Communication Education, 52(2), 87-105.
Elliott, M., Rhoades, N., Jackson, C. M., & Mandernach, B. J. (2015). Professional development: Designing initiatives to meet the needs of online faculty. Journal of Educators Online, 12(1), n1.
Garrison, D. R., & Akyol, Z. (2015). Toward the development of a metacognition construct for communities of inquiry. The Internet and Higher Education, 24, 66-71.
Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. The American Journal of Distance Education, 19(3), 133-148.
Grajek, S. (2021). Leading Holistic Change in Higher Education: Presidents and Stakeholders' Perspectives. The EvoLLLution. https://evolllution.com/revenue-streams/distance_online_learning/leading-holistic-change-in-higher-education-presidents-and-stakeholders-perspectives/
Hart, C. (2012). Factors Associated With Student Persistence in an Online Program of Study: A Review of the Literature. Journal of Interactive Online Learning, 11(1), 19-42.
Herman, J. H. (2012). Faculty development programs: The frequency and variety of professional development programs available to online instructors. Journal of Asynchronous Learning Networks, 16(5), 87-106.
Kebritchi, M., Lipschuetz, A., & Santiague, L. (2017). Issues and challenges for teaching successful online courses in higher education: A literature review. Journal of Educational Technology Systems, 46(1), 4-29.
Kezar, A. (2014). How colleges change: Understanding, leading, and enacting change. Routledge.
Kezar, A. (2018). A New Vision for Higher Education Leadership: Resistance and Transformation in a Time of Changing Values. Routledge.
Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. Teachers College Record, 115(3), 1-47.
Niemiec, M., & Otte, G. (2021). Continuous improvement. The Journal of Continuing Higher Education, 69(1), 61-67.
Parscale, A., Windes, D., & Torres, K. (2015). Administrators perceptions about quality matters rubric. Quarterly Review of Distance Education, 16(4), 15-26.
Seaman, J. E., Allen, I. E., & Seaman, J. (2018). Grade Increase: Tracking Distance Education in the United States. Babson Survey Research Group.

Shattuck, K. (2013). Results of review of the 2011–2013 research literature. Retrieved from Quality Matters website: https://www.qualitymatters.org/qa-resources/resource-center/articles-resources/research-literature-review

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Foreign Interference and Higher Education Research: AUKUS as a Case Study

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Part I: Introduction

For thousands of years, new technologies have driven military supremacy. Smaller or more isolated nations have been able to leverage technology for political and strategic advantage, even against larger or numerically superior opponents. But in our future of cyber-enabled conflict, "grey zone" warfare, and conflicts occurring at the speed of machines, we are entering an age where military research has taken on a new importance.

A useful case study is recent moves by Australia to enter the AUKUS Agreement with the United Kingdom (UK) and United States (US). Though largely advertised as an initiative which enables Australia access to nuclear-powered submarines, the so-called "Pillar 2" of AUKUS promises greater sharing of technologies including 'artificial intelligence, cybertechnologies, quantum technologies and undersea technologies (other than the submarines)' (Shoebrige, 2021, p. 3). Although there are benefits of these technologies to civilian research, the clear thrust of the AUKUS Agreement is military applications of those technologies (Shoebridge, 2021, p. 6-7). Indeed, the recent Defense Strategic Review (DSR) in Australia pointed to the success of AUKUS Pillar 2 as 'essential for Australia in acquiring asymmetric capability' (Commonwealth of Australia, 2023, p. 72).

The DSR also highlighted a greater need for strong and responsive collaborations between academia and industry. The Group of Eight (the directorate representing Australia's eight leading research-intensive universities) emphasizing 'the critical importance of the nation's research-intensive universities to the success of AUKUS' (Group of Eight, 2023). Likewise, military personnel will be increasingly better trained and more knowledgeable on the intricate details of the next-generation technologies they are employing. Without that knowledge – how a weapon works, its operational strengths, and its inherent limitations – military personnel cannot hope to employ their weapons properly, safely or lawfully on the battlefields of the future.

Yet the DSR also made another potent observation of the AUKUS Agreement of relevance to this article (Commonwealth of Australia, 2023, p. 72):

> AUKUS Pillar II Advanced Capabilities will contribute to strengthening the AUKUS partners' industrial bases, eliminating barriers to information sharing, and technological cooperation… The ambition of the AUKUS partners is to support technological transfers as well as break down barriers for intellectual property transfer, domestic manufacturing, and domestic maintenance of key weapons, technology and capabilities.

A focus on Pillar 2 – on the sharing of information, the breaking down of barriers, the elimination of roadblocks to capability development – together with the opportunities for better and higher-quality training in military contexts, is suggested to present both novel and enduring risks to national security. Foreign intelligence services will seek to interfere in AUKUS research agendas, conduct cyberespionage to steal secrets, and exploit academic collaborations to glean insights into emerging next-generation technologies.

Many liberal democracies take the view that fulsome collaboration and unwavering transparency are the hallmarks of proper academic discourse and industry cooperation. Yet the partners of the AUKUS Agreement – the United States, Australia, and the United Kingdom – have all passed (or are about to pass) laws which can place strict constraints on international research agreements or alliances.

This paper has three aims. Firstly, the paper will explore the notion of illicit technology transfer as an unintended consequence of the need for higher levels of research and training to support the deployment and employment of next-generation military technologies. Secondly, the paper will explore some of the national security implications that threaten the interests of AUKUS. Thirdly and lastly, I will discuss some of the legal and policy options states appear to be evolving in response to the recognized national security risks related to military research acceleration, especially in relation to universities and higher education institutions (HEIs).[1]

Part II: Illicit Technology Transfer and HEIs

Many human activities involve the transfer of technology from one country to another, from one society to another, or from one organization to another. This phenomenon (known in the literature as technology transfer) has been defined as involving a transfer of 'a bundle of information, rights, and services' where the transfer has a significant benefit to the receiving entity's 'indigenous technological capability' (Contractor & Najad, 1981, p. 115). Technology transfer has spawned numerous other analogues including 'policy transfer' (Stone, 2001) and 'knowledge transfer' (Brinkley, 2007), involving the like sharing of ideas and concepts relevant to a nation-state's interests.

Of course, sharing of technology has also been a part of nation-state diplomacy, projecting images of benevolence as the donating state at the same time as contributing to indigenous capabilities of the receiving ally (Brautigam, 1994; Stockmarr, 2013). Unsurprisingly, the power of technology transfers between allies and friends (albeit in a manner conducive to the security interests of the donating state) has long featured in international relations as a 'value-laden political act' (Goulet, 1971, p. 171). Such export itself is not limited to exchanges between individuals, but may manifest

[1] For the purposes of scope, it is recognized that universities are not the sole location where sensitive military- and intelligence-focused research may take place, and there are other classes of "higher education institution" (however defined) at which both teaching and research into these subjects is undertaken. Therefore, the more inclusive term – "higher education institution" abbreviated to HEI – will be used throughout this paper to include universities, trade colleges, specialist research and teaching campuses, and other higher education entities to whom these forms of national security risks will apply because they undertake such sensitive research.

in ‘exchanges between diplomats, in high and lower-level ministerial meetings, through daily technical assistance, and through the selection of particular technologies and institutions’ (Brautigam, 1994, p. 341-342).

Alongside benevolent technology transfer, various forms of illicit technological transfer – involving espionage or the theft of intellectual property, or secrets carried in the heads of traitors and defectors – have likewise been critical mechanisms by which nation-states have levelled the playing field. Accordingly, nation-states have always had incentives not only to protect their own technological research, but also to observe, infiltrate, interfere with or disrupt the research programs of potential adversaries and untrustworthy allies (Hooker, 2005, p. 10). Thus, it can be said nation-states are highly incentivized to achieve the (often) interrelated goals of ‘acquiring knowledge about an enemy’s technical activities while tightly controlling one’s own technology’ (Seeley, 2003, p. 10).

Technology transfer suffers from difficulties as a conceptual vehicle because it can be hard to define what technology is being transferred as well as the mechanisms by which the transfer is affected (Reddy & Zhao, 1990; Bozeman, 2000). Technology transfer focuses purposively on the ‘informational component which consists of know-how in management, marketing, production, quality control, reliability, skilled labor and functional areas’ related to a particular technology (Wahab, 2012, p. 62). Yet there is an emerging body of literature recognizing that contemporary technology transfer can also include certain classified or sensitive (i.e., non-public) information necessarily related to the use or commercialization of a particular technology but possessed only by a select category or class of users or producers (Kroenig, 2010; Ulhøi, Neergaard, & Bjerregaard, 2012; De Wit-de Vries et al., 2019). For example, Pakistan copied the “know-how” and practices of the US when establishing the physical security and secrecy parameters of their strategic military and intelligence programs (Gregory, 2009).

Yet the effect of illicit technology transfers on nation-state security cannot be underestimated. Returning to the example of Pakistan, Abdul Qadeer Khan is viewed as a national hero for establishing the black-market networks which permitted Pakistan to develop and build their own nuclear weapons, even after he was arrested for doing so in 2004 (Correra, 2006). Indeed, it was Khan’s maintenance of these illicit technology transfer networks that enabled Pakistan to maintain its geostrategic position relative to neighboring India and China (Andreas, 2011).

Contemporary risks of illicit technology transfers can also be seen in recent media events. The much publicized “Thousand Talents Plan” – an initiative commenced in 2008 to ‘lure top scientific talent, with the goal of making China the world’s leader in science and technology by 2050’ (Kang, 2020) – was supported by approximately 200 other programs of talent attraction and recruitment coordinated by Beijing’s State Administration of Foreign Experts Affairs (Joske, 2020). Security agencies have also been put on alert by China’s recent adoption of the “grey beard strategy”, a reported plan to ‘embrace former decision-makers who possess privileged knowledge, some of it quite current…[t]heir goal is the harvesting of know-how… including information that has military value’ (Baumgärtner et al., 2023). Although that report related to former flight officers in the German Bundeswehr, there have been reports of similar Chinese “poaching” of senior military officers from New Zealand (Reuters, 2022), France (Falletti, 2022), the UK (Corera, 2022) and the US (Donnellan & Kleinig, 2023).

HEIs are specifically vulnerable to acts of illicit technology transfer for three reasons. Firstly, national security laws often achieve their policy aims by restricting the scope and use of knowledge and information. Many HEIs conversely rely upon the monetization of their research endeavors to fund their business models (Hartman, 2010, p. 70-71). Laws or policies which threaten the monetization of HEI research have the potential to strike at the very heart of the liquidity of those same HEIs, either *ex ante* (in the form of funding to conduct first-instance research programs) or *ex post* (through the capitalization or commercialization of their research into intellectual property or tangible outputs). Equally, failures to properly protect commercialized research can result in national security breaches (McFadden, Nadi, & McGee, 2018).

Secondly, HEIs (particularly in Western countries) fiercely defend liberal values such as freedom of speech, transparency, and collaboration. In particular, academic freedom – the capacity to 'research and advocate new ideas', even unpopular ones, without fear – is a foundational concept of HEI research (Gilmore, 2017). In the UK, the ability for researchers 'to question and test received wisdom, and to put forward new ideas and controversial or unpopular opinions, without placing themselves in jeopardy of losing their jobs or privileges they may have' receives statutory protection (Karran, 2007). US policy stipulates 'American science requires a research environment conducive to creativity…in which the free exchange of ideas is a vital component' (The White House, 1985). Lastly in Australia, the High Court has deemed academic freedom of such importance that it is protected even where it 'departs from those civil norms [of courtesy and respect]' (French, 2019; *Ridd*, 2021). Thus, national security controls which restrict 'what is researched, and by whom, [even] in security-sensitive areas' are likely to be heavily resisted (Evans& Valdivia, 2012; Thompson, 2018).

Thirdly, HEIs engage in a core business which involves technology transfer with foreign nationals, which makes HEIs susceptible by suborning existing practices (Brenner, 2011; Ulven & Wangen, 2021). In particular, staff become vulnerable to approaches veiled as ordinary business: study tours, academic funding, international conferences (Burgess, 2023). What becomes necessary is a regulatory regime which carefully balances academic and economic freedoms with national security and the interests of the nation-state. Calculating that balance is made more complex in modern scenarios where 'the enemy has become less targetable, the technology more difficult to define (as it is continually emerging), the university more global and more sensitive to commercial interests, and that enforcing any kind of control is now an international, not national, matter' (Evans & Valdivia, p. 178).

AUKUS carries the potential to upset this regulatory balance, given that the technologies which Australia will receive under both pillars of the AUKUS Agreement carry such a highly protected and sensitive status. HEIs which carry out research under the banner of AUKUS will face a greater range of security threats and must be prepared to undertake a broader range of risk mitigation strategies to counter them.

Part III: National Security Implications for HEIs in the Face of AUKUS

The intersection between HEIs and the national security landscape has intensified over the past two decades. Media reports in 2014 revealed HEIs were monitored by Chinese intelligence officers

(Garnaut, 2014), whilst public statements by the Australian Security Intelligence Organization (ASIO) in 2017 made clear that universities were being directly targeted (Dziedzic, 2017; Borys, 2017; Greene, 2017). At the same time, the role of Confucius Institutes – once heralded for promoting Chinese language and culture – were coming under increasing scrutiny for allegedly forming part of an 'overseas propaganda setup' (Parliamentary Joint Committee on Intelligence and Security, 2022, p. 28-33; hereafter, "PJCIS").

China is not the only country alleged to have engaged in such interference on HEI campuses in AUKUS countries – allegations have been levelled against potential adversarial nations such as Russia and North Korea (Greene, 2022; Burakovshy, 2022), as well as other countries with closer ties to the AUKUS triad including Saudi Arabia and Sudan (Mervis, 2019; Bernstein & Rein, 2019).

Against this increasingly adversarial backdrop, the Australian government took steps to combat the rise of national security risk in HEIs. In April 2018, Australia quietly appointed its first National Counter Foreign Interference Coordinator, intended to administer an emerging counter-foreign interference strategy (Department of Home Affairs, 2022). Then in August 2019, the Australian government established the University Foreign Interference Taskforce (UFIT) containing representatives from universities, security organizations and Department. The purpose of the UFIT was to work on the development of guidelines to better protect HEIs from national security risk (Tehan, 2019), which they published in November 2019 (Department of Education, 2021). Yet during the recent inquiry into foreign interference at HEIs by the Parliamentary Joint Committee on Intelligence and Security, it was noted that awareness of HEIs to national security risks was 'reactionary but developing rapidly' (PJCIS, 2023, p. 120). The Committee noted that '[t]he sector has not, and did not, respond to these risks in a vacuum or of their own proactive volition' (PJCIS, 2022, p. 120) which required – in the Committee's view – immediate intervention by government.

Perhaps the greatest threat to AUKUS is the induction of Australia – long considered a sub-imperial power in the Indo-Pacific region (Fernandes, 2022, p. 19-20) – into not only the "nuclear powers" club but the "advanced sovereign technology" club, both of which Australia has no experience with (Fruhling, 2017; Worrall et al., 2021). If AUKUS is 'the military, intelligence and cyber equivalent of Australia's trade and investment agreements with the United States and United Kingdom' (Fernandes, 2022, p. 74), it will require immediate commercialization (or at least operationalization) of research carried out under its imprimatur. Some scholars have already questioned Australia's capability to manage the AUKUS agreement, labelling Australia as the 'weak link' in the chain (Hartcher, 2021; Boer, 2022; Xiaochen & Hong, 2022; Croft, 2023). Others have already pointed out that of the AUKUS members, Australia is the most isolated geopolitically and the most in need of uplift (Seebeck, 2023; Caples, Gaida & Cave, 2023).

Further, alongside the expected increase in sensitive military and security-sponsored research, Australian HEIs are anticipating a massive shortfall in the number of trained graduates needed to manage AUKUS technologies post-implementation. Early estimates suggest around 200 subject matters experts are required for Australia's nuclear submarine program, each of whom must have a PhD and at least 20 years' experience (Martin, 2023). Translating that same shortfall across the AUKUS Pillar 2 technologies makes for a striking guesstimate of the educational deficiencies facing Australian HEIs.

So, what are the likely national security ramifications for Australian HEIs in the face of AUKUS? Not only are we likely to observe fluctuating or adapted variants of existing illicit technology transfers, but also the emergence of new techniques seeking to take advantage of the AUKUS framework.

Increased and novel talent recruitment

Talent recruitment has long been associated with facilitating processes of technology transfer, by transferring the 'bundle' of knowledge and know-how associated with a given technology inside the mind of the individual being recruited (Rogers, Takegami, & Yin, 2001; Ranga et al., 2016, Cohen, Nelson, & Walsh, 2022). Talent recruitment programs have achieved a greater degree of notoriety more recently given that they have allowed nation-states to recruit personnel to build or maintain capabilities those nation-states did not previously possess ()Zweig & Kang, 2020). Talent recruitment programs are also attractive for military and dual-use technologies like cyber and artificial intelligence, as these technologies are not only more open and diffusive but lack distinctive infrastructure which might enable illicit transfers to be detected (Shields, 2018, pp. 286-291).

There are several variants of such talent programs, ranging from the widely maligned 'Thousand Talents Plan' of the Chinese Communist Party (Joske, 2020), the Russian Academic Excellence Project (Mateeva & Feligoj, 2020), to the EDGE Program coordinated by the UAE (Helou, 2019). Talent programs may be by invitation or application, but likely include contractual obligations with a foreign entity which requires compliance with that country's laws (Federal Bureau of Investigation, 2022). Talent recruitment programs can also present opportunities for foreign intelligence services to cultivate human sources for further acts of espionage or intellectual property theft (Thomas et al., 2019, p. 23).

The law and policy options currently in place for talent recruitment are relatively straightforward: they either ban the program entirely or require disclosure of information for the tailored management of risk. In the US, researchers who receive Federal funding are banned from any talent recruitment programs operated by Chinese, Russian, Iranian or North Korean entities.[2] Australia has a disclosure requirement under its *Foreign Interference Transparency Scheme Act 2018* (Cth) ("FITS Act"), where researchers hold obligations to report arrangements with 'foreign principals'. The UK has no such requirements currently but is planning to enact a Foreign Registration scheme similar to Australia's as part of its *National Security Act 2023* (discussed later in this article).

However, these programs are far from foolproof. They place the burden of compliance on individuals, who make personally motivated decisions whether to disclose the particular arrangement. In most cases, government agencies do not have the resources to investigate every single academic to ensure compliance (Ravlic, 2023). Individuals are also notoriously fallible and may inadvertently fail to disclose arrangements which subsequently pose national security risks. A perfect example is demonstrated by Harvard chemistry professor Dr Charles Lieber (Kolata, 2023), convicted in 2021 for failing to disclose a US$50,000 per month stipend paid to him by Wuhan University the under the Thousand Talents program (Department of Justice, 2021).

[2] Under 42 USC 19232; and also §6499E of H.R. 4350, amending the FY22 *National Defense Authorization Act.*

Cyber-enabled theft

Given the significance of the AUKUS Agreement and the increasing prevalence of electronic recording and commercial systems in the conduct of military research, there is likely to be a sharp rise in the use of computer- or cyber-enabled techniques to steal sensitive research and intellectual property from HEIs.

The concept of using hackers to steal intellectual property is not a new phenomenon. Saias suggested in 2014 that big data and transnational business had magnified the attraction of cyber-enabled theft for espionage (Saias, 2014). Recent estimates suggest that the illicit technology transfer market being facilitated by cyber-enabled theft is worth approximately US$500 billion, making HEIs a highly attractive target not just for nation-state thefts but also opportunists (Thomas et al. 2019, p. 43). Cyber-enabled threat poses a specific danger to Australian HEIs conducting AUKUS research given our position as the 'weakest link' in the triad when it comes to cybersecurity (Croft, 2023).

Coupled with the threat from external actors is the rise of the insider threat – defined as an individual who is an 'organizational member who is a "trusted agent" inside the firewall…[an] employee or other constituent with a valid username and password [who] regularly interacts with the information assets of the organization' (Warkentin & Willison, 2009, p. 102). Insider threats to HEIs may not only be the researchers who have access to the sensitive research, but members of administrative, logistic and IT staff. These support staff are usually not considered as suspects when breaches are detected, may be less knowledgeable about security threats, and more vulnerable to espionage (Kont et al, 2015).

Existing laws already criminalize cyber-enabled thefts from HEIs. All three of the AUKUS countries are signatories to the *Budapest Convention on Cybercrime* (United Nations, 2004), which obliges Parties under articles 2-8 to 'adopt such legislative and other measures as may be necessary to establish as criminal offences under its domestic law' a variety of cybercrime including illegal access, interception, data theft and manipulation, and computer-related forgery and fraud. All three AUKUS countries have since passed laws prohibiting – by threat of significant jail terms – engagement in cybercrime (which would apply to HEIs).[3] The US has also taken to the extraordinary practice of indicting cybercriminals irrespective of their physical location (Department of Justice, 2020).

Other scholars have suggested using existing law frameworks in novel ways to yield successful results. Schmitz recommends the use of international law – particularly the *Agreement on Trade-Related Aspect of Intellectual Property* (TRIPS) – to counter cyber-enabled thefts (Schmitz, 2021). The benefits of such an approach are somewhat controversial, given that none of the AUKUS countries appear motivated to address allegations of economic espionage via the World Trade Organization (WTO), and where the imposition of unilateral sanctions would in fact violate international trade law obligations (Fidler, 2013).

[3] *Criminal Code* (Cth); 18 USC §§ 1030-1037; *Computer Misuse Act 1990* (UK); *Fraud Act 2006* (UK); *Serious Crime Act 2007* (UK).

Lacking any specific legal approaches that might combat the concept of cyber-enabled theft, the AUKUS countries have considered the use of policy instruments to outline obligations and mitigations in this regard, including by mandating higher standards of data security for HEIs (Smith & Walsh, 2023). Key amongst them is the UK National Cyber Strategy (UK Cabinet Office, 2022) – which needs updating to address cyber-enabled thefts – and the US National Institutes of Health report (NIH Advisory Committee, 2018), as well as Australia's policy guidance on insider threats (Attorney-General's Department, 2023). All three of the AUKUS countries have also formed specific policy units with remits to provide advice on (amongst other things) the theft of intellectual property from HEIs (Tehan, 2019; National Bureau of Asian Research, 2023; Department for Science, Innovation and Technology, 2023).

Offshore approaches

As the AUKUS countries commence collaboration on Pillar 2 technologies, it is inevitable that the security agencies of all three countries will be focusing their efforts on attempts by foreign actors. Given that AUKUS HEIs are likely to develop a heightened awareness of national security risks applying to their work over the course of the Agreement (Meijer, 2022; Schmidt, 2022) and AUKUS intelligence agencies will only be working closer together under the Five Eyes intelligence alliance to counter such threats (Cheeema, 2022), it follows that foreign actors seeking to undermine or penetrate the research of AUKUS HEIs will increasingly seek to do so in third-party countries – such as those visited by researchers at academic conferences and symposia.

Recruitment by foreign intelligence services in third-party countries carries certain benefits (Golden, 2017). Firstly, academics are more likely to let their guard down in a third-party country during a conference. As David Small wrote in his play on academia *Small World*, conferences and symposia are 'a way of converting work into play, combining professionalism with tourism, and all at someone else's expense' (Lodge, 1964, p. 231). Secondly, the counterespionage services of the researcher's home country – UK's MI5, US' FBI or Australia's ASIO – will not have a foreign presence in the third-party country, so are less able to intercept or prevent such approaches (Fabre, 2022). Of course, third-party countries may have a ruthless security service of their own, making such actions risky… but the payoffs may well be worth it.

Researchers thus face a dilemma. They can communicate the secrets of their research to secure additional presentation or lecturing opportunities (usually key to advancing their career and/or receiving future funding) or keep their research confidential and forego opportunities to engage with the community. Chu makes the point that 'institutions have a difficult balance to negotiate between safeguarding against foreign interference, nurturing beneficial foreign collaborations and a diverse workforce, and preserving the openness and freedom that are the hallmarks of the… academic system' (Chu, 2020, p. 15). In crafting appropriate controls which might restrict publication or public speech by academics, this balance is not easily struck (Elliott& Hepting, 2015, p. 61):

> While some of these concerns may be easily allayed (for example, by requiring all academic conference attendees to sign some kind of non-appropriation agreement), and while some of these concerns may be exaggerated (given that, for example, this new policy is likely to diminish the industrial orientation of academic research), it is

true that this strategy cannot ensure that all academic knowledge will be kept in the public domain or that it will be placed there at the optimal time.

In terms of legal and policy responses to the attempts to illicitly transfer technology and know-how during academic conferences and symposia, lawmakers face similar challenges to those facing institutions regarding the control of sensitive information versus promoting academic freedoms and freedom of speech. Deliberate delays in publication or undue secrecy in research are largely considered 'objectionable practices' in the AUKUS countries (Hickman et al., 2019; Harvey, 2020). Prohibitions on payments to attend symposia or present lectures, or requirements for disclosure, tend to suffer from the same self-regulatory failures as their employment in talent recruitment programs (Truex, 2020, p. 12). Non-disclosure agreements (for *ex ante* research) and mandatory non-exclusive licenses (for *ex post* results) pose their own problems with stifling innovative and creative approaches by multilateral or global research teams.

Rather, it appears that controls tilt more towards preparing academic researchers for risks and hardening them from compromise. For example, the AUKUS countries all require individuals who hold security clearances to report not only foreign travel but contacts with foreign officials, persons holding diplomatic or military rank, or suspected intelligence officers (United Kingdom Security Vetting, 2022; Department of Defense, 2023; Defense Counterintelligence and Security Agency, 2023). In the US, these reporting obligations have force of law[4] whilst UK and Australian reporting obligations are reinforced only by policy.

Part IV: Emerging Controls for Illicit Technology Transfer

One might ask what Australia will do to meet the mounting challenges to illicit technology transfers during AUKUS. Perhaps if – as I have argued – Australia truly is the weak link in AUKUS, then it stands to reason that Australia should be looking to its two allied partners for opportunities to increase its resistance to foreign interference, espionage and intellectual property theft. More specifically, this Part will examine some key legislative and policy instruments being used by Australia's two AUKUS partners, the US and the UK, in ameliorating the risks posed by interference in the research sector.

In conducting this analysis, I accept that the legal and policy environments of the UK and US differ from that of Australia, as do their strategic and geopolitical interests. However, to the extent that it is possible, I consider the AUKUS Agreement is a commitment to an enhancement of each other's' interoperability, military capability and regional stability. Doing so will no doubt mean what works for one AUKUS partner will be at least instructive or informative for the two others.

The *National Security Act 2023* (UK)

The Australian government may consider enacting general controls around the research conducted under AUKUS, such as those contained in the *National Security Act 2023* (UK) ("the NSA"). The NSA is noteworthy not only because the likely timing of its passage into law will make it operable at the

[4] By virtue of the enactment of the Security Executive Agent Directive No 3 (SEAD-3) made under the *National Security Act of 1947* (Pub.L. 80-253, 61 Stat. 495).

commencement of AUKUS Pillar 2 activities, but also because it substantially redevelops the UK's national security framework.

In particular, the UK NSA appears to manifest Parliamentary intent to pivot from the counter-terrorism era of the 2000s to a more contemporary threat environment by creating 'a comprehensive framework for countering hostile state activity analogous to the counter-terrorism framework' (Dawson, 2022, p. 5). That intent can also be seen in the NSA's modification of the UK's official secrets legislation (which has been largely untouched for nearly thirty years[5]), most notably by changing the term "enemy" to "foreign power" (Dawson, 2022; UK Cabinet Office, 2021). The NSA has also introduced numerous changes to UK defense and security legislation, replacing the term "hostile state activity" with what it deems "state threats", being:

> …overt or covert action orchestrated by foreign governments which falls short of general armed conflict between states but nevertheless seeks to undermine or threaten the safety and interests of the UK, including: the integrity of its democracy, its public safety, its military advantage and its reputation or economic prosperity. While the term hostile state activity (HSA) has generally been used to describe the threat, it is often read as being activity conducted by hostile states rather than hostile activity by states as intended (UK Home Office, 2021).

The forms of action said to constitute state threats include particular implications for HEIs under AUKUS such as "espionage… disinformation, propaganda, cyber operations and intellectual property theft" (UK Cabinet Office, 2021, p. 70). A full examination of the NSA would be impossible within the scope of this paper. Instead, this paper will focus on Parts 1 and 4 as the major operative provisions relating to national security implications in HEIs under AUKUS.

Part 1 of the NSA creates extraterritorial offences involving improper dealings with foreign powers, whether the dealing involves sensitive or classified material and the "conduct is prejudicial to the safety or interests of the UK" (NSA, s 1), unauthorized dealings in trade secrets (NSA, s 2), or 'assisting a foreign intelligence service' (NSA, s 3). Other sections of Part 1 establish new offences, such as those relating to 'prohibited places' like defense and intelligence premises (NSA, s 4-11). Sabotage, foreign interference preparatory or attempted forms of offending would also be criminalized (NSA, s 12-19).

The NSA would also amend the sentencing principles for UK criminal offences, permitting a court (or a Court Martial or Service Civilian Court, in the case of members of the Armed Forces) to consider if the conduct was undertaken on behalf of, or for the benefit of, a foreign power – and accordingly treat the conduct as an aggravated form of the offence (NSA, s 20-23). The balance of Part 1 of the NSA relates to certain investigation and prosecution powers exercisable with respect to "foreign power threat activity".

Part 4 then creates the Foreign Activities and Foreign Influence Registration Scheme. This Scheme – which for reasons which will become obvious shortly, is modelled on Australia's FITs Act and the US

[5] A collective reference to the *Official Secrets Act 1911* (UK), the amending *Officials Secrets Act 1920* (UK) and *Officials Secrets Act 1939* (UK), and the more modern provisions in the *Official Secrets Act 1989* (UK).

Foreign Agents Registration Act[6] – involves two new obligations. The first involves the mandatory registration of political influence activities and is therefore unlikely (without more) to be the subject of HEI research (NSA, s 70-73). The second involves mandatory registration of arrangements involving any "foreign power or foreign power-controlled entity" that has been declared by the Secretary of State and it is "reasonably necessary to do so to protect the safety or interests of the United Kingdom" (NSA, s 66-67). It is then a criminal offence – punishable by up to 5 years' imprisonment – to fail to register any affected arrangements.

There have been critics of the NSA. Binning (2020, p. 13) asked whether the NSA went far enough, noting that 'it is [currently] not even a criminal offence to be a foreign intelligence agent in the UK'. Others claim the NSA does not adequately protect those who disclose sensitive or classified information in the public interest, such as whistleblowers and journalists (Mylvaganam, 2022; Webber, 2023). Others claim the registration scheme exceeds that of both US and Australian equivalents, such that the scheme threatens to be 'one of the most fundamentally misconceived and ineptly focused that we have ever seen…[effectively] bureaucratizing almost all global engagement with the UK' (Shah, 2020; Foster, 2022).

Such criticisms appear to have some merit and could present some difficulties to applying aspects of the NSA to the Australian jurisdiction. In addition, several of the NSA measures already have analogues in Commonwealth law, such as the foreign registration scheme under the FITS Act and the offences for espionage, sabotage, and foreign interference under Australia's *Criminal Code*. As such there are three discrete elements of the NSA which might protect Australian HEIs from illicit technology transfers, being:

- The adoption of a 'trade secrets' protection under the ambit of espionage offences.
- The power of the Secretary of State to declare a 'specified person' in regulations, to which the foreign interference registration scheme will then apply; and
- The introduction of a statutory test of 'interference effect' to foreign interference offences

An amended trade secrets offence for Australia

Existing espionage laws in Australia require that an offender 'deals with information or an article' where either the information or article has a security classification or concerns Australia's national security (*Criminal Code*, s 91.1-91.2). This has potentially driven a legacy of "over-classification" (i.e., giving material a security classification it does not require, or classifying it at a level higher than required to protect it) which can inhibit the ability of AUKUS countries to cooperate as well as adding an 'overhead tax' in the form of complexity and delays (Biddington et al., 2018, p. 22). In 2018 when Commonwealth Parliament introduced the legislation which criminalized foreign interference, it also introduced a new 'trade secrets' offence (*Criminal Code*, s 92A.1). The offence was created to combat "economic espionage" and would "apply to dishonest dealings with trade secrets on behalf of a foreign government principal" (Australian Parliament, 2018, p. 3). However, the offence requires several proofs which may become problematic in the context of AUKUS HEIs.

[6] 22 USCA §§ 611–21 (West 2019).

The first is that the offence requires proof of 'dishonesty' in dealings with the trade secrets, by reference to both the 'standards of ordinary people' and that the accused knew of those standards. Those standards may not apply to insider threats who deal with the trade secrets in misplaced but *bona fide* good faith – such as academics presenting at an academic conference, for example. This dishonesty provision may not strictly apply to a person authorized to access and deal with the trade secrets, because the standard of dishonesty by reference to the 'standards of ordinary people' may not cover such conduct. The proof also that the accused actually knew what those standards were, rather than by reference to constructive or assumed knowledge.

The second issue is that the definition of 'trade secrets' in the *Criminal Code* is problematic. It requires not just secrecy around the information but also has a commercial value. It may be impossible to determine a commercial value for highly sensitive technologies, or for technologies that are extremely complex or abstract, or have not yet been fully commercialized. In the AUKUS context, it is certainly possible to envisage military technology which lacks any commercial or civilian equivalency.

The third issue is that the offence also requires proof that "the owner of the information has made reasonable efforts in the circumstances to prevent the information becoming generally known" (*Criminal Code*, s 92A.1(1)(b)(iii)). In the case of AUKUS technology, who is the "owner" of the information? For example, the technology present in nuclear submarines – is it owned by the US government? Or is the technology owned by all the countries who operate nuclear submarines? Further, should it be the "owner" of the information who sets the requirement of preventing the information from becoming known? Should it be the military? What about Parliament?

Such questions should not be permitted to exist in the context of such a serious criminal offence. The *Criminal Code* could therefore be amended to more accurately define trade secrets to more clearly apply to AUKUS 'information, documents or things' held or developed by HEIs (as well as other trade secrets generated by HEIs in the course of commercializing research). Rather than reference to "dishonesty", the offence should borrow from the NSA a reference to 'unauthorized' conduct, where 'the person is not entitled to determine whether they may engage in the conduct, and…does not have consent to engage in the conduct from a person who is so entitled' (NSA, s 2(3)). Then, the definitive term 'has a commercial value' should be amended similar to the NSA such that the information 'has actual or potential military, economic or commercial value'. Lastly, the proof of secrecy should be amended to remove the "owner" condition, such that the offence applies where it 'could reasonably be expected to be subject to measures to prevent it becoming generally known by, or available to, such persons (whether or not it is actually subject to such measures)'.

Declaring specified persons by regulation for the foreign registration scheme

One of the primary complaints regarding the foreign registration scheme in Australia revolves around the requirement to register (and the concomitant offence of failing to so register) arrangements and agreements with foreign principals, particularly with regard to HEIs (University of NSW, 2021; QUT, 2021; Universities Australia, 2021; Group of Eight, 2021; University of Melbourne, 2021). Given the internationally collaborative approaches of almost every Australian HEI, every

single agreement must be registered and made visible on the public register. This decision to not include a broad exemption for research and academic arrangements appears deliberate, especially with regard to alleged Chinese government-sponsored activities in Australian HEIs (Draffen & Ng, 2020, pp. 1124-1126).

The NSA likewise does not exempt HEIs from registering arrangements with foreign powers. However, the definitions of registrable activities between Australia's FITS Act and the NSA differ in ways which are significant. Firstly, the NSA requires mandatory registration only for "political influence activities" of any foreign power, which will not ordinarily apply to the research activities of HEIs in the UK. Secondly, registration is only then required for arrangements with "specified persons". The power is then extended to the Secretary of State to specify those persons, in regulations, who may not be an individual but is otherwise controlled by a foreign power. The specification must also "reasonably necessary to do so to protect the safety or interests of the United Kingdom".

In the AUKUS context, US laws permit similar declarations to occur, but from the perspective of export control. Under the Export Administration Regulations (EAR),[7] authority is vested in a statutory board administered by the Bureau of Industry and Security (BIS) to declare certain individuals or entities on the "Entity List" (Supplement 4 to Part 744). Entities are listed on the basis that "there is reasonable cause to believe, based on specific and articulable facts, that the entities have been involved, are involved, or pose a significant risk of being or becoming involved in activities that are contrary to the national security or foreign policy interests of the United States, and those acting on behalf of such entities" (EAR, s 744.11). Any dealings with named entities on the Entity List (such as by way of export, re-export, or transfers) are prohibited with a license requirement issued by BIS, on the basis that such a requirement will "enhance BIS's ability to prevent violations of the EAR or otherwise protect U.S. national security or foreign policy interests".

In effect, the NSA adopts aspects of US export control law into an Australian style registration scheme, by permitting the Secretary of State to determine which entities the scheme would apply to. Such a scheme – adopted in Australia – would not only have the capacity to address the concerns raised by HEIs when the legislation was originally passed (and during the current Parliamentary review) but also allow more flexible, responsive and targeted application of the FITS Act provisions. This is especially the case given that both the NSA and the FITS Act have been deliberately shorn of an exemption for academic research at or on behalf of HEIs, suggesting the Parliamentary intent in both countries is to eschew any possibility of such an exemption.

Instead, the Australian FITS Act could be amended to adopt a similar approach to that in the NSA, making only politically-aligned or motivated activities registrable for all foreign principals. The Minister for Home Affairs (as analogue for the Secretary of State) could then be vested with a power under the FITS Act to declare only specific entities subject to the registration provisions, including by amending the definitions of "undertaking activity on behalf of a foreign principal", "registrable arrangement" and/or "purpose of activity" to only include activities and arrangements on behalf of, or in relation to, those declared entities. This amendment could also have the flow-on

[7] 15 CFR §730-774.

effect of bringing Australian law closer to the operation of both UK and US laws applying to the AUKUS research in HEIs.

Including an interference effect

The final recommendation that can be taken for the protection of AUKUS HEI research from the NSA is the inclusion of the "interference effect" provision in relation to foreign interference offences. Although the nature of foreign interference offences are largely designed to prevent undue influence in processes of democratic government, the Australian offences have drawn some criticism for also applying in cases where conduct "support[s] intelligence activities of a foreign principal" or will "prejudice Australia's national security" for the unacceptable broadness of these terms.

Principal among the concerns is that the offences may criminalize innocent behavior, or behavior undertaken in good faith (such as by journalists; Kendall, 2022), especially where the *Criminal Code* allows for proof of recklessness in respect of whether the conduct will have the actual effect of interfering. The contemporary manifestation of these concerns is the prosecution of Alexander Csergo, where the DPP alleges Csergo's supply of "open source" information to two suspected Chinese intelligence officials has offended the reckless foreign interference provision (Walker-Munro & Kendall, 2023).

The NSA takes aim at the possible issue of foreign interference offences becoming disconnected from the practical result. Although the UK foreign interference offences have both an intended and reckless provision, the offences cannot apply unless the accused intended or was reckless that the conduct would have an "interference effect" (NSA, s 14). Of particular relevance in the context of the AUKUS HEIs is conduct having the effect of "affecting the exercise by any person of their public functions" and "prejudicing the safety or interests of the United Kingdom". The NSA also eschews any reliance on the "covert, threatening or deceptive" requirement in Australia's offence framework.

In a practical sense, Australia's foreign interference offences could be amended to remove the proofs relating to secrecy – namely the requirement that offending conduct be "covert, threatening or deceptive" – and instead focus on the actual or intended effect of such conduct in the manner contemplated by the NSA. Given that actions undertaken by whistleblowers and journalists will not (or should not) have an interference effect, the offences will have no impact on those persons, with the added benefit of applying the offence provisions to both overt and covert conduct which is captured by reference to an interference effect.

From the perspective of Australian HEIs an interference effect would also have no effect on honest and proper dealings with AUKUS information and material. By linking an interference effect to conduct which "prejudices the safety or interests" of Australia, the offence would capture the supply of AUKUS information and material to foreign principals, as well as their proxies and agents.

The US Stop Higher Education Espionage and Theft (SHEET) Act

The second option for the Australian government in the face of illicit technology transfer would be to enact legislation specific to protecting research being conducted in HEIs under AUKUS. One such contemporary example is the US SHEET Act. Originally proposed by Texas Republican Senator Ted Cruz in 2018, the Stop Higher Education Espionage and Theft (SHEET) Act was introduced for a fourth time on 9 February 2023, after three previous incarnations of the law failed to receive votes in Congress. Those previous failures have been attributed as much to Sen Cruz's junior position in the Republican party (Carroll, 2015) as much to his controversial political views (Bucksbaum, 2023; Graziosi, 2023; King, 2023).

The SHEET Act does not seek to massively amend US law in the same manner as the NSA. Instead, it substantially amends the US Code definitions appended to the jurisdictional remit of the Federal Bureau of Investigation (FBI) to introduce "foreign intelligence threats to higher education", then makes minor amendments to other parts of US law to permit the making of specific counter-state decisions related to those foreign intelligence threats.

The SHEET Act's headline amendment is the introduction of a section 540D to Chapter 33 of Title 28 of the US Code. Section 540D(a)(3) of the SHEET Act would define a "foreign actor" to include not only foreign governments, but also political organizations and factions of those governments, as well as any "entity that is openly acknowledged by a foreign government or foreign governments to be directed and controlled by such foreign government or foreign governments". Sections 540D(a)(3)(E) and (F) then appear to be catch-all provisions, intending to capture any person or entity operating under the direct or indirect supervision, direction, control or support of any such government, unless relating to an individual person who is "a citizen of and domiciled within" the US. National security is defined as "the national defense, foreign relations, or economic interests of the United States".

The SHEET Act then empowers the Director of the FBI to issue a determination that a person is a "foreign intelligence threat to higher education", if they are satisfied the entity has "committed, attempted to commit or conspired to commit" a wide variety of criminal offences. These offences include smuggling, espionage, kidnapping, identity theft or computer fraud, economic espionage, theft of trade secrets, terrorism or violation of US export control law.

The effect of such a determination is substantial – it requires the Secretary of State to immediately end such a foreign actor's visa within the US and requires the Secretary of Homeland Security to institute removal proceedings to "expeditiously remove such foreign actor from the United States", as well as removing all rights to any entry to the US whilst the determination is in place (SHEET Act, s 540). Such a determination may remain in place forever, but the individual may lodge a petition for review within 2 years of the declaration having been made. The Director must also review such declarations every 5 years. In the case of the Director's own motion review, the decision is not appealable to any US court (although ordinary determinations may be appealed to the US Court of Appeals within 30 days). Other than revocation by the Director, only Congress may nullify a declaration made under the SHEET Act.

The SHEET Act also permits the Director of the FBI to notify the Secretary of Homeland Security about an entity who poses a risk but whom the Director chooses not to make determination or cannot satisfy the necessary criterion. For example, the entity may pose a risk because they engage "in any practice with national security implications", which are defined to include transfer of uncontrolled but sensitive technology, changing the type or nature of their study, significantly deviating from the terms of their visa, and/or providing false or misleading information to the Department of State or the Department of Homeland Security. In those circumstances, the foreign actor in question may be "invited" to voluntarily depart the US within 10 days but, should they not do so, expedited removal proceedings may be commenced.

The SHEET Act then creates a sub-definition in US immigration law for foreign intelligence threat to higher education as a class of "deportable alien" as well as creating the obligation for expedited removal proceedings. The Act also creates a yearly reporting obligation on higher education institutions to disclose any arrangements or financing by declared foreign intelligence threats made by the Director.

Noting the significant differences between the legal and justice systems of Australia and the US, Australia could consider specific legislation (like the SHEET Act) designed to protect the AUKUS research in its HEIs. Such legislation could bestow power in a Ministerial portfolio (such as the Minister for Home Affairs) to make determinations of individuals or entities who pose a "foreign intelligence threat to higher education". The making of such a determination could be on the advice of Australian security agencies (such as ASIO) or the result of referral or complaint made by law enforcement bodies or universities. A determination under such legislation could then have the same effect as a person receiving an adverse security assessment under the *Migration Act 1958*. In such cases, a person who is "directly or indirectly a risk to security" is also considered to have a "character concern", which may result in any prospective visa application being refused and/or any existing visas already issued being cancelled.

Such legislation would require significant balancing provisions and safeguards. Not only should the declaration of an entity – as an exercise of Ministerial power – be a reviewable decision, but so should any immigration or education decisions made based on such a declaration (White, 2020). Given the nature of any such proceedings in examining exactly how and why a person might pose such a threat to HEIs, the legislation would need to be compatible with the provisions of the *National Security Information (Criminal and Civil Proceedings) Act 2004* to protect evidence in the name of national security. Most importantly, in respecting the freedoms of the HEIs which this legislation is designed to protect, the exercise of Australian national security law and process should never come to resemble Franz Kafka's dystopian shadow justice system (Saul, 2010).

Part V: Conclusion

The AUKUS Agreement is set to fundamentally alter the relations between Australia, the UK and the US, as well as the entire geopolitical stability of the Indo-Pacific. AUKUS will change not only how the Australian Defense Force fights, but what it will fight with. Nuclear submarines, quantum computers, autonomous weapons – all bleeding-edge technologies which will require both broad exploration and rapid translation to be fully effective (Seebeck, 2023).

To do so, Australian HEIs (alongside their UK and US counterparts) will face national security threats to illicitly undermine military research on the one hand, but also divert and compromise intellectual property and sensitive technologies into potentially adversarial countries like China, Russia, Iran and North Korea. HEIs will need to be properly skilled, resourced and educated in what these national security threats look like, how they manifest, and the appropriate methodologies for mitigating or eliminating those threats.

The law and policy framework of Australia will also need to change. Although a number of laws have been passed to uplift Australian national security laws – prompting some to suggest Australia has engaged in 'hyper-legislation' (Roach, 2012) – the law will need to be agile and responsive to the emergence and evolution of these threats to the AUKUS Agreement. New approaches need to be prioritized and considered as part of a broader nation-building effort in Australia, uplifting HEI resilience and national security capability at the same time as improving our regulatory frameworks. Without doing so, and appropriately investing in those processes, AUKUS is likely to cause more damage to our relations with our allies than we will benefit.

References

Andreas, P. (2011). Myths, Misconceptions, and Historical Lessons. *Political Science Quarterly, 126*(3), 403-416.

Attorney-General's Department (2023). *Countering The Insider Threat: A guide for Australian Government.* https://www.ag.gov.au/sites/default/files/2023-05/countering-insider-threat-a-guide-for-australian-government-2023.pdf.

Baumgärtner, M., Diehl, J., Gebauer, M., Giesen, C., Kauschanski, A., Lehberger, R., Milatz, M., Obermaier, F., Obermayer, B., Röhreke, F., & und Wolf Wiedmann-Schmidt, F. S. (2023, June 2). *What Are German Fighter Pilots Doing in China?* Der Spiegel. https://www.spiegel.de/international/germany/suspicious-activity-what-are-german-fighter-pilots-doing-in-china-a-25ac852d-887d-454b-8d73-02a595c83c32?sara_ref=re-so-app-sh.

Bernstein, L., Sun, L. H., & Rein, L. (2019, April 3). *NIH police yank Iranian graduate student from lab as agency clamps down on security*. The Washington Post. https://www.washingtonpost.com/national/health-science/nih-police-yank-iranian-graduate-student-from-lab-as-agency-clamps-down-on-security/2019/04/03/79f98bca-555a-11e9-8ef3-fbd41a2ce4d5_story.html.

Biddington, B., Carr, K., Cash, M., Clark, M., Davis, M., Harrison, R., Harrison, T., Jennings, P., Lovett, D., Mathers, N., McCarthy, I., McNamara, G., Nardini, F. T., Phillips, M. J., Rowlands, G., Wallis, S. (2018). *Australia in Space: Views from the Strategist*. Australian Strategic Policy Institute.

Binning, P. (2022). The National Security Bill: A Missed Opportunity? *Solicitors Journal 165*(9), p. 13.

Boer, R. (2022, January 24). *Op-Ed: Setting the context for the Anglo-supremacist AUKUS pact*. The Guardian. https://cpa.org.au/guardian/issue-1992/setting-the-context-for-the-anglo-supremacist-aukus-pact/

Borys, S. (2017, October 10). *Education Minister urges universities to be vigilant over Chinese influence on campuses*. ABC News. https://www.abc.net.au/news/2017-10-10/universities-urged-to-be-vigilant-over-chinese-influence/9032840.

Bozeman, B. (2000). Technology transfer and public policy: a review of research and theory.' *Research Policy, 29*, 627.

Brautigam, D. (1994). Foreign aid and the export of ideas: Chinese development aid in The Gambia and Sierra Leone. *Journal of Commonwealth and Comparative Politics, 32*(3), 325.

Brenner, J. (2011). *America the Vulnerable: Inside the New Threat Matrix of Digital Espionage, Crime, and Warfare*. Penguin.

Brinkley, I. (2007). *Trading in Ideas and Knowledge.* The Work Foundation. https://www.bl.uk/collection-items/trading-in-ideas-and-knowledge.

Bucksbaum, S. (2023, June 17). *Ted Cruz bizarrely associates Pat Benatar's music with satanic child sacrifice*. Entertainment Weekly. https://au.news.yahoo.com/ted-cruz-bizarrely-associates-pat-215106158.html.

Burakovsky, A. (2022, April 1). *The war in Ukraine ruins Russia's academic ties with the West*. The Conversation. https://theconversation.com/the-war-in-ukraine-ruins-russias-academic-ties-with-the-west-180006.

Burgess, M. (2023, February 21). *Director-General's Annual Threat Assessment*. https://www.asio.gov.au/director-generals-annual-threat-assessment-2023.

Burton-Bradley, R. (2019, March 10). *China's Confucius Institutes have spy agencies and governments increasingly alarmed*. ABC News. https://www.abc.net.au/news/2019-03-10/confucius-influence-around-the-world-in-question/10875960.

Caples, A., Gaida, J., & Cave, D. (2023, June 6). *AUKUS: three partners, two pillars, one problem*. The Strategist. https://www.aspistrategist.org.au/aukus-three-partners-two-pillars-one-problem/.

Carroll, L. (2015, March 29). *How many bills has Ted Cruz passed in the Senate?*' Politifact. https://www.politifact.com/factchecks/2015/mar/29/dana-bash/how-many-bills-has-ted-cruz-passed-senate/.

Cheema, S. A. (2022). AUKUS: Analysis of its Claimed Objectives in Asia-Pacific. *CISS Insight Journal, 9*(2), 86.

Chu, T. F. (2020). The Complex Challenge of Foreign Interference in Research Administration and Compliance. *Research Management Review, 24*(1), 1-15.

Cohen, W. M., Nelson, R. R., & Walsh, J. P. (2022). Links and Impacts: The Influence of Public Research on Industrial R&D. *Management Science, 48*(1), 1.

Commonwealth of Australia (2023). *National Defence: Defence Strategic Review*. Australian Government Printer.

Contractor, F. J., & Sagafi-Nejad, T. (11981). International technology transfer: Major issues and policy responses. *Journal of International Business Studies* 12, 113-115.

Correra, G. (2006). *Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A.Q. Kahn Network*. Oxford University Press.

Correra, G. (2022, October 18). *Ex-UK pilots lured to help Chinese military, MoD says*. BBC News. https://www.bbc.com/news/uk-63293582.

Croft, D. (2023, March 14). *Australia is the "Weakest Link" in AUKUS Cyber Security.* Cyber Security Connect. https://www.cybersecurityconnect.com.au/defence/8800-australia-is-the-weakest-link-in-aukus-cyber-security.

Dawson, J. (2022, November 15). *National Security Bill 2022-2023*. UK Parliament. https://researchbriefings.files.parliament.uk/documents/CBP-9559/CBP-9559.pdf.

De Wit-de Vries, E., Dolfsma, W. A., van der Windt, H. J., & Gerkema, M. P. (2019). Knowledge transfer in university–industry research partnerships: a review. *The Journal of Technology Transfer, 44*(1), 1236.

Defense Counterintelligence and Security Agency (2023). *Report a Security Change, Concern, or Threat*. https://www.dcsa.mil/Personnel-Security/Background-Investigations-for-Applicants/Report-a-Security-Change-Concern-or-Threat/.

Department of Defence (2023). *Applicants & Holders - Reporting changes in circumstances.* https://www.defence.gov.au/security/clearances/applicants-holders/reporting-changes-in-circumstances.

Department of Employment (2021, November 17). *Guidelines to Counter Foreign Interference in the Australian University Sector*. https://www.education.gov.au/guidelines-counter-foreign-interference-australian-university-sector/resources/guidelines-counter-foreign-interference-australian-university-sector.

Department of Home Affairs (2022). *National Counter Foreign Interference Coordinator*. https://www.homeaffairs.gov.au/about-us/our-portfolios/national-security/countering-foreign-interference/cfi-coordinator.

Department of Justice (US) (2020, September 16). *Seven International Cyber Defendants, Including "Apt41" Actors, Charged In Connection With Computer Intrusion Campaigns Against More Than 100 Victims Globally*. https://www.justice.gov/opa/pr/seven-international-cyber-defendants-including-apt41-actors-charged-connection-computer.

Department of Justice (US) (2021, November 19). *Information about the Department of Justice's China Initiative and a Compilation of China-Related Prosecutions Since 2018*. https://www.justice.gov/archives/nsd/information-about-department-justice-s-china-initiative-and-compilation-china-related.

Department for Science, Innovation and Technology. (2023, January 30). *About Us.* https://www.gov.uk/government/organisations/research-collaboration-advice-team.

Donnellan, A., & Kleinig, X. (2023, May 30). *Australian citizen Daniel Duggan is accused of training Chinese military pilots by the US. His wife alleges he's caught in a "political power play"*. ABC News. https://www.abc.net.au/news/2023-05-29/daniel-duggan-extradition-arrest-china-united-states-730/102378956.

Draffen, C., Ng, Y.-F. (2020). Foreign Agent Registration Schemes in Australia and the United States: The Scope, Risks and Limitations of Transparency. *UNSW Law Journal 43*(4), 1101-1126.

Dziedzic, S. (2017, October 25). *Government needs to be "very conscious" of foreign interference in Australian universities, ASIO says*. ABC News. https://www.abc.net.au/news/2017-10-25/government-very-conscious-foreign-interference-australian-unis/9082948.

Elliott, P. W., & Hepting, D. H. (2015). *Free Knowledge: Confronting the Commodification of Human Discovery.* University of Regina Press.

Evans, S. A. W., & Valdivia, W. D. (2012). Export Controls and the Tensions Between Academic Freedom and National Security. *Minerva, 50*, 169-172.

Fabre, C. (2022). Recruitment. In C. Fabre (Ed.), *Spying Through a Glass Darkly: The Ethics of Espionage and Counter-Intelligence* (pp. 142-173). Oxford Academic Press. https://doi.org/10.1093/oso/9780198833765.003.0008.

Falletti, S. (2022, October 21). *Quand l'armée chinoise recrute des pilotes français*. Le Figaro. https://www.lefigaro.fr/international/quand-l-armee-chinoise-recrute-des-pilotes-francais-20221021.Goulet, D. (1971). *The Cruel Choice: A New Concept in the Theory of Development*. Atheneum.

Federal Bureau of Investigation (2022). *The China Threat: Chinese Talent Plans Encourage Trade Secret Theft, Economic Espionage.* https://www.fbi.gov/investigate/ counterintelligence/the-china-threat/chinese-talent-plans.

Fernandes, C. (2022). *Subimperial Power: Australia in the International Arena*. Melbourne University Press.

Fidler, D. P. (2013). Economic Cyber Espionage and International Law: Controversies Involving Government Acquisition of Trade Secrets through Cyber Technologies. *ASIL Insights, 17*(10), https://www.asil.org/sites/default/files/insight130320.pdf.

Foster, P. (2022, December 12). UK "foreign influence" register criticised by City group. *Financial Times*. https://www.ft.com/content/943a2767-998e-4350-aa56-e0929c680d4a.

French, R. (2019). *Report of the Independent Review of Freedom of Speech in Australian Higher Education Providers*. Australian Government Printer. https://nla.gov.au/nla.obj-3062854449/view.

Fruhling, S. (2017). *Sovereign Defence Industry Capabilities, Independent Operations and the Future of Australian Defence Strategy*. Centre of Gravity.

Garnaut, J. (2014, April 21). *Chinese spies keep eye on leading universities*. Sydney Morning Herald. https://www.smh.com.au/national/chinese-spies-keep-eye-on-leading-universities-20140420-36yww.html.

Gilmore, J. (2017). Teaching terrorism: the impact of the Counter-Terrorism and Security Act 2015 on academic freedom. *The Law Teacher, 51*(4), 515.

Golden, D. (2017, October 10). *How the CIA Staged Sham Academic Conferences to Thwart Iran's Nuclear Program.* ProPublica. https://www.propublica.org/article/spy-schools-how-the-cia-staged-sham-academic-conferences-to-thwart-iran-nuclear-program.

GovTrack, (2023). *S. 360: Stop Higher Education Espionage and Theft Act of 2023*. https://www.govtrack.us/congress/bills/118/s360.

Graziosi, G. (2023, June 20). *Ted Cruz under fire for Father's Day message where he celebrates dad's immigrant story – while "bashing other illegals".* The Independent (UK). https://www.independent.co.uk/news/world/americas/us-politics/ted-cruz-fathers-day-immigrant-post-b2360467.html.

Greene, A. (2017, October 9). *DFAT boss warns international students to resist Chinese Communist Party's "untoward" influence.* ABC News. https://www.abc.net.au/news/2017-10-09/universities-warned-to-resist-chinese-communist-party-influence/9030372.

Greene, A. (2022, February 10). *Intelligence officials identify Russian efforts to interfere in Australian politics*. ABC News. https://www.abc.net.au/news/2022-02-10/russia-foreign-interference-australian-election/100819910.

(2009). The Terrorist Threat to Pakistan's Nuclear Weapons. *CTC Sentinel, 2*(7), 1.

Greitzer, F. L. (2019). Insider Threats: It's the HUMAN, Stupid! *Proceedings of the Northwest Cybersecurity Symposium* 1.

Group of Eight (2021, November 29). *Submission No 14 to Parliamentary Joint Committee on Intelligence and Security Review of the Foreign Interference Transparency Scheme Act 2018*.

Group of Eight (2023, April 24). *Go8 Stands Ready to Advance Australia's Research Capabilities in line with AUKUS Pillar 2*. https://go8.edu.au/media-release-go8-stands-ready-to-advance-australias-research-capabilities-in-line-with-aukus-pillar-2.

Hartcher, P. (2021, December 14). *2021: the year in review* [Paper presentation]. RUSI NSW, Sydney, Australia. https://rusinsw.org.au/Papers/202112.pdf.

Hartman, G. (2010). Australian university research commercialisation: perceptions of technology transfer specialists and science and technology academics. *Journal of Higher Education Policy and Management, 32*(1), 69-71.

Harvey, L. (2020). Research fraud: a long-term problem exacerbated by the clamour for research grants. *Quality in Higher Education, 26*(3), 243.

Helou, A. (2019, November 7). *UAE launches "Edge" conglomerate to address its "antiquated military industry"*. Defense News. https://www.defensenews.com/digital-show-dailies/dubai-air-show/2019/11/06/uae-launches-edge-conglomerate-to-address-its-antiquated-military-industry/.

Hickman, C. F., Fong, E. A., Wilhite, A. W., Lee, Y. (2019). Academic misconduct and criminal liability: Manipulating academic journal impact factors. *Science and Public Policy, 46*(5), 661.

Hooker, R. D. (2005). Beyond "Vom Kriege": The Character and Conduct of Modern War. *Parameters, 35*(2), pp. 1-10.

Jakhar, P. (2019, September 7). Confucius Institutes: The growth of China's controversial cultural branch. BBC News. https://www.bbc.com/news/world-asia-china-49511231.

Joske, A. (2020). *Hunting the Phoenix: The Chinese Communist Party's Global Search for Technology and Talent*. Australian Strategic Policy Institute.

Kang, J. J. (2020, September 1). *The Thousand Talents Plan is part of China's long quest to become the global scientific leader*. The Conversation. https://theconversation.com/the-thousand-talents-plan-is-part-of-chinas-long-quest-to-become-the-global-scientific-leader-145100.

Karran, T. (2007). Academic Freedom in Europe: A Preliminary Comparative Analysis. *Higher Education Policy, 20*, 289.

Kendall, S. (2022). How Australia's foreign interference laws undermine press freedom, (2022) *Alternative Law Journal, 47*(2), 124.

King, R. (2023, June 25). *Ted Cruz urges House to impeach President Biden over damning Hunter text*. New York Post. https://nypost.com/2023/06/25/ted-cruz-encourages-house-to-consider-impeaching-president-biden/.

Kolata, G. (2023, April 26). *Ex-Harvard Professor Sentenced in China Ties Case.* New York Times. https://www.nytimes.com/2023/04/26/science/charles-lieber-sentence-china.html.

Kont, M., Pihelgas, M., Wojtkowiak, J., Trinberg, L., Osula, A.-M. (2015). *Insider Threat Detection Study.* NATOCCD COE. https://ccdcoe.org/library/publications/insider-threat-detection-study.

Kroenig, M. (2010). *Exporting the bomb: technology transfer and the spread of nuclear weapons.* Cornell University Press.

Lodge, D. (1964). *Small World: An Academic Romance.* Secker & Warburg.

Martin, N. (2023, March 31). *Three tiers and more than 8000 new engineers: what it will take to deliver AUKUS nuclear submarine program*. UNSW Sydney Newsroom. https://newsroom.unsw.edu.au/news/science-tech/three-tiers-and-more-8000-new-engineers-what-it-will-take-deliver-aukus-nuclear.

Matveeva, N., & Ferligoj, A. (2020). Scientific collaboration in Russian universities before and after the excellence initiative Project 5-100. *Scientometrics, 124*(3), 2383.

McFadden, C., Nadi, A., & McGee, C. (2018, July 24). *Education or espionage? A Chinese student takes his homework home to China*. NBC News. https://www.nbcnews.com/news/china/education-or-espionage-chinese-student-takes-his-homework-home-china-n893881.

Meijer, H. (2022). *Awakening to China's Rise: European Foreign and Security Policies toward the People's Republic of China*. Oxford University Press.

Mervis, J. (2019, April 26). *U.S. universities reassess collaborations with foreign scientists in wake of NIH letters*. Science. https://www.science.org/content/article/us-universities-reassess-collaborations-foreign-scientists-wake-nih-letters.

Mylvaganam, P. (2022, December 6).*The Threat to Public Interest Disclosure from the National Security Bill.* SOAS ICOP Policy Brief.
National Bureau of Asian Research (2023). *Commission on the Theft of American Intellectual Property.* https://www.nbr.org/program/commission-on-the-theft-of-intellectual-property/.
NIH Advisory Committee to the Director (2018, December). *ACD Working Group for Foreign Influences on Research Integrity*. https://acd.od.nih.gov/documents/presentations/12132018ForeignInfluences_report.pdf.
Parliament of Australia, *Explanatory Memorandum to the National Security Legislation Amendment (Espionage and Foreign Interference) Bill 2018*. Australian Government Printer.
Parliamentary Joint Committee on Intelligence and Security (2022, March). *Inquiry into National Security Risks Affecting the Australian Higher Education and Research Sector*. https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Intelligence_and_Security/NationalSecurityRisks/Report
QUT (2021, November). *Submission No 8 to Parliamentary Joint Committee on Intelligence and Security, Parliament of Australia, Review of the Foreign Interference Transparency Scheme Act 2018.*
Ranga, M., Temel, S., Ar, I. M., Yesilay, R. B., & Sukan, F. V. (2016). Building Technology Transfer Capacity in Turkish Universities: a critical analysis. *European Journal of Education, 51*(1), 94.
Ravlic, T. (2023, February 17). *ASIO opposes publication of its university monitoring activities*. The Mandarin. https://www.themandarin.com.au/212476-asio-opposes-publication-of-its-university-monitoring-activities/.
Reddy, N. M., & Zhao, L. (1990). International technology transfer: A review. *Research Policy, 19*, 285Roach, K. (2012). *The 9/11 Effect: Comparative Counter-Terrorism*. Cambridge University Press.
Reuters. (2022, December 12). *New Zealand Defence Force says it warned former staffer linked to South African flight school about security obligations*. ABC News. https://www.abc.net.au/news/2022-12-12/pilots-at-flight-school-linked-to-china-warned-by-new-zealand/101763788.
Ridd v James Cook University [2021] HCA 32; (2021) 95 ALJR 878. United Nations (2004). *Convention on Cybercrime*, opened for signature 23 November 2001, entered into force 1 July 2004, ETS 185.
Rogers, E. M., Takegami, S., Yin, J. (2001). Lessons learned about technology transfer. *Technovation, 21*(4), 253.
Saias, M. A. (2014). Unlawful acquisition of trade secrets by cyber theft: between the Proposed Directive on Trade Secrets and the Directive on Cyber Attacks. *Journal of Intellectual Property Law & Practice, 9*(9), 721, https://doi.org/10.1093/jiplp/jpu117.
Saul, B. (2010). The Kafka-esque Case of Sheikh Mansour Leghaei: The Denial of the International Human Right to a Fair Hearing in National Security Assessments and Migration Proceedings in Australia. *UNSW Law Journal, 33*(3), 629.
Schmidt, B. (2022). Building Australia's AUKUS-ready nuclear workforce. *Journal and Proceedings of the Royal Society of New South Wales, 155*(487-488), 193.
Schmitz, K. (2021). TRIPing on Trade Secrets: How China's Cybertheft of U.S. Trade Secrets Violated TRIPS. *American University International Law Review, 36*(4), 929.
Seebeck, L. (2023, February 3). *Making the most of AUKUS's second pillar*. The Strategist. https://www.aspistrategist.org.au/making-the-most-of-aukuss-second-pillar/.

Seeley, B. E. (2003). Historical Patterns in the Scholarship of Technology Transfer. *Contemporary Technology Transfer and Society, 1*(1), pp. 7-10.

Shah, S. (2020, November 26). UK national security bill could disrupt tech deal-making, experts say. *SNL Kagan Media & Communications Report*.

Shields, J. (2018). Smart machines and smarter policy: foreign investment regulation national security and technology transfer in the age of artificial intelligence. *John Marshall Law Review, 51*(2), 279-291.

Shoebridge, M. (2021). What is AUKUS and what is it not? How does it connect to the Quad, the Sydney Dialogue, ASEAN and Indo-Pacific security? *ASPI Strategic Insights*. https://www.aspi.org.au/report/what-aukus-and-what-it-not

Smith, M., & Walsh, P. (2023). Security sensitive research: balancing research integrity, academic freedom and national interest. *Journal of Higher Education Policy and Management, 8*, https://doi.org/10.1080/1360080X.2023.2202328.

Stockmarr, L. (2013, September 7-10) *Scattering pacification: Israel's transmission of ideas at security fairs* [Conference session]. Emerging Aspects in Information Security conference, Warsaw.

Stone, D. (2001). *Learning Lessons, Policy Transfer and the International Diffusion of Policy Ideas*. CSGR Working Paper No. 69/01. https://core.ac.uk/download/pdf/47537.pdf.

Tehan, D. (2019, August 28). *Taskforce to protect universities from foreign interference.* https://www.education.gov.au/guidelines-counter-foreign-interference-australian-university-sector/resources/development-university-foreign-interference-taskforce-media-release.

The White House (1984). *National Security Decision Directive 189: National Policy on the Transfer of Scientific, Technical and Engineering Information* (US).

Thomas, J. E., Wittkopf, A., Dobbins, J., Rivera, R., Gamache, K. (2019, April 21). *Recommendations to Address Government Concerns Regarding Intellectual Property Theft from American Research Universities by China and Other Foreign Entities while Preserving the Process of Fundamental Research.* The Association of American Universities.

Thomson, V. (2023, February 2021). *Opening Statement to the Parliamentary Joint Committee on Intelligence and Security Review of the Foreign Influence Transparency Scheme Act 2018*. https://go8.edu.au/opening-statement-to-the-parliamentary-joint-committee-on-intelligence-and-security-review-of-the-foreign-influence-transparency-scheme-act-201-vicki-thomson.

TNS (2022, June 7). National Security Bill Threatens Free Expression. *Targeted News Service*. https://www.proquest.com/docview/2673549895.

Truex, R. (2020). *Addressing the China Challenge for American Universities.* Johns Hopkins Applied Physics Laboratory.

UK Cabinet Office (2021, July 2). *Global Britain in a Competitive Age: the Integrated Review of Security, Defence, Development and Foreign Policy*. https://www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy/.

UK Cabinet Office (2022, December 15). *Policy Paper: National Cyber Strategy 2022*. https://www.gov.uk/government/publications/national-cyber-strategy-2022.

UK Home Office (2021, May 13). *Legislation to Counter State Threats (Hostile State Activity)*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/986013/Consultation_Document_-_Legislation_to_Counter_State_ Threats.pdf.

Ulhøi, J., Neergaard, H., & Bjerregaard, T. (2012). Beyond unidirectional knowledge transfer: An empirical study of trust-based university–industry research and technology collaboration. *The International Journal of Entrepreneurship and Innovation, 13*(4), 287.

Ulven, J. B., & Wangen, G. (2021). A systematic review of cybersecurity risks in higher education. *Future Internet, 13*(2), 39.

United Kingdom Security Vetting (2022, November 25). *Existing clearance holders.* https://www.gov.uk/guidance/united-kingdom-security-vetting-existing-clearance-holders Universities Australia (2021, November 29). *Submission No 10 to Parliamentary Joint Committee on Intelligence and Security Review of the Foreign Interference Transparency Scheme Act 2018*.

University of Melbourne (2021, November 29). *Submission No 16 to Parliamentary Joint Committee on Intelligence and Security Review of the Foreign Interference Transparency Scheme Act 2018*.

University of NSW (2021, November). *Submission No 7 to Parliamentary Joint Committee on Intelligence and Security Review of the Foreign Interference Transparency Scheme Act 2018*.

Xiaochen, X., & Hong, C. (2022). The AUKUS Trilateral Security Partnership: Features, Implications and Prospects. *China International Studies, 94*, 48.

Wahab, S. A. (2012). Defining the Concepts of Technology and Technology Transfer: A Literature Analysis. *International Business Research, 5*(1), pp. 61- 62.

Walker-Munro, B., & Kendall, S. (2023, May 4). *Could using open-source information online get you arrested for foreign interference?* The Conversation. https://theconversation.com/could-using-open-source-information-online-get-you-arrested-for-foreign-interference-204548.

Warkentin, M., & Robert Willison, R. (2009). Behavioral and policy issues in information systems security: the insider threat. *European Journal of Information Systems, 18*(2) 101-102, https://doi.org/10.1057/ejis.2009.12

Webber, F. (2023). Policing rights in the UK 2022: an audit. *Race & Class, 64*(4), 101.

White, S. (2020). God-Like Powers: The Character Test and Unfettered Ministerial Discretion. *Adelaide Law Review, 41*(1), 1.

Worrall, L., Gamble, H., Spoehr, J., & Hordacre, A.-L. (2021). *Australian sovereign capability and supply chain resilience: perspectives and options* Australian Industrial Transformation Institute.

Zweig, D., & Kang, S. (2020). *America challenges China's national talent programs*. Center for Strategic and International Studies.

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Examining Chief Academic Officers' Reasons for Remaining or Exiting Their Positions

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Leaders of the academic affairs side of higher education institutions are usually referred to as Provosts, Vice Presidents for Academic Affairs (VPAA), Provosts and Vice Presidents of Academic Affairs, Chief Academic Officers (CAO), or some variation on those titles. In each instance, they represent the principal stewards of their institution's academic programs and bear direct responsibility for initiating, implementing, and sustaining a college or university's academic priorities and allocating resources to support those priorities. For the purpose of consistency, the term Chief Academic Officer (CAO) appears here throughout.

The average length of service for a Chief Academic Officer is 4.6 years, which is briefer than a President's average term of 6.7 years (Clayton, 2019). Along with Deans and Directors of Schools and Colleges of Education, CAOs demonstrate the highest turnover rate (Higher Education Publications, 2018).

Some CAOs continue to serve in these challenging roles notably longer than the average term of office, while others fall short of this average (Bartanen, 2019). This wide variation begs the question of what factors contribute to chief academic officers' interest and ability to remain in their administrative positions beyond relatively brief periods of time. In effect, responses to this question address the construct of *longevity* (i.e., the duration of time in the position of a chief academic officer) and the potential impact that endurance in the office exerts on the welfare, as well as the growth and development, of their institutions. Such a construct warrants further study considering that: (a) resilience in such a vital role represents one indicator of sustained effectiveness whereas brevity could suggest the opposite; (b) lack of longevity in the role could be a reflection of the time-consuming and all-encompassing demands placed upon CAOs; and (c) there could be important benefits to institutions if those in positions to affect the tenure of CAOs, especially the most influential ones, better understand factors that contribute to these academic leaders remaining in office (Henk et al., 2022).

The present study aims to identify reasons why CAOs would choose to stay or exit their positions, not to advocate for longevity in the position per se. This approach presupposes CAOs can make such a decision for themselves rather than having it made for them. The underlying premise is that if certain favorable factors are in place, and CAOs are successful, the most desirable leadership might be retained, with the understanding that the quality of service in the CAO's position is more important than the duration of service.

Roles, Responsibilities, and Characteristics of Chief Academic Officers

In effect, CAOs lead the campus's intellectual community. They anticipate future developments for higher education, identify the threats and opportunities of such developments, create plans, and determine the necessary resources for responding creatively and effectively. They make sure that the administrative and support operations of the institution run as smoothly as possible. CAOs also support and help to recruit faculty, resolve personnel matters, facilitate tenure and promotion decisions, balance budgets, arbitrate demands for facilities, oversee strategic planning and evaluation activities, and establish and coordinate policies and procedures. These high-level administrators oversee the faculty and serve as their key representative to central administration, while acting as central administration's spokesperson to the faculty (New England Board of Higher Education, 2015).

CAOs should come to their positions with prior full-time faculty experience with at least the rank of associate professor, a doctorate or equivalent, a record of research and publications, academic management experience, as well as budget development background and accountability in order to have credibility (New England Board of Higher Education, 2015). They need to be tactical and interpersonally savvy leaders who can shepherd the faculty, the administrative team, and the president in directions that support continued growth and innovation for the institution's academic area without jeopardizing relationships that are so critical for moving initiatives forward.

Literature on Longevity of CAOs

As noted earlier, studies about CAOs' longevity indicate a short shelf life in the position (Bartanen, 2019; Boyles, 2011; New England Board of Higher Education, 2015; Schmidt, 2009). The CAO position is considered one of the most difficult jobs on college and university campuses because, as in-house leaders, they are deemed to be the driving force for what institutions attempt to do on the whole (Carlson, 2019; Clayton, 2019; Jaschik, 2018).

Existing investigations have explored CAOs' duration in their positions, their major roles and responsibilities, their challenges, and their career paths and aspirations (American Council on Education, 2016; Bauman & Williams, 2019; Busta, 2019; Inside Higher Ed & Gallup, 2020: Inside Higher Ed & Hanover Research, 2021; McBain et al., 2019; Pritchard et al., 2019). However, these studies have not surveyed CAOs to identify reasons that would contribute to staying or exiting their roles, which presumably could be a function of the individual's predispositions and specific context. On that count, factors that are most pressing for the institution could affect the CAO's self-perceived ability to navigate and thrive in the particular work environment.

Impetus for the Study

The present study builds upon 11 years of previous work involving the leadership practices, characteristics, and longevity of academic deans (Henk et al., 2017, 2022; Wepner & Henk, 2020; Wepner et al., 2008, 2011, 2012, 2014, 2015, 2020). The findings from the most recent study indicated that *Job Satisfaction* (and its converse, Job Dissatisfaction) emerged as the multifaceted,

overarching factors that influenced deans' thinking about continuing or discontinuing their service. Two reasons that appeared especially critical for deans both to stay in or exit from their positions were support from upper administration and support from faculty and staff. The researchers concluded that a logical next step would be to study CAOs' perceptions about their own longevity to better understand the benefits of, and impediments to, central administrative success at higher education institutions (Henk et al., 2022).

Methods

The longevity data were collected with the assistance of four professional organizations that have CAOs as members: the American Conference of Academic Deans (ACAD), the Association of Chief Academic Officers (ACAO), the American Association of State Colleges and Universities (AASCU), and the Association of Public and Land-grant Universities (APLU). ACAD, recently open to all academic officers, provides academic leaders committed to the ideals of a liberal arts education with networking and professional development opportunities to support them in their work. ACAO is a leading professional organization for CAOs across all sectors of higher education, nationally and internationally. It provides networking and professional development opportunities in conjunction with the American Council on Education. AASCU is the collective voice of nearly 400 public colleges, universities, and systems to promote understanding of and support for public higher education and its unique role in providing affordable, high-quality education. APLU, North America's oldest higher education association, promotes a greater understanding and appreciation of the value of public research and land-grant universities and advocates for resources and public policy to strengthen their impact.

Each organization sent an email with the survey link to their current members, targeted specifically to those serving as CAOs to request their participation in the survey. The partners explained that the survey would examine the perception of factors that would promote their choosing to remain in office and those that would contribute to a decision to exit. Respondents were told that the anonymous survey should take no more than 20 minutes to complete and that results would be shared with the organizations once finalized. A follow-up email was sent two to three weeks later. Emails were sent between February and March 2022.

Instrumentation. The *Chief Academic Officer Longevity Survey* was created to determine the factors that would likely influence these central administrators to stay or exit their positions. In short, the survey included prompts for demographic information, the target longevity items, and two follow-up questions.

The first part of the survey asked CAOs about their gender, age range, race/ethnicity, and their highest degree earned. In addition, they were questioned about whether their institution was public or private and its Carnegie classification. Information was then sought on the approximate enrollment of their institution, and its geographic region of the United States. Additionally, they were queried about the number of years in their current role, how long they had served under the current president, how many presidents they had served under, the position they held immediately prior, and their length of service in their previous position. They were also asked about membership in each of the aforementioned organizations.

The core of the survey consisted of items derived from a prior survey of the longevity of academic deans (Henk et al., 2022), as well as new items that resulted from telephone interviews with five professionals who were either currently in a CAO role or had served in that capacity recently. The items for the Dean survey spanned factors pertaining to belief in the institution, its political climate, the support of upper administration, feeling trusted and worthy of confidence, the availability of resources, the capacity to exert an impact through advocacy, the gratification of interpersonal relationships, student considerations, one's orientation toward challenges and goals, and personal considerations like finance, health, and age.

The five CAO interviewees confirmed the suitability of 22 of the 26 dean item categories for this current survey. Additionally, 14 new item categories were added to account for CAOs' differing stakeholder relationships. Specifically, those stakeholders were the President, the Trustees, faculty and staff of the entire University, students and student associations, faculty governance groups and their leaders, parents, administrative vice presidents, the senior financial administrator, the full set of academic deans, and major donors. In total, the process resulted in 36 longevity categories.

Each of the reasons, whether related to staying or exiting their positions, could be stated in the contrary. That provision allowed for the generation of pairs of items in which one item articulated a reason conducive to staying while the other articulated a reason to exit (e.g., The President has appropriate expectations for you; The President does not have appropriate expectations for you). The 36 pairs resulted in 72 target items. Although it was suspected that the factors would, as a general rule, tend to exert a relatively equal impact on staying (e.g., positive relationships with faculty governance groups and their leaders) or exiting (e.g., strained relationships with faculty governance groups and their leaders) in their roles, the possibility certainly existed that a factor could be notably more salient to one or the other inclination.

The Likert-type choices for the survey items ranged from Absolutely Important (coded as a 6 for analysis) to Not At All important (coded as a 0). Along the continuum were choices for Very Important, Moderately Important, Neutral, Somewhat Unimportant, and Hardly Important, and these choices corresponded to values of 5, 4, 3, 2, and 1, respectively. To maintain the directionality of the Likert responses relative to the item intent and the set of instructions, the prompts were separated so that each of the stay items appeared in the first section of the survey and each of the corresponding exit items appeared in the second section. As a result, two scales were created, Stay and Exit, and items were randomly ordered within each scale.

Each section had its own set of directions. In the first, the CAOs were asked to respond as if the statements which followed were true of their work situation. Then they were asked to consider how important the ideas in each statement would be in a decision to stay in their role as CAO. For the second section, the CAOs were again asked to assume that the statements were true of their situation, but this time they were to consider how important the idea would be to a decision to exit their role.

Two further open-ended prompts were provided to the respondents: first, to identify any other factors not previously mentioned that would impact their decision to stay in their role, and second, to note any unmentioned factors that would impact their choice to exit their role.

Analyses. Percentages were computed for each of the personal demographic prompts and means and standard deviations were calculated for the 72 target items, half of which were written as likely incentives to remain in the role, whereas an equal number were framed as disincentives. Moreover, Pearson Product-Moment correlations were used to explore the relationships between these matched pairs of items, controlling for most demographic variables represented in the survey. All but one of the coefficients proved to be significant, indicating 97% of the item pairs were meaningfully associated.

Multiple linear regression techniques were deployed to ascertain possible significant differences in the way that CAOs responded to the target longevity items as a function of the personal and institutional demographic information that they reported. For each set of items, three analyses were conducted: (a) the Stay prompt served as the dependent variable and all demographic characteristics were treated as independent variables; (b) the Exit prompt represented the dependent variable and all demographic characteristics served as independent variables; and (c) the Stay prompt served as the dependent variable and the Exit prompt plus all demographic characteristics were treated as independent variables (which, in effect, allowed for an examination of the correlation of the pairs controlling for all of the demographic characteristics).

In addition, exploratory factor analysis procedures were conducted for the Stay scale and the Exit scale. The intent here was to establish whether there were one or more underlying psychological factors contributing to the CAOs' response patterns relative to longevity. Finally, open coding was used to organize the qualitative data, namely, the open-ended responses to factors that the CAOs believed were not addressed either in the Stay or Exit target items.

Results[1]

Participants. A total of 316 CAOs completed the survey. Some 42% (N=134) identified themselves as Provosts and Vice Presidents for Academic Affairs, 24% (N=76) identified themselves as Provosts, 19% (N= 59) identified as Vice Presidents for Academic Affairs, 9% (N=28) identified as Chief Academic Officers, 3% (N=9) identified as Associate/Vice Provosts, and 3% (N=10) identified themselves as Other.

Some 58% of the respondents identified as female, 41% identified as male, and 1% identified as other. By age, 85% of the respondents indicated that they were 50 years or older and 32% indicated that they were 65 years or older. And along racial lines, 82% of the respondents identified as White, 10% identified as Black, 4% identified as Hispanic, 3% identified as Asian/Pacific Islander, and 2% identified as Other.

A majority (86%) of the respondents held a PhD (78%) or an EdD (8%). Their major areas of doctoral study were Humanities/Fine Arts (21%), Education (15%), Biological Sciences (8%), and Physical/Natural Sciences (6%). Other areas of study were spread widely in small numbers, with the fewest occurring in the Health Professions (4%), Business (3%), Engineering (3%), and Medicine (1%).

[1] All calculations for demographic items, measures of central tendency, and factor analyses are available from the corresponding author upon request.

Fifty-three percent of the respondents were working at public institutions and 47% at private institutions. The Carnegie Classification of the institutions varied from Associate to R1: Doctoral Universities (very high research activity), with most indicating that they were working at Baccalaureate institutions. A majority (53%) worked at institutions serving between 1,000 and 4,999 students. An equal number (14%) were working at institutions with either 5,000-9,999 students or 10,000-19,999 students. The regional representation included 41% of respondents from the East coast (Northeast, Mid-Atlantic and Southeast), 28% from the West coast (West, Pacific Northwest, and Southwest), and 26% from the Midwest.

The average number of years that the respondents had served in their current position was 3.9 years, with a range of .5 years to 16 years. On average, they had worked with their current president for 3.4 years. In general, 70% indicated that they have served with one president, 21% with two presidents, and 9% with three or more presidents. Thirty-four percent of the respondents had previously served as a dean and 24% as an Associate or Assistant Provost. Some 16% already were a CAO or equivalent, 10% had been a department/division head or chair, and 3% were Associate or Assistant Deans. Thirteen percent did not specify their previous position. The average number of years reported for serving in their prior role was 5.2 years.

Reasons for Staying and Exiting the CAO Position. Overall, the means were high for most items. Some 22 of the 36 items for staying had means of 5 or above (very important) on the 0 to 6 Likert scale, and 34 items had means of 4 or above (moderately important). On the exit side, 16 of its 36 items had means of 5 or above and 32 items had means of 4 or above. There were only 2 means below 4 on the stay side and 4 on the exit side. Of special note, factors related to the President (i.e., support, input, confidence in) were most important to both staying and exiting.

Staying — Support from the president (M=5.58), the opportunity to make a noteworthy difference (M=5.54), being valued by the president for input (M=5.48), having confidence and trust in the president (M=5.44), and believing in the institution (M=5.43) were the top five reasons identified for staying in the role of CAO. Given that three of the top reasons centered specifically on the president, it is fair to say that this relationship is integral to the likelihood of CAOs remaining in their role.

The second tier of very important reasons for staying in the role of CAO included trusted leadership to provide stability (M=5.39), feelings of role relevance (M=5.38), effective work with faculty and staff (M=5.35), satisfactory physical and mental health (M=5.32), and an effective leadership team (M=5.32). This set of reasons focused more on the CAOs' self-assessment of their leadership, and in relation to their capacity to work with others. A dozen other items were noted as very important (5 or above), from the joy of the position (M=5.31) to cooperative relationships with administrative vice presidents (M=5.0), indicating that 22 of the 36 (61%) of the factors gauged by the survey were considered imperative for continuing in the role.

The five least important reasons for CAOs staying in their positions, designated as neutral or moderately important, dealt with concerned parents (M=3.51), work benefiting from major donors (M=3.55), positive relationships with students and student associations (4.47), limited Trustee influence on academic matters (M=4.52), and manageable financial considerations at the institution (M=4.57).

Exiting — Lack of support from the president (M=5.66), a belief that the president does not value one's input (M=5.59), lack of confidence and trust in the president (M=5.47), confidence lost in the institution (M=5.38), and a belief that one's leadership is no longer trusted to provide stability (M=5.37) were the top five reasons for exiting. The top three reasons for exiting focused similarly on the CAO's relationship with the president.

The second tier of very important reasons for exiting the role included waning physical and mental health (M=5.31), inappropriate expectations of the president (M=5.31), lack of support from faculty and staff (M=5.29), ineffective work with faculty and staff (M=5.23), and a feeling of irrelevance in the role (M=5.20). This set of reasons focused more on the CAOs' self-assessment of their ability to function in the role in relation to their own health, the president's expectations, and their perceived effectiveness with their faculty and staff. Six additional items were noted as very important (5 or above), from diminished ability to make an appreciable difference (M=5.13) to a belief that one's institutional experiences are not contributing sufficiently to being an effective advocate for academic affairs (M=5.01), indicating that 16 of the 36 (44%) factors presented in the survey were seen as very important impediments to succeeding in the role, thereby prompting CAOs to consider exiting their positions.

The five least important reasons for exiting from CAO positions, which were considered moderately important, neutral, or somewhat important, included dealing with concerned parents (M=2.87), seeking a higher-level position (M=3.75), interference of major donors with one's work (M=3.81), lack of positive relationships with students and student associations (M=3.90), and lack of reliably competent deans (M=4.46).

Three items fell both into the top items for staying *and* into the top items for exiting: (1) support from the president, (2) input valued by president, and (3) confidence and trust in the president. Similarly, three items fell both into the bottom reasons for staying and the bottom reasons for exiting: (1) dealing with concerned parents, (2) work benefits from major donors, and (3) relationships with students and student associations.

Demographic Influences — Based upon the series of multiple regression analyses that were conducted, the demographic characteristics that appeared to have the greatest influence on the reasons to stay and/or exit the CAO's position were: gender (female vs. male), race/ethnicity (white vs. non-white), age, length of time served in their previous role, and length of time in their current role. More specifically, on average the following trends were observed: (a) female CAOs rated the capacity to exert an impact through advocacy, student relationships, and workload as more important for staying, as well as burnout, lack of support from the president and their academic deans as more important for exiting than their male counterparts; (b) older CAOs rated advocacy and relationships as more important for staying than younger CAOs; (c) CAOs of color rated competent deans, work benefits of major donors, financial concerns at the institution, physical and mental health, and sufficient personnel and resources as more important for staying and personal needs not being met as more important for exiting than white CAOs; and (d) longer-serving CAOs rated advocacy, belief in the institution, and faculty and staff support as more important for staying than short-term CAOs, whereas short-term CAOs rated effective work with the senior financial

officer, manageable personnel matters, and meeting one's personal needs as more important for staying than long-term CAOs.

Factor Analyses — The final statistical undertaking utilized exploratory factor analyses for the Stay scale items and the Exit scale items. The intent was to examine the underlying psychological factor structure of the longevity construct as evidenced by the responses of the CAOs. The factor analyses indicated one major factor decidedly at work in staying in the CAO position or what is defined here as longevity. The highest factor loadings were notably greater for Factor 1 than for any other factors revealed by that analysis. This factor was interpreted to be overall *job satisfaction.* There were minor secondary factors at work, notably resources to do the job and the relationship with the president, but they were not nearly on the order of Factor 1.

On the Exit scale, the factor loadings for half of the items fell into its respective Factor 1, or *job dissatisfaction* as the reason for exiting the position. However, there were other factors that appeared to contribute notably as reasons for exiting the position: feelings of irrelevance, burnout, and lack of joy in position (Factor 2); relationships with others and a readiness for change (Factor 3); increased workload and exhaustion (Factor 4); and the relationship with the president (Factor 5), which produced the second highest factor loadings.

Overall, one general, multifaceted factor accounted for reasons CAOs would stay, whereas for the exit scale, although there is still a general factor, four others clustered in the aforesaid themes. Global satisfaction or dissatisfaction with the position represents an aggregate of multiple, narrower perceived causes contributing to staying in particular, but also to exiting. In effect, CAOs generally will stay if they find the work satisfying. However, if the relationship with the President is not desirable, if they don't feel they can make a difference, and if they find the work taking a personal toll, exiting the role would be considered. Other factors such as a lack of joy in the position, relationships with others, and a readiness for change would also contribute to reasons for exiting the position.

Other Possible Longevity Factors — When asked to list any reasons that were not addressed in the Stay scale, the CAOs identified the following: appropriate compensation, family needs being met, family support, ability to make autonomous decisions, additional characteristics of the president (e.g., integrity, optimism, and mentorship), loyalty to the institution, the institution's commitment to diversity, equity, and inclusion, engaging in meaningful professional development, and geographical location of the institution.

The CAOs' responses to overlooked reasons in the Exit scale largely resembled the Stay omissions, but in reverse. These reasons included: lack of appropriate compensation, family needs not being met, family crises, inability to work autonomously, additional characteristics of the president (e.g., lack of integrity and inability to do the job), lack of professional development opportunities, fiscal exigency, new opportunities elsewhere, institutional stagnation, and lack of commitment to diversity, equity, and inclusion.

Overall, compensation (i.e., salary and benefits), family considerations, and presidential characteristics appeared most frequently as untapped factors for staying in the position, whereas

family, presidential characteristics/transitions, and compensation appeared most frequently as reasons for exiting.

Discussion and Implications

To qualify the findings, it is important to keep in the mind the characteristics of the sample. A majority of the respondents were White females with PhDs who were 50 years or older. They were evenly split in serving at public or private US institutions. Their institutions ranged from Associate to R1 Doctoral with a majority serving between 1,000 and 4,900 students. They were serving in their current positions for 3.9 years, which is lower than the reported mean of 4.6 years (Clayton, 2019), and they were serving with their current presidents for 3.4 years. These findings are somewhat consistent with previous studies about CAOs' lifespan in the position (Bartanen, 2019; Boyles, 2011; Inside Higher Ed & Gallup, 2020; New England Board of Higher Education, 2015; Schmidt, 2009).

In addressing the question of the factors that contribute to CAOs' interest and willingness to stay in their administrative positions beyond relatively brief periods of time, a major factor of *Job Satisfaction* arose. This multifaceted conceptualization encompasses a constellation of elements related to a capacity to be effective and being trusted to do so, enjoying constructive relationships, especially with the President, as well as faculty and staff, and the garnering of necessary resources to do the job. These combined beliefs contribute to CAOs feeling gratified enough to remain content in their current positions. If, however, the relationship with the President is not healthy, CAOs feel that they cannot make a difference, and find the work taking a personal toll, they would consider leaving.

Its converse, both by logical extension and by formal empirical analysis, *Job Dissatisfaction* surfaced as one of the organizing factors for CAOs' reasons for exiting their positions. Other elements that appeared to contribute appreciably to a CAO's decision to exit the position were lack of support, a belief that one's leadership is no longer trusted, ineffective work with faculty and staff, increased workload, and above all, a disappointing relationship with the president.

The means of the target items reinforced what was especially critical for CAOs to stay in and/or exit from their positions: (a) support from the president, (b) input valued by president, and (c) confidence and trust in the president. Support from presidents was perceived as important for the CAOs to remain in their positions, just as the perceived absence of those three circumstances served as reasons for departing the position. Staying power in the role seemed to be dependent on these feelings about this important source of support.

Beyond the target items, CAOs' open-ended comments further revealed that compensation (salary and benefits), family considerations, and presidential characteristics/transitions were important considerations for staying or exiting from their positions. Female CAOs indicated that lack of support from the president would prompt them to exit sooner than their male counterparts.

Three items that were not rated as important for either staying or exiting were dealing with concerned parents, work benefitting from major donors, and relationships with students and student associations. While the CAOs in general did not seem to envision that their interactions with parents, donors, or students would affect their longevity in their positions, female CAOs did

rate student relationships as important for staying in their positions. Moreover, CAOs of color rated the work benefits of major donors as important for staying in their positions.

While the CAOs who participated, on average, would not be considered long-serving, they communicated, through their responses, that their job satisfaction and eventual longevity would be largely dependent on a mutually rewarding relationship with their president. They also needed to believe that they were making a noteworthy difference for an institution they still believed in, and that they were regarded as trustworthy leaders who were instrumental in providing stability for the oversight of the academic enterprise. Their effective work with faculty and staff and their own leadership team, coupled with their physical and mental health, appeared to be critical reasons for remaining in their positions.

Conversely, if these CAOs were to perceive a diminution of mutual support and respect from the president, a loss of confidence in the institution, or a belief that their leadership was no longer valued, possibly because of a lack of support from their faculty and staff, they would be predisposed to exiting their positions. These findings support the understanding that CAOs are the highest-ranking individuals in colleges and universities responsible for shepherding all facets of the academic side of their institutions. As they work hand in glove with the president to ensure that the institution's academic endeavors are adequately supported and celebrated, they must also work with their own constituents to align initiatives with the president's vision. Unlike the corporate world, their decision making, especially if seen as objectionable by faculty and staff, can cost them the trust they need from their stakeholders to maintain their credibility (Martin & Samuels, 2015).

Inasmuch as the CAO position is considered one of the most difficult jobs on college and university campuses (Carlson, 2019; Clayton, 2019; Jaschik, 2018), the professionals holding these roles need to have a unique set of skills. This repertoire would contribute to working strategically and judiciously with all stakeholders, so as to be seen as having a balanced perspective that helps to buoy all programs without doing unnecessary harm to less-alluring educational offerings. As with academic deans, who essentially are middle managers and an integral part of CAOs' success, CAOs need to demonstrate that they have intellectual acumen, emotional stamina, social grace, and a strong moral compass (Wepner & Henk, 2022). In other words, they need to have mature egos that allow them to invoke different dimensions of their leadership to adapt proficiently to their professional environment. Their professional identities, attributes, and capacities, stemming from their mature ego, will contribute to their job satisfaction and longevity (Wepner & Henk, 2022). Essentially, the notion of a mature ego calls upon CAOs to be strategists in that they define problems, know to work within existing relationships, and have a sense of duty to their role and their institution. They are also aware of the importance of emotion as they make decisions (Loevinger, 1976). In effect, a mature ego integrates four dimensions—intellectual, emotional, social, and moral. It intuitively knows when to depend on one over the other within one's context and creates solutions that are mutually supportive of colleagues and the institutional context (Loevinger, 1976; Wepner et al., 2008). The more that CAOs understand how their leadership characteristics affect their decision making, the easier it will be for them to lead proactively and flexibly, rather than reactively.

In addition to CAOs' reflection on and development of their own leadership capabilities, presidents need to realize the criticality of their endorsements for empowering their CAOs to lead. They need

to be willing and able to support, mentor as needed, and guide their CAOs so that they are positioned for success. Additionally, presidents should support their CAOs' networking and professional development opportunities. CAOs' networking with job-alike colleagues outside their institutions provides peer support for giving and taking advice. For instance, the four organizations that served as partners in this study provide formal professional development activities such as leadership institutes, seminars, and workshops that offer support and reinforce ideas about upper-level leadership. Formal mentoring relationships offer encouragement in professional and personal development and assist with general knowledge and skills. Likewise, providing executive coaching can be beneficial to CAOs. Constructive performance appraisals also can be a motivating element if they are intended to provide guidance for improvement and are offered predominantly in a spirit of affirmation. As difficult as it might seem, CAOs should preferably be encouraged to pursue their own professional development in the form of scholarship or artistry so that they can stay in touch with their academic disciplines.

In sum, the leadership that CAOs bring is essential to the success of the heart and soul of institutions of higher education. CAOs must navigate up, down, and sideways by engaging regularly with the president, their own leadership team, faculty, staff, students, and other senior officials so that they have the necessary resources and support to sustain current initiatives and cultivate new opportunities. If CAOs feel satisfied with their positions, because of support from all directions, and especially the president, which most likely reflects their own leadership acumen, they will endure in their positions to the benefit of all parties concerned.

There was one particular limitation with the survey worth noting, which was the unevenness of the representation of CAOs from different types of institutions across different geographical regions. This imbalance could conceivably affect the generalizability of the findings.

Looking to the future, studies of Presidents' longevity would help to provide a better understanding of the benefits and impediments of upper-level central administrative success at higher education institutions. Given that leadership stability promotes continuity and consistency, it is fitting for the higher education community to continue to study ways in which those possessing the most administrative authority can navigate their institutions to reach their full potential.

References

American Council on Education. (2016, February 24). *Infographic series highlights CAOs' background, job duties and career paths*. https://www.acenet.edu/News-Room/Pages/Infographic-Series-Highlights-CAOs-Background-Job-Duties-and-Career-Paths.aspx

Bartanen, K. (2019, October). Achieving a successful CAO transition. *ACAD for Academic Leaders.* https://acad.org/resource/achieving-a-successful-cao-transition/

Bauman, D., & Williams J. A. (2019, January 13). The provost's path: How more than 200 scholars reached the provost's office, and where they went next. *The Chronicle of Higher Education.* https://www.chronicle.com/article/the-provost-s-path?cid2=gen_login_refresh&cid=gen_sign_in

Boyles, L. C. (2011). *Leaders in demand: A study of the turnover of presidents and provosts in institutions that are members of the American Association of State Colleges and Universities.* [Doctoral dissertation, Ohio University]. https://etd.ohiolink.edu

Busta, H. (2019, January 23). There's no standard path to — or from — the provost's office. *Higher Ed Dive*. https://www.highereddive.com/news/theres-no-standard-path-to-or-from-the-provosts-office/546630/

Carlson, S. (2019, November 8). Why being a provost is one of the toughest jobs at vulnerable colleges. *The Chronicle of Higher Education*. https://www.chronicle.com/article/why-being-a-provost-is-one-of-the-toughest-jobs-at-vulnerable-colleges/

Clayton, V. (2019, July 3). 7 ways the provost's job is bigger and broader than ever before. *University Business Magazine.* https://universitybusiness.com/7-ways-the-provosts-job-is-bigger-and-broader-than-ever-before/

Henk, W. A., Wepner, S. B., & Ali, H. S. (2022). Academic deans' perceptions of factors contributing to longevity in their positions. *The Journal of Higher Education Management, 37*(1), 36-59.

Henk, W., Wepner, S. B., Lovell, S., & Melnick, S. (2017). Education deans' beliefs about essential ways of thinking, being, and acting: A national survey. *Journal of Higher Education Management, 32*(1), 195-213.

Higher Education Publications Inc. (2018, August 8). College administrator data/turnover rates: 2016-Present. *Higher Education Publication.* https://hepinc.com/newsroom/college-administrator-data-turnover-rates-2016-present/

Inside Higher Ed & Gallup. (2020). 2020 survey of college and university chief academic officers. *Inside Higher Ed.* https://www.insidehighered.com/news/survey/2020-inside-higher-ed-survey-chief-academic-officers

Inside Higher Ed & Hanover Research. (2021). 2021 survey of college and university chief academic officers. *Inside Higher Ed*. https://www.insidehighered.com/node/360576/download/21b6c0c63879f26c79f05a86aa67e4c6

Jaschik, S. (2018, January 24). The pressure on provosts. *Inside Higher Ed | Higher Education News, Career Advice, Jobs*. https://www.insidehighered.com/news/survey/2018-inside-higher-ed-survey-chief-academic-officers

Loevinger, J. (1976). *Ego development: Conceptions and theories.* John Wiley.

Martin, J. & Samuels, J. E. (2015, June 29). The short life of a provost: A Q&A on new challenges for chief academic officers. *New England Board of Higher Education.* https://nebhe.org/journal/the-short-life-of-a-provost-a-qa-on-new-challenges-for-chief-academic-officers/

McBain, L, Hartley III, H. V., Pannell, K. E., & Whatley, K. M. (2019, October). A study of chief academic officers at independent colleges and universities, 2009-2019. *The Council of Independent Colleges.* https://www.cic.edu/r/cd/Pages/cao-report-2019.aspx

New England Board of Higher Education. (2015, June 29). The short life of a provost: A Q&A on new challenges for chief academic officers. *New England Board of Higher Education.* https://nebhe.org/journal/the-short-life-of-a-provost-a-qa-on-new-challenges-for-chief-academic-officers/

Pritchard, A., Li, J., McChesney, J., & Bichsel, J. (2019, April). Administrators in higher education annual report: Key findings, trends, and comprehensive tables for the 2018-19 academic year. *CUPA-HR.* https://www.cupahr.org/surveys/results/

Schmidt, P. (2009, February 10). Survey of chief academic officers raises concerns about diversity and longevity. *The Chronicle of Higher Education.* https://www.chronicle.com/article/survey-of-

chief-academic-officers-raises-concerns-about-diversity-and-longevity-1518/?cid2=gen_login_refresh&cid=gen_sign_in

Wepner, S. B., D'Onofrio, A., & Wilhite, S.C. (2008). The leadership dimensions of education deans. *Journal of Teacher Education, 59*(2), 153-169.

Wepner, S. B., & Henk, W. A. (2020). Education deans' perspectives on factors contributing to their longevity. *Tertiary Education and Management*, *26*(4), 381-395. https://doi.org/10.1007/s11233-020-09059-9

Wepner, S. B., & Henk, W. A. (2022). What might we learn from 25 Years of research on education deans? *Journal of Educational Leadership and Policy Studies, 6*(1), 1-21.

Wepner, S. B., Henk, W. A., Clark Johnson, V., & Lovell, S. (2014). The importance of academic deans' interpersonal/negotiating skills as leaders. *Perspectives: Policy and Practice in Higher Education,* DOI:10.1080/13603108.2014.963727. http://www.tandfonline.com/doi/pdf/10.1080/13603108.2014.963727

Wepner, S. B., Henk, W., & Lovell, S. (2015). Developing deans as effective leaders for today's changing educational landscape. *Journal of Higher Education Management, 30*(1), 51-64.

Wepner, S. B., Henk, W. A., Lovell, S. E., & Anderson, R. D. (2020). Education deans' ways of thinking, being, and acting: An expanded national survey. *Journal of Higher Education Management, 35*(4), 15-24.

Wepner, S. B., Hopkins, D., Johnson, V. C., & Damico, S. (2011, Winter) Emerging characteristics of education deans' collaborative leadership. *Academic Leadership Online Journal, 9*(1). http://www.academicleadership.org/article/emerging-characteristics-of-education-deans-collaborative-leadership

Wepner, S. B., Hopkins, D., Clark Johnson, V., & Damico, S. B. (2012). Outlasting the revolving door: Resiliency in the deanship. *Journal of Higher Education Management, 27*(1), 1-20.

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The Impact of Future Employment Prospects on the Graduation Rates of Upper-Class University Stop-out Students

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College completion provides benefits for universities, society, and students. For universities, a high rate of graduating students and their success reflects positively on the institution, which in turn attracts more prospective students. Additionally, universities lose tuition monies when students leave their degree mid-way and must deploy additional resources on recruitment to compensate for the loss. Higher success rates also demonstrate the university's attentiveness to student needs and provision of adequate resources to support them. From a societal perspective, college completion leads to economic growth and reduced unemployment, as college graduates are more likely to secure higher-paying jobs, and in turn, pay more taxes. Furthermore, individuals with higher education degrees tend to exhibit more healthy and sustainable lifestyle choices and are more likely to participate in civic engagement (Campbell, 2006). For students, graduating from college leads to higher salaries, greater employment prospects, and increased opportunities to pursue their dreams and view their work as a career, rather than just a job.

Despite the numerous benefits listed above, many college students do not complete their degrees. Statistics show that around 40% of college students drop out (Hanson, 2022), with around 42% of those dropouts citing financial reasons as a primary factor. Most of these students drop out during the first year of enrollment owing overall to institutional factors. Extensive research has been conducted in this area, most notably by Tinto (1993, 2006, and 2012), providing a detailed analysis of the institutional factors affecting students in their first or second year of college.

However, less is known about students who have successfully made it through both their first and second year of college with passing grades and yet subsequently fail to graduate after having made it more than halfway to the degree in which they have already invested so much to earn. If it was primarily institutional factors that lead to dropping out, then a dropout would have most likely occurred earlier than in their third or fourth year. This phenomenon aligns with Tinto's Model of Early Departure (1975). According to Tinto, if students do not experience a sense of integration and encounter difficulties adjusting to the academic and social environment (institutional factors) early on, they are more likely to leave within the first year or two. Bean & Metzner's (1985) theory

suggests that for these students, that is those that made it more than halfway to graduation, external factors are strongly influencing their graduation rates. While there are many external factors that may impact them, financial factors seem to be of particular importance.

Most prior research on this topic has looked at students' financial situation at the *time they dropped out*. While we also include a few variables regarding their current financial situation, our primary focus is on *future* economic factors in terms of 1) the likelihood of securing employment in their major course of study, 2) the likely economic benefit of that employment in terms of expected dollars earned, and 3) a Science, Technology, Engineering, and Mathematics (STEM) designated major. This study utilized a dataset from 16 public universities in the southern part of the United States containing 4,156 students who were working toward their bachelor's degree between 2014 and 2016 and who each completed more than 50% of their degree requirements with passing grades (GPA > 2.0) and subsequently stopped attending for one or more semesters. Logistic regression was used to predict graduation rates among students who returned to graduate within 6 years of their original start date. A probability score and statistical significance was determined for each of the different factors that impacted graduation rates.

Theoretical Background

One of the leading theories for student attrition is Tinto's (1975) theory, which suggests institutional factors as the primary reason for student attrition. However, Tinto's (1975) theory is focused on students who dropped out within the first year of college due to factors like institutional commitment to student success, academic and social integration, institutional and social support, financial aid and affordability, etc. Since the students in our study have completed two years of their degree with sufficient grades, the role of institutional factors or academic ability were not considered to have as much impact on student stop-out rates as economic factors. An alternative theory is Bean & Metzner's Theory of Attrition (1985), which posits that non-traditional students are more likely to drop out due to economic factors. Because the students in our sample all stopped out after successfully completing at least 2 years of their undergraduate program, with a minority returning to finish, in many ways they have become non-traditional students.

For this study, our subset of non-traditional like students, defined as those that stopped attending college for one or more semesters after successfully completing more than 50% of their degree requirements was selected. This subset of non-traditional students is particularly interesting because 1) they have invested considerable time and resources in college and, 2) they have shown that they are able to succeed in college by completing more than 50% of the requirements successfully (with a 2.0 or higher GPA). These students show some evidence of an ability and a desire to finish their degree. This student population is especially interesting for university administrators to better understand and reach out to, as they are very likely to be able to succeed in a short time period if they do, in fact, return, and they are costly to replace when they leave.

To better understand the differences between those students that stopped out and returned to graduate within 6 years of their initial enrollment and those that did not, factors were selected that the research literature suggests are important for this group's ultimate success, including future and current economic conditions, indicators of past economic conditions, and a few demographic control variables.

Factors to be Predicted

Graduated in 6 years. The variable being predicted in this study is the graduation rate of the undergraduate students who stop out after having finished at least half of their coursework within six years of starting. The six-year graduation milestone was set due to its significant influence on higher education policies and funding decisions along with its widespread recognition as the benchmark for assessing whether students at an institution are completing their degrees within a reasonable timeframe.

Future Economic Factors. Many students go to college because they see it as a path to a better life, including enhanced salary and career opportunities (Kumok & Hahn, 2023). While this has generally proven to be true for many college graduates over the past decades, it is not universally true for all fields of study. Some majors have very high expected salaries in fields that are in high demand, others have comparatively lower salaries and/or low employment demand. Additionally, STEM designations have shown an important impact on future employment prospects as they tend to have greater job stability, higher salaries and usually require a college degree, giving additional motivation to finish if they wish to work in a STEM field.

For those students who are, at least partially, attending college for economic reasons, these future economic factors are very likely to impact their willingness and ability to persevere to college completion. The Expected Future Salary, Percentage Change in Employment Prospects, and STEM Major with Career Impact were examined as related but distinct future economic factors likely to impact graduation rates.

Expected Future Salary. For many students, going to college is a pathway to a new, more affluent quality of life, with higher incomes largely expected by college graduates. While this is generally true, there are differences in expected salary based on a student's major course of study (e.g., elementary school educators versus data scientists). These expected salary gaps are likely to positively influence the college persistence for those students looking for a better quality of life. News media report differences in average income based on major and the university a student attends (Picchi, 2023). Students may compete to get into STEM majors in Ivy League colleges because of the high expected income post-graduation (Kumok & Hahn, 2023). This leads to our first hypothesis, H1. *H1: Expected Future Salary* — **As the salary expectations for the students' major increase, those students will be more likely to graduate than those with a lower expected salary for their major.**

Percentage Change in Employment Prospects. Another independent factor for future economic prospects is the likelihood of employment. While high salary and high demand often go together, there can be high demand for lower-wage jobs and low demand for high-wage jobs. Increased likelihood of employment is one of the top reasons why college is important (Gagnon, 2023). Informatics, Public Health, Health and Wellness and Pharmaceutical Sciences are some of the rising majors while Accounting and Business Management has the lowest growth rate followed by Preschool education, Rhetoric and Composition and Computer Graphics (Hanover Research, 2022). Therefore, the likelihood of future employment related to the student's major is expected to increase college completion as shown in our second hypothesis, H2. *H2: Percentage Change in*

Employment Prospects — **As the likelihood of finding employment related to the student's major increases, they are more likely to complete their degrees.**

STEM Major with Career Impact. STEM Major with Career impact is yet another factor for future economic prospects. On average, STEM majors have a higher earning potential, more specialized skills and better job stability. Typically, graduating from a STEM major leads to an increase in the pay (Day & Martinez, 2021). Regardless of whether the student works in a STEM related role, a STEM major in general makes more salary than their non-STEM counterparts. STEM majors in computer occupations had the highest income (median $105,300), followed by engineers ($102,200) and lastly life scientists ($66,540). In addition, it is difficult to get into a STEM job without a college degree. Therefore, students pursuing a STEM degree are more likely to complete their degrees as shown in our third hypothesis, H3. ***H3: STEM Major with career impact*** **— Students pursuing a STEM major are more likely to graduate.**

Current Economic Factors

While future economic conditions are expected to be important, students must also be able to survive and thrive today. Therefore, current economic conditions are also likely to be important factors impacting graduation rates. Kerr and Wood (2022) found that about 72% of students eliminate college based on the cost of tuition, suggesting that current economic factors play a major role in selecting a college and subsequently completing the degree program. Bean & Metzner's theory (1985) also posits that economic factors play a critical role in graduation rates. Specifically, Bean & Metzner (1985) included the economic factors of the Consumer Price Index (CPI) and employment rate as potential environmental variables in a causal model of student attrition.

Most closely related to a cost of attendance variable, Bean & Metzner (1985) identified 'difficulty of financing school' as an additional environmental variable and financial aid as an organizational variable. Cost of attendance was not overtly addressed in Bean & Metzner's theory of attrition (1985). Rather, cost of attendance is indirectly discussed as being related to financial aid and 'difficulty of financing school', as each of these factors would be proportional to the cost of attendance and the available financial resources of each individual student. In addition to the annual cost of university attendance, the impact of the additional tuition surcharge on graduation rates was also considered as it contributes to the overall cost of attendance.

Annual Cost of University Attendance. If students are stopping out for financial reasons, as many are reported to do, then it seems reasonable to believe that a higher cost of attendance would make it more difficult for them to return and graduate, leading to the fourth hypothesis. *H4: Annual Cost of University Attendance* — **Students attending a university with a higher cost of attendance are less likely to graduate than students who are attending a school with a *lower* cost of attendance.**

Additional Tuition Surcharge. In addition to the normal cost of attendance, a few students in the dataset faced a state mandated tuition surcharge, which was designed to encourage students to finish school and graduate. Students with more than 140 credit hours, or 110% credit past their expected senior year, were charged 50% (effective 2010-2019) more for each additional credit hour (University of North Carolina System, 2021). If students are stopping out due to financial hardship,

this barrier is expected to discourage them from returning and finishing due to increased hardship, by further increasing the cost of attendance, as shown in H5. H5: Additional Tuition Surcharge — **Those students who are charged a surcharge on top of their normal tuition will be less likely to return and graduate after stopping out.**

Past Economic Indicators

In addition to future and current economic conditions, some students are likely to be less resilient to economic challenges, based on a background commonly associated with lower economic resources. These include those whose families qualified for government assistance based on financial need and those from racial groups historically discriminated against or who are known to face increasing economic challenges.

Family Income Based on Pell Grants. In the United States, students attending undergraduate college may qualify for the Federal Pell Grant program (Office of the Federal Register, National Archives and Records Administration, 2012). The amount granted is based on the student's Expected Family Contribution (EFC), cost of attendance, their status as a full-time or part-time student, and their plans to attend school for a full academic year or less. For students aged less than 24 years, whether they are granted a Pell Grant is influenced by their family's economic background. Hence, if students in our dataset received a Pell Grant before age 24, then their family's income was low enough to qualify for the financial support. Many of these students may not have had access to greater financial support compared to other students and would be less resilient and more likely to be severely impacted if they suffered financial hardship. Since many students stop out due to financial hardship, these students were expected to be less resilient when facing hardships and less likely to return and complete their degrees. H6: Family Income Based on Pell Grants — **Students who were awarded a need-based Pell Grant based on their family's income and then stopped attending for one or more terms are less likely to graduate within 6 years.**

Racial Category. Many racial groups have faced structural, societal, and institutional hardship, historically, which can lead to less resilience to financial hardships, making it harder to return and finish. This leads to H7. *H7: Racial Category* — **Members of historically disadvantaged racial groups are less likely to return and graduate after stopping out than those of historically more privileged racial groups.**

Each of these hypotheses are summarized in Table 1.

Data Source

The sample includes students who were enrolled in classes progressing toward their bachelor's degree between 2014 and 2016 from 16 universities within a multi-campus public university system in the southern United States. It includes new freshmen and transfer students seeking a bachelor's degree in any Fall or Spring term from Fall 2014 through 2015; who missed at least one fall or one spring term; had accumulated 60 or more credits at the time of stop-out; and had a cumulative GPA of at least 2.0.

Table 1

Hypotheses Summary

Name	Description	Grad. Rate
Variable to be predicted		
Graduated in 6 years	Percentage of students who successfully completed their undergraduate program within 6 years from the time of commencement.	Target Variable
Future Economic Prospects		
H1: Expected Future Salary	As the salary expectations for the students' major *increase*, those students will be *more* likely to graduate than those with a lower expected salary for their major.	↑
H2: % Change in Employment Prospects	As the likelihood of finding employment related to the student's major *increases*, they are *more likely* to complete their degree.	↑
H3: STEM Major with Career Impact	Students in a STEM major are *more likely* to complete graduation due to the improved financial prospects upon graduation.	↑
Current Economic Prospects		
H4: Annual Cost of University Attendance	Students attending a university with a *higher* cost of attendance are *less* likely to graduate than students who are attending a school with a *lower* cost of attendance	↓
H5: Additional Tuition Surcharge	Those students who are *charged* a surcharge on top of their normal tuition will be *less* likely to return and graduate after stopping out.	↓
Historical Economic Indicators		
H6: Family Income Based on Pell Grants	Students who were *awarded a need-based* Pell Grant based on their family's income and then stopped attending for one or more terms are *less* likely to graduate within 6 years.	↓

H7: Racial Category	Members of historically disadvantaged racial groups are *less* likely to return and graduate after stopping out then those of historically more privileged racial groups.	↓

The source data included 52,267 students over 13 years. Some dependent variables related to the economic environment were measured in 2016, therefore the sample was restricted to students whose last semester was January (Spring) of 2014 or later. This restriction should provide some confidence that the measured economic factors were relevant to a student's decision to stop-out and to return. Although this is not a perfect time match, the economic variables around these majors did not likely change substantially in that time. In order to ensure that data on 6-year graduation was intact, the sample was restricted to students who started their degree in January of 2011 or sooner (the last recorded graduation date is December of 2016). The data set includes 7,572 students who started before January of 2011 and whose last enrolled semester was after January of 2014.

Further, this analysis requires matching the students' major to economic data from the state. Of the students who started before January 2011 and whose last semester was after 2014, 6,890 students listed a major. Of these, 5,835 students had majors that matched appropriately to economic data and could be classified as quantitative or non-quantitative majors. Lastly, only those who were a maximum age of 24 years at stop-out were included to better control for age allowing more focus on economic factors. The final dataset consisted of 4,156 students.

Calculations of Critical Variables

H1: Expected Future Salary. The expected salary for a student was estimated by matching the student's major to occupational classifications. This technique matches the Classification of Instructional Programs (CIP) to the Standard Occupational Classification (SOC) (Bureau of Labor Statistics: BLS, 2018). The CIP is the accepted federal government standard on instructional program classifications and is used in a variety of education information surveys and databases. The 2018 Standard Occupational Classification (SOC) system is a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. The CIP to SOC crosswalk (2020) enables mapping to the National Center for Education Statistics (NCES) (Causey, et al., 2023) and BLS (2018) data on average salaries. In order to make coefficients more meaningful, the expected salary was divided by $10,000.

H2: Percent Change in Employment Prospects. The employment prospects of an individual if they left school was also estimated by the CIP to SOC crosswalk (2020) and connection to data from the BLS (2018). The data on the percent change of employment shows whether a SOC was growing or shrinking in employment over the previous year (e.g., -5 represents a decrease of 5% in employment within the SOC).

H3: STEM Major with Career Impact. The majors were categorized as STEM and non-STEM based on how the university identifies them.

H4: Annual Cost of University Attendance. The cost of attendance that each student faced was pulled from official university websites in 2017. Cost of attendance included tuition, living expenses, study material costs, health insurance, program fees and other relevant expenses. To make the coefficient more meaningful, cost of attendance was divided by $1,000.

H5: Additional Tuition Surcharge. Tuition surcharge measures the cost students were charged to stay in college. At the time of data collection, state law required tuition surcharges of 25% to 50% for students enrolled in a four-year program with more than 110% of credit hours necessary to complete the degree. This is a binary variable that is closely tied to the class standing of a student (e.g., students with more hours will be 5th year seniors).

H6: Family Income Based on Pell Grant. Pell is a binary variable that indicates that a student qualified for at least one Pell Grant given their economic background. The data set did not indicate how much money the student received.

H7: Racial Category. Race was aggregated to White, Black, Hispanic, Asian and other minorities from the student data of different universities collected. The majority (White) was excluded from the regression as the comparison group.

Table 2
Descriptive Statistics

Name	Hypo #	Mean	Std Dev	Min	Max
Variable to be Predicted					
Graduated in 6 Years		25.3%	0.435	0 (No)	1 (Yes)
Future Economic Prospects					
Expected Future Salary	H1	$46,465	14,580	$13,954	$109,880
% Change in Employment Prospects	H2	1.44%	9.226%	-0.697	1.099
Stem Major with Career Impact	H3	48.9% STEM	0.500	0 (Other)	1 (STEM)
Current Economic Prospects					
Annual Cost of University Attendance	H4	$18,547	$3,114	$12,330	$24,349
Additional Tuition Surcharge	H5	3.2%	0.177	0 (No)	1 (Billed)

Historical Economic Indicators					
Family Income Based Pell Grant	H6	52.0%	0.500	0 (No)	1 (Pell)
Racial Category	H7	54.4% White 31.6% Black 4.4% Hispanic 3.2% Asian 6.4% Other Minority	0.498 0.465 0.204 0.177 0.244	0 (No) 0 (No) 0 (No) 0 (No)	1 (Yes) 1 (Yes) 1 (Yes) 1 (Yes)
Demographic Control Variables					
Gender (0 = Female, 1 = Male)	C1	50.0% Male 50.0% Female	0.500	0 (Female) 0	1 (Male) 1
Age at first upper class stop-out	C2	22.0	1.008	18.4 (Age)	24.0 (Age)

Table 2 displays the descriptive statistics for the final sample. In this sample of public institutions of higher education, the scope of specific career paths and their corresponding salaries and employment demands spans a wide spectrum. For instance, careers focused on German language and literature (CIP Code 16.0501) generally start at a minimum salary of $13,954, reflecting the niche expertise required in dialects and linguistic subtleties. On the opposite end of the spectrum, professions in Management Information Systems (CIP Code 52.1201) can yield a maximum salary of $109,880, indicative of the high demand and specialized skills in this field. Interestingly, the demand for careers in Environmental Engineering Technology/Environmental Technology (CIP Code 15.0507) sits at a minimum of -69.70%, illustrating a potential oversupply or a decline in interest, while Liberal Arts and Sciences/Liberal Studies (CIP Code 24.0101) experience a staggering maximum demand of 109.90%, signaling a substantial interest and need for individuals in this domain. It is evident that these disparities in salaries and employment demand highlight the varied economic landscapes influencing students' choices and shaping their career trajectories.

Method

In order to determine the variable to be predicted, logistic regression was performed in SAS 9.3 (SAS Institute, Cary NC). Logistic regression is primarily used in scenarios where a binary outcome (yes or no) needs to be predicted or data needs to be classified into two distinct categories (Cox, 1958). Therefore, we use logistic regression to predict whether a student returned and graduated.

Because logistic regression estimates the probability of occurrence of an incident, the logistic values lie between 0 (no possibility of occurrence) and 1 (100% possibility of occurrence). Probability *(p)*

represents the estimated chance of the students graduating based on the independent variables (Expected Future Salary, Additional Tuition Surcharge, Racial category, Age, etc).

Logit. Logistic regression produces logit coefficients. These coefficients are in the format of $log\left(\frac{p}{1-p}\right)$ where *p* is the probability of graduation. When p is 0.5 (50% possibility of occurrence), the logit is 0. When it is less than 0.5 it is negative and greater than 0.5 it is positive. So, the logit measures how far the probability is from 0.5. Logistic regression produces coefficients of a change in log odds that a student will graduate, given a change of 1 in the independent variable.

Odds Ratio. Logits can then be converted to odds ratios for easier interpretation ($odds\ ratio = e^{logit\ coefficient}$). The odds ratio helps in comparing scenarios where the factor or independent variable (eg. Additional tuition surcharge) is present and where it is absent. It represents how much more or less likely the graduation is when the additional tuition surcharge is present compared to when it is absent. If the odds ratio for the tuition surcharge is 1, it means the tuition surcharge does not have any impact on graduation and it would be the same with or without the surcharge. If it is greater than 1 (e.g., 2) it means the graduation is twice as likely when the surcharge is present and likewise if it is less than 1 (e.g., 0.5) it means the graduation is half as likely in the presence of additional surcharge.

Table 3 highlights the key observations from the logistic regression performed.

Table 3

Logistic Regression Results

Parameter	Estimate	St Err	Odds Ratio	Pr > ChiSq
Intercept	-2.493	0.310		**0.000**
H1: Expected Salary	-0.012	0.003	0.988	**0.000**
H2: Change in Demand	-0.010	0.004	0.990	0.016
H3: STEM	0.081	0.076	1.084	0.287
H4: Cost	0.115	0.015	1.122	**0.000**
H5: Surcharge	-0.372	0.229	0.689	0.104
H6: Pell	-0.308	0.080	0.735	**0.000**
H7: Race				
Black	-0.265	0.104	0.767	**0.010**
Hispanic	0.142	0.172	1.152	0.409
Asian	-0.277	0.213	0.758	0.193
Other Race	-0.061	0.151	0.941	0.686

In the employment data, both expected salaries and the change in employment demand within the SOC were significant predictors of a student graduating after they had stopped out. For every $10K more a student expected to make in salary, the student was 98.8% as likely to graduate as a student who did not anticipate the additional $10K. The inverse can sometimes be easier to interpret. A

student who anticipates making $10K less in salary is 1.01 (0.865^{-1}) times as likely to graduate. Increases in employment within the SOC were also associated with a decrease in graduation rates. If employment within the SOC was up by 5%, then graduation rate may drop to 95% ($e^{-0.0103*5}$) compared to no change of employment in SOC. These coefficients were stable in both direction and significance in sensitivity analyses.

As the cost of attendance increased by $1,000, students were 1.12 times as likely to graduate (i.e., higher cost is associated with higher graduation. This result may be more connected to the students' socioeconomic background than simple cost analysis. Students with stronger financial backgrounds are more likely to attend schools with higher cost of attendance. Students who received a Pell grant graduated at only 76.7% of the rate of students who did not receive Pell grants. Again, this may be connected to socioeconomic status. One of the race variables in the analysis was correlated with a lower graduation rate. When compared to the majority race in this sample (White), Black students were 75% as likely to return to graduate after stopping out. Tuition surcharge and STEM majors were not significantly correlated with students' rate of returning and finishing their degree.

Table 4

Variable Comparisons and Groupings

Hypo Comparisons	Number	Grad Rate	Hypo Comparisons	Number	Grad Rate
H1 Salary			**H5 Surcharge**		
Salary < 30K	285	23.2%	*Surcharge*	135	18.5%
Salary >= 30K and <45K	1983	26.7%	*No Surcharge*	4021	25.5%
Salary >= 45K and <60K	1175	26.6%	**H6 Pell Grant**		
Salary >=60K and <75K	583	23.5%	*Pell Grant*	1609	22.2%
Salary >= 75K	130	4.6%	*No Pell*	2547	27.3%
H2 Demand			**H7 Race Report**		
Demand < -10%	149	23.5%	*White*	2260	30.0%
Demand >= -10% and <-3%	647	28.3%	*Black*	1315	16.6%
Demand >= -3% and <0%	776	24.5%	*Hispanic*	181	30.9%
Demand >= 0% and <3%	982	32.1%	*Asian*	135	23.7%
Demand >= 3% and <10%	1309	21.4%	*Other Race*	265	25.7%
Demand >= 10%	293	16.7%	**C1 Gender Comparison**		
H3 STEM			*Female*	2078	25.1%
STEM	2032	25.9%	*Male*	2078	25.6%
No STEM	2124	24.8%	**C2 Age Comparison**		
H4 Cost of Attendance			*First Stop < 20*	86	54.7%
Cost < 14K	472	12.5%	*First Stop >=20 and <21*	633	44.5%
Cost >=14K and <18K	722	17.2%	*First Stop >=21 and <22*	1222	31.9%
Cost >=18K and <20K	1908	26.4%	*First Stop >=22 and <23*	1424	17.7%
Cost >=20K	1054	34.6%	*First Stop >=23 and <=24*	791	10.2%

Table 4 reports on graduation rates by further subdividing hypothesized variables as well as gender and age. Visually the results of the logistic regression are validated. However, we can see a potentially non-linear relationship between expected salary and graduation rate. Graduation rate appears to increase to the $45K to $60K category and then starts to fall as noted in the logistic regression. We see a similar pattern with demand. It is likely that students in very highly paid and in demand professions may be able to obtain employment even before finishing their degree and therefore stop out to work. Some may continue part-time to eventually graduate, but likely not on the 6-year graduation window used for this study.

While we observe a *slightly* higher graduation rate for STEM majors than non-STEM majors in the descriptive statistics, it was not statistically significant in the logistic regression. We see a similar pattern for the tuition surcharge, where those students' graduation rates paying the surcharge dropped to 18.5% compared to 25.5% for the non-surcharge group, but was not statistically significant in the logistic regression, possibly due to the small sample size of 135 paying the surcharge vs the 4,021 not paying it.

We see dramatic differences in graduation rate based on cost of attendance and Pell grants, with those attending more expensive schools being more likely to graduate and those **not** receiving a Pell grant being more likely to finish in 6 years. This is likely due to more stable economic factors for those who chose to go to more expensive school and those not qualifying for Pell family-based grants. As noted, we also see differences in graduation rates based on race, with those identified as Black having rates of 16.6% compared to 30% for Whites and 30.9% for Hispanics.

In this population of students, gender does not appear to affect whether students return to graduate. Age appears to have an inverse relationship with graduation rate. Students who had their first stop-out at a younger age were much more likely to return and graduate than those whose first stop-out was older. For example, a student whose first stop-out was before age 20 graduated within 6 years ~55% of the time as opposed to one whose first stop-out was between age 23 and 24, who graduated only ~10% of the time.

Discussion

Future economic indicators, specifically likelihood of employment and expected salary after graduation, significantly predicted re-enrollment after a stop-out period in higher education. Previous research has generally focused on reasons for students' initial stop-out. These findings yield an important contribution to the literature as it provides insight into the motivations of students who re-enroll after stop-out after completing more than 50% of their degree requirements with passing grades. When students take a break from their education, or stop-out, and consider re-enrollment, several economic factors can influence their decision-making process.

First, the likelihood of employment and the state of the job market are crucial factors. If future economic indicators suggest a strong job market with low unemployment rates and ample job opportunities, students may be less inclined to return to school immediately. They might prioritize gaining work experience or earning income over pursuing additional education. Conversely, if the job market is weak, students may be increasingly challenged to secure sustainable and well-paid

employment. In this circumstance, re-enrollment may provide a promising pathway to enrich their qualifications while they wait out the tough job market. Some students may decide that a strong education can provide a sense of resiliency during economic downturns, thereby reducing the risk of future job loss. This finding is consistent with recent research that found re-enrolling and completing a bachelor's degree leads to a significant increase in employment of 9.8 percentage points (Gaulke, 2022).

Second, the potential for a higher expected salary and career advancement that comes with completing a degree or additional education can be a strong motivator for re-enrollment. Positive economic indicators that show higher earnings potential for degree holders may encourage students to re-enroll after stop-out. If a student believes that completing their degree will significantly boost their earnings potential, they are more likely to consider re-enrolling (Taylor et al., 2014). The economic stability provided by the prospect of a well-paying job can facilitate the financing of their education through loans and/or scholarships. On the balance, students, and potentially their parents, often conduct a cost-benefit analysis when considering re-enrollment. They weigh the potential income increase against the costs of education, including tuition, time, and other expenses. A positive return on investment, where the potential future earnings outweigh the costs, can be a strong motivator. Students want to feel assured that completion of a college degree would make college worth their time and money (Edge Research and HCM Strategists, 2022).

The purpose of this study was to estimate a model to analyze the future economic factors which significantly influence graduation rates for students who successfully completed their first two years of college and subsequently stopped out for one or more semesters. The empirical results indicate Bean and Metzner's Theory of Attrition (1985) is supported. Additional economic factors were also significant and widen the lens of understanding of students who re-enroll after stop-out. Past economic indicators of increased graduation rates included qualification for Pell Grant under the age of 24 and non-minority racial status. One current economic indicator of increased graduation rates was increased cost of attendance. Future economic indicators of increased graduation rates were higher expected salaries based on selection of a quantitative major course of study and likelihood of employment. Personal characteristics which indicated increased graduation rates included gender (i.e., female) and age (i.e., younger students were more likely to return to complete their degrees.

These collective findings hold important implications for university administrations who seek to re-enroll students to complete their degree. Understanding the current job market conditions can inform demand for programs. For example, a recent study found that among bachelor's degree seekers, re-enrolling students exhibited a nine-percentage-point higher likelihood of choosing a business major compared to the average student population. In total, 27% of re-enrolling bachelor's students had selected business as their major (Causey, 2022). When likelihood of employment and expected salary are strong, more students are likely to enroll resulting in increased revenue for higher education institutions.

Increased student enrollments may begin to tax the capacity of these institutions to support students effectively. Possible solutions include expansion of career counseling and job fairs to help students connect to potential employers. Further, the impact of students who have acquired

applied experience through internship programs during college cannot be understated. Internships are learning tools provided through coursework or through connecting with companies who provide these experiences for current university students. Internships provide opportunities for skills development and experiential learning (Galbraith & Mondal, 2020).

Limitations

Several limitations of this study should be considered when interpreting the findings. The dataset used for this analysis was based on information collected between 2014 and 2016. The higher education landscape, as well as economic conditions, have evolved significantly since then. Consequently, the relevance of these findings to the present-day context needs to be weighed against the impact of more recent economic factors. The focus on non-traditional students who successfully completed their first two years of college and subsequently stopped out may not fully capture the experiences of all non-traditional students. Those who did not reach this stage or chose different educational paths are excluded from the analysis, potentially leading to a selection bias that limits the generalizability of the results to a broader population of non-traditional students. The results indicated that individuals who self-identify as Black have a lower likelihood of graduating. However, this discovery may oversimplify the intricate connection between race, socioeconomic status and graduation percentages. It does not consider the variations within racial and ethnic groups or the interplay of multiple identities that can influence student success. This study predominantly centers on STEM major choices and the outlook for future employment. This focus may overlook the wide array of majors and professional aspirations held by non-traditional students, potentially restricting the applicability of the results to those pursuing different fields. The dataset was collected from a selection of 16 universities within a large university system in the southern region of the United States, which might not accurately reflect the broader non-traditional student population. The outcomes may be confined to the specific traits and regulations of the participating institutions and might not be broadly applicable to a more diverse array of educational environments. This study primarily concentrates on economic factors, potentially overlooking other external influences such as family dynamics, personal circumstances, and social support systems that may play significant roles in student attrition. A more comprehensive investigation incorporating a broader range of external factors would provide a more holistic understanding of non-traditional student experiences.

Lastly, while the study identifies the strength of predictors between economic indicators and graduation rates, it does not establish causal relationships. Other unobserved variables and complex interactions may confound the findings, emphasizing the need for caution when drawing definitive conclusions about the impact of economic factors on student outcomes.

Future Research

Future research in the field of non-traditional student success and attrition offers several promising avenues. Longitudinal studies, for instance, hold the potential to provide in-depth insights by tracking non-traditional students over extended periods. An intersectionality analysis, which would explore the interplay of factors like race, gender, socioeconomic status, and major selection, may yield deeper insights into the multifaceted dynamics influencing student outcomes. Examining the role of institutional policies, support structures, and interventions in addressing the unique

challenges faced by non-traditional students would also be constructive. The exploration of regional variability may reveal how economic factors affect students differently based on geographic location and the regional labor market. AI and machine learning have demonstrated promise in predicting students at risk of stopping out or dropping out (Barron, 2023). While AI can provide valuable insights and early warnings, it should be complemented by human interventions, such as counseling and support services, to provide personalized assistance to at-risk students. AI serves as a supportive tool for decision-making and intervention but should not replace the crucial human element in student support and mentorship. Conducting comparative analyses across various educational systems and institutions may help identify best practices and policies that effectively support non-traditional students. Finally, given the potential changes in the educational and economic landscape post-pandemic, future research should prioritize the use of more current data to accurately reflect the present-day realities of non-traditional students.

Conclusions

Future economic indicators can have a multifaceted impact on re-enrollment decisions after a stop-out period. A strong and positive economic outlook can make education more accessible and attractive. However, such a positive economic outlook can draw students away from their studies. It's essential to consider these economic factors alongside personal, educational, and career goals when making decisions about returning to school after a stop-out.

References

Barron, J. (2023, Sept 20). How A.I. increased the graduation rate at John Jay College by 32 points. *New York Times. https://www.nytimes.com/2023/09/20/nyregion/ai-john-jay-college.html*

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, *55*(4), 485–540. https://doi.org/10.2307/1170245

Campbell, D. (2006) What is education's impact on civic and social engagement? In: *Measuring the Effects of Education on Health and Civic Engagement: Proceedings of the Copenhagen Symposium*, OECD, Paris, 25-126. https://www.oecd.org/education/innovation-education/37425694.pdf

Causey, J., Kim, H., Ryu, M., Scheetz, A., & Shapiro, D. (May 2022), Some college, no credential student outcomes, annual progress report - Academic Year 2020/21, Herndon, VA: National Student Clearinghouse Research Center. https://nscresearchcenter.org/wp-content/uploads/SCNCReportMay2022.pdf

Causey, J., Gardner, A., Pevitz, A., Ryu, M., and Shapiro, D. (2023, April 25). Some college, no credential student outcomes, annual progress report – Academic Year 2021/22. *National Student Clearinghouse Research Center.* https://nscresearchcenter.org/some-college-no-credential/

Cox, D. R. (1958). The regression analysis of binary sequences. *Journal of the Royal Statistical Society. Series B (Methodological)*, *20*(2), 215–242. http://www.jstor.org/stable/2983890

Day, J. C. & Martinez, A. (2021, June 2). STEM majors earned more than other STEM workers. *United States Census Bureau*. https://www.census.gov/library/stories/2021/06/does-majoring-in-stem-lead-to-stem-job- after- graduation.html

Edge Research and HCM Strategists. (2022, September 28). Where are the students? New research into college enrollment declines. *Gates Foundation*.

https://usprogram.gatesfoundation.org/news-and-insights/articles/gates-foundation-probes-college-enrollment-decline
Gagnon, D. (2023, October 3). Top 7 reasons why college is important. https://www.snhu.edu/about-us/newsroom/education/why-is-college-important
Galbraith, D., & Mondal, S. (2020). The potential power of internships and the impact on career preparation. *Research in Higher Education Journal, 38*.
Gaulke, Amanda P. (2022). Returns to bachelor's degree completion among stop outs. *Economics of Education Review*, Elsevier, vol. 86(C).
Hanover Research (2022). Top 10 degrees on the rise in 2022 [Infographic]. https://www.hanoverresearch.com/reports-and-briefs/top-10-degrees-on-the-rise-in-2022/?org=higher-education
Hanson, M. (2022, June 17). College dropout rates. *EducationData.org*. https://educationdata.org/college-dropout-rates
Kerr, E. & Wood, S. (2023, Sept 20). See the average college tuition in 2023-2024. https://www.usnews.com/education/best-colleges/paying-for-college/articles/paying-for college-infographic
Kumok, Z. & Hahn, A. (2023, June 14). 7 Compelling reasons why you should go to college. *Forbes.* https://www.forbes.com/advisor/student-loans/why-should-you-go-to-college/
National Center for Education Statistics (2020). CIP 2020 to SOC 2018 crosswalk. https://nces.ed.gov/ipeds/cipcode/Files/CIP2020_SOC2018_Crosswalk.xlsx
Office of the Federal Register, National Archives and Records Administration. (2012, June 30). 34 CFR 690 - FEDERAL PELL GRANT PROGRAM. [Government]. Office of the Federal Register, National Archives and Records Administration. https://www.govinfo.gov/app/details/CFR-2012-title34-vol4/CFR-2012-title34-vol4-part690
Picchi, A. (2023, May 26). College majors have a big impact on income. Here are the highest-and lowest-earning fields. *CBS News: Moneywatch.* https://www.cbsnews.com/news/college-major-top-and-lowest-earning-majors-impact-on-income-pay/
Taylor, P., Parker, K., Morin, R., Fry, R., Patten, E., & Brown, A. (2014, February 11). The rising cost of not going to college. *Pew Research Center.* https://www.pewresearch.org/social-trends/wp-content/uploads/sites/3/2014/02/SDT-higher-ed-FINAL-02-11-2014.pdf
The University of North Carolina System. (2021, Sept 16). Regulations on tuition surcharge. The UNC Policy Manual, The University of North Carolina System. https://www.northcarolina.edu/apps/policy/doc.php?type=pdf&id=739
Tinto, V. (1975). Dropout from higher education: a theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89-125. https://doi.org/10.3102/00346543045001089
Tinto, V. (1993). Leaving college: rethinking the causes and cures of student attrition. 2nd ed. Chicago; London, University of Chicago Press.
Tinto, V. (2006). Research and practice of student retention: what next? *Journal of College Student Retention: Research, Theory & Practice*, 8(1), 1-19. https://doi.org/10.2190/4YNU-4TMB-22DJ-AN4W
Tinto, V. (2012). Completing college: rethinking institutional action. University of Chicago Press.

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The Impact of Prior Military Service on Senior Higher Education Leadership Effectivity

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The pursuit of higher education has historically been fundamental to the overall success of our nation, through the production and dissemination of knowledge, and the engagement of colleges and universities in addressing societal needs. Colleges and universities in the United States perform an essential role in serving the greater good by educating and developing students, elevating citizens' standard of living and by furthering the advancement of important theoretical and applied research and development (Ferguson & Roofe, 2020).

Today, U.S. colleges and universities face significant challenges in the areas of economics, demographics, technological development, and global competition. Issues of access, affordability, quality, and accountability have accelerated in recent years, all of which underscores the importance of effective stewardship and leadership in the country's senior higher education ranks. These issues relate as well to the sustainability of all organizations and suggest that they consider higher education institutions as they reflect on their mission, values and vision for the future (Collins & Porras, 2004).

Leaders of colleges and universities need to continually assess the contributions their institutions are (or are not) making towards the economic, scientific, and social components of the communities that they serve. Regular governmental support from state and federal agencies are long over, and the days of accountability and assessment, globalization, and competition are here to stay, providing new pressures for colleges and universities (Filho, Pallant, Enete, & Richter, 2018). These senior leaders must also continually adapt and balance their approach to leadership in addressing a diverse set of stakeholders. Higher education leaders that come from America's military veteran community provide unique and effective leadership experience that is well-suited to confronting these challenges. By better understanding the implications of prior military experience to the development of senior higher education leaders, institutions may be better equipped in meeting and overcoming the challenges and opportunities facing American higher education.

The Study

The purpose of this study was to examine the connections between prior military service, and senior higher education leadership effectivity in addressing the challenges facing the U.S. higher education system, based upon interviews with fifteen veterans who have ascended to the highest ranks of the nation's colleges and universities. These interviews sought to identify the reasons why veterans choose to work in higher education; review and assess the leadership skills and traits learned in the military that practically apply to their roles; and examine the relationship

between that experience and the leaders' effectiveness in addressing the current challenges facing the industry. The target population for this study were presidents of U.S. colleges and universities who had served in the military (American Council on Education, 2023).

Foundations of Leadership Development in the Military

Leadership is a core component to service in the military. Military leaders are frequently faced with making important judgements, often at critical moments that in the extreme, can put at risk the lives of others and influence the future of a nation. These leaders often face challenging situations within the context of highly fluid environments that contribute to the complexity of military leadership (Kark, Karazi & Tubi, 2016).

Despite what are at times vastly different environments, research suggests that there are areas of broad commonality in the top-level challenges that military and civilian leaders confront in their respective roles with both groups ranking organizational operations and performance, managing and motivating subordinates, and personal leadership as primary challenges to effective and adaptive leadership in dynamic settings (Ferguson, Rybacki, Butts, & Carrigan, 2016). The U.S. military excels at preparing adaptive leaders adept at the critical thinking necessary to navigating teams through challenging and changing situations and this quality is instilled and reinforced by ongoing learning and self-reflection. At its essence, the military develops leaders who give primacy to the group over the individual, emphasize the empowerment of others, are inclusive, and who prioritize accountability in accomplishing one's mission (Jones, 2014).

Challenges Facing U.S. Higher Education

Colleges and universities face significant and progressive challenges as American society continues to evolve, yet many colleges and universities remain mired in traditional organizational models. America is becoming a more diverse nation with growing divides socially, economically, and politically. The U.S. Department of Education's Condition of Education Annual Report (U.S. Department of Education, 2023) reiterated long-standing concerns about access, affordability, quality, and accountability. The report highlighted the threat posed by global competitive pressures, accelerating technological developments, restraints on public finance, and serious structural limitations that serve as impediments to making higher education more accessible, more affordable, and more accountable, while maintaining world-class quality.

Higher education in America appears to be at a critical point. The rapidly changing demography of its prospective students, persistent increases in the out-of-pocket costs for an increasingly low- to middle-income student demographic, growing skepticism of the value of post-secondary attainment, and the compounding student debt owed by Americans place increasing pressure on the seams of our nation's post-secondary educational infrastructure (Bogue & Morse, 2020).

From a purely economic perspective alone, higher education is facing a broad range of disruptive challenges. Overall enrollment across all sectors is down significantly from its peak in 2010, raising questions at some institutions about their operational vitality. College tuition has increased close to 300 percent over the past fifty years, far outpacing the price of consumer goods. And finally,

Americans owe close to $2 trillion in student loan debt while the nationwide six-year graduation rate for two and four-year institutions languishes at around sixty percent, leading many students to question whether college is their best option for upward mobility and leaving many stakeholders facing seemingly intractable barriers to middle-class opportunity (U.S. Department of Education, 2023).

In a related study, former Harvard president Derek Bok provides an updated analysis of the current condition of this nation's colleges and universities. Bok's assessment centered around concerns over the quality of undergraduate curriculum, rising college costs, the rise of for-profit institutions, the stagnating levels of college graduation, the problems of university governance, the strengths and weaknesses of graduate and professional education, the environment for research, and the benefits and drawbacks of the pervasive competition among American colleges and universities (Bok, 2015).

Given the inexorable growth in the cost of a higher education degree, the issue of affordability is relevant irrespective of the current macroeconomic conditions but is particularly vexing during periods of economic downturn and uncertainty as students and other stakeholders weigh the value of foundational and advanced degrees. At the same time, employers are increasingly looking beyond the degree itself with a greater focus on applied skills and trainability factors, lessening the long-standing imperative that the only pathway to economic and social mobility was through the attainment of a conventional college degree. Studies have found that students and parents are questioning the return on their educational investment and the preparedness of today's graduates who enter an increasingly challenging and competitive global economy (Altbach, Reisberg & Rumbley, 2019).

Importance of Effective Leadership

While largely collaborative in their organizational culture, colleges and universities are often places of highly distributed opinions where change is frequently resisted and where authority cannot be universally assumed. These factors contribute to an environment with unique challenges and opportunities for American higher education leadership (Niedlich, Kummer, Bauer, Rieckmann & Bormann, 2020). According to Bush (Bush, 2020), the senior leadership at colleges and universities play a critical role in advancing the mission and values of their respective institutions and are expected to influence and enable a diverse set of internal and external stakeholders to enhance their institution's mission. The needs and priorities of students, faculty, parents, ~~and~~ administrators, state legislators, and governing boards can be quite divergent, thus requiring leadership that can effectively balance competing needs while seeking and reinforcing commonality of mission.

Senior leaders in higher education in general, and presidents ~~are~~ in particular, are also charged with effecting positive organizational change by developing a vision and strategy for the future of the institution, communicating that vision, and then motivating, and inspiring the institution's employees to attaining the vision (Yukl, Mahsud, Prussia & Hassan, 2019). Mead-Fox found that colleges and universities require senior leaders who provide clear vision, imbue a sense of collaboration and trust, motivate, and encourage others to act. These leaders are thus expected to achieve that which sometimes seems unreachable, ~~and~~ all the while introducing an entrepreneurial spirit and effecting needed change (Mead-Fox, 2009). Mead-Fox also noted that executive

leadership is perhaps the single most essential competency needed to move colleges and universities forward.

Methodology of the Study

The study utilized a semi-structured qualitative interview design. The interviews provided information about the background, experiences, and insights of current and recently retired college and university presidents who had prior military service. The Competing Values Framework (Quinn & Rohrbaugh, 1983) was applied to organize various aspects of organizational strategy and personal effectiveness. Quinn and Rohrbaugh suggested that to be effective, organizations and their senior leaders must balance factors related to consistency and effectiveness of leadership and the need to adapt when faced with internal and external environmental developments. When leaders can balance these competing demands, the expected outcomes are a productive internal environment aligned with competitive advantages that support the organization's ability to meet its strategic goals.

This framework supports an analysis of the leader's ability to effectively perform multiple roles and suggests it is a good fit for military leadership research. This is so because military leaders must continually balance competing priorities (i.e., mission accomplishment, supporting followers, following orders, and adapting to changing conditions as required) (Lawrence, Lenk, & Quinn, 2009). Furthermore, the relationship between effective leadership and organizational outcomes, as viewed through the Competing Values Framework, is well established (Judge & Piccolo, 2004).

The population from which the researchers sought participants included current and former presidents at U.S. two, four-year, and graduate institutions of higher education who previously held active-duty roles in any branch of service in the U.S. armed forces (American Council on Education, 2023). The population covered a cross section of the service branches, ranged in age from 52-78, and was predominantly male. Service in the military ranged from junior enlisted to four-star flag officers.

The interview protocol consisted of inquiries related to the participants' motivation to serve in a higher education setting; their experience in military and higher education settings; their perception of the challenges confronting higher education; ways that military service contributes to preparing an individual to confront these challenges; and the respondents' definition of leadership. An open-ended prompt was added at the end of each interview to allow the informant to share any additional information not provided earlier in the interview. A total of fifteen respondents were interviewed. Personally identifiable information was redacted from reporting to protect the privacy of those interviewed. The researchers reviewed the responses to identify major themes to develop findings and also followed up with interviewees to ensure the accuracy of the interpretations of insights gathered through interviews.

Research Questions

The participants were asked the following questions while also allowing the respondents to share additional information not directly addressed through the questions:

1. Tell us about your military experience and what motivated you to pursue a career in higher education?

2. What do you see as the most important challenges facing the U.S. higher education system?

3. How did your military service contribute to preparing you to confront these challenges and what were the primary leadership tenets that you have been able to apply to your presidency?

4. What experiences or values did not transfer or that you found you needed to adjust/compromise?

5. What advice do you have for veterans aspiring for senior leadership roles in higher education?

Findings

This study focused on examining the ways in which higher education leaders draw upon their background in the military in pursuing a career in higher education; views on the broad range of challenges facing the U.S. higher education system; the primary leadership values and practices the respondents have found most transferable to their new roles; and some of the challenges they have faced in transferring their military leadership experiences or values.

Military Experience and Motivation to Pursue a Career in Higher Education

The participants interviewed for this analysis had a diverse background in military service prior to entering the higher education sector. The majority held progressively responsible positions during their military careers with many entering the military through-commissioning sources such as the Reserve Officers' Training Corps, state military colleges, and federal military academies. Others began their military career as enlisted personnel and were subsequently commissioned after earning a post-secondary degree while on active duty. The participants represented all branches of the armed forces except the U.S. Coast Guard and U.S. Space Force. A minority completed the entirety of their career as enlisted leaders in the military. Finally, participants held positions and occupations in a variety of military specialties and fields, and some had experience teaching as a member of the faculty at a U.S. military academy.

In response to why they chose higher education as a career, all of the participants expressed some prior experience with higher education, whether through teaching or through earning a degree before or while in the armed forces. Some of the participants viewed a career in higher education as an extension of their military service or to contribute their skills and thus not fully retire.

One former Army officer and West Point graduate stated that he saw the mission of higher education as another form of shaping young person's lives while others were drawn to wanting to continue to work in the public sector, serving what one described as the "greater good." For one four-star officer, it was simply expressed as "Having seen the commitment and sacrifices made by the many young Marines under my command, higher education represented an opportunity for me

to pay it forward to the next generation." Many of the respondents stated the opportunity to extend the skills they mastered while in the military in strategic planning, budgeting, organizational management, team building, and adaptive leadership in the leadership roles they subsequently pursued in higher education.

A retired Army Colonel cited the opportunity to continue to lead, mentor, and help influence mission attainment (i.e., advancing the educational mission of the institution) within an organization as part of the calling. He stated that he was drawn to the higher education sector as a result of earning a doctorate from an Ivy League institution and that his interests were reinforced through a research agenda centered on higher education leadership. That individual mentioned that his motivation was further centered on the opportunity to continue to serve and care about his followers (i.e., replacing service members with students) and was also drawn to the opportunity to add a non-traditional (read non-academic) voice to the formulation and application of public policy in higher education.

Another respondent, a former one-star Army officer described his introduction to higher education in more providential terms: after graduate school and earning his doctorate, he was assigned to accept a leadership position at West Point and discovered in the process that he had a love for teaching. A three-star general, who went on to lead several higher education institutions, was initially recruited to the presidency to "right the ship" as he put it, for a troubled college and who subsequently fell in love with higher education. Another former officer, a retired three-star admiral, drew upon a foundation of being a leader who listened first and then led, in discovering a passion for the higher education mission. Indeed, several respondents were hired to "right the ship" of a foundering or even a somewhat antiquated university. Most respondents had to emphasize in their job interviews that they were team players, were not "Patton-esque" personalities, or had to become "un-generals." Some also found that the absence of a terminal doctoral degree was a disadvantage.

One of the respondents, a three-star admiral, shared a different pathway. "Everything I thought I was going to do in my career turned out to be something else and looking back, always for the better." When I was asked to accept a temporary assignment to one of the nation's military schools, little did I know that would lead to three successive and successful presidencies. It was along this unexpected path that I developed a love for higher education." Finally, many of the participants made the connection to a culture of common purpose in the sense that both military and academic leaders pursue a common goal for their respective institutions, emphasizing the service to others and attaining a focus on mission above one's self-interests.

Challenges Facing the U.S. Higher Education System

The competitive position of the participants' respective institutions appeared to have some influence on their perceptions of the degree of challenges confronting the U.S. higher education system. Those from more established or better endowed institutions cited less concern than those from the other end of the system's spectrum due primarily to greater institutional support and resources. Common themes centered around institutional ability to adapt, concerns over the cost of a degree, perceptions that the value of a post-secondary degree were in question, and concerns over advancing diversity, equity, and inclusion were cited.

Many respondents talked about the politics surrounding higher education, given that there were so many stakeholders to include not just students, faculty, and staff, but also parents, governing boards, and state legislators. As several noted, all these stakeholders had diverging expectations, values, and visions and were anxious to tell university presidents what to do. Thus, presidents found the circumstances around higher education very ambiguous, with ongoing uncertainties in very every facet of the organization. Some of the respondents cited examples of faculty limited to a perspective within their respective discipline while others noted that oftentimes faculty conversations and concerns seemed to continue even after decisions have been made. One former flag officer expressed the view that issues rarely seemed ever to be settled while another shared that it sometimes seemed that all they did was deal with complaints.

A former U.S. Army officer expressed concerns over a lessening of quality of academic experience given the promulgation of less personal/virtual learning. “I am concerned that a segment of learners is missing out on the societal benefits of campus life.” Another respondent, a retired Air Force officer, spoke about the growing disconnect between traditional degrees and the emerging skill sets required in the workplace, contributing to a lessening of the perceived value of a four-year degree. “We need to do a much better job adapting to a rapidly changing set of market conditions and expectations.” A three-star Navy officer expressed a concern that our nation was being presented with a binary choice of opportunity of affordability wherein higher education was open to some and closed to others based on purely financial affordability. Another reflected on the evolution and necessity of what has been described as an “arms race” in higher education expenditures in order to keep students happy.

Another respondent, a three-star Army veteran, expressed concerns over the broadening disconnect with the public over the value of a higher education degree, the decline in governmental funding, and concerns voiced in public forums over cost and access to borrowing/student debt. Several of the respondents also cited the public perception of a declining value of a liberal arts education. A former chief academic officer at one of the military academies and later a college president, expressed the view that this turn from the liberal arts towards programs perceived to be more “workforce preparation” oriented, represented an undervaluing of a foundation to learn about people and personal values, matters that in the end lead later to leadership. Another saw the tension between the value of a liberal education and the broader communities’ preoccupation with workforce development.

Several respondents talked of the importance of building teams and developing a vision for the institution. For example, one president noted that some of his stakeholders lacked an ability to do strategic thinking for his institution and that surprised him. Another found a lack of teamwork at his institution, thus necessitating the investment of significant resources in building committees as teams that could work together to solve systemic problems.

Many of the participants expressed a desire for greater veteran enrollment as a pathway towards future economic and workforce opportunity and all cited concerns over the impact of rising costs as a disincentive to enrollment and degree completion. One participant, an Air Force general officer summed up the thoughts of many others in expressing the view that “As former military leaders, we have a duty, the opportunity, and a unique set of experiences to help guide our institutions towards

change as we adapt to an increasingly competitive landscape. We have experience dealing with dynamic environments where planning oftentimes goes out the window and where we need to accept those conditions and still accomplish the mission."

Application of Primary Leadership Tenets

Asking the participants how their military service contributed to their preparation in confronting challenges elicited in-depth responses that identified the primary leadership tenets that they found helpful in applying to their current roles. The most common attributes cited were the ability to instill trust; adapt to changing circumstances; provide emotional stability; create a clear purpose for their organization, agree on and live high values, and establish a vision; organizational acumen; and collaboration skills. The respondents uniformly expressed the view that while in the military, these qualities were not only emphasized but expected and that translating them into their current skill sets was essential to their ability to lead effectively.

Instilling a sense of trust and confidence was the most frequently cited leadership tenet in the application of collective leadership. One former 82nd Airborne veteran stated, "Earning the trust of one's followers is not only critical but paramount to any other manifestation of leadership…if they don't trust you, they won't follow you." Confidence in solving problems, especially in stressful situations, was another frequently cited quality. One respondent expressed the attribute well by describing it as "having the ability to navigate and lead through impermanence." He also noted that it was sometimes important not to take "no for an answer" from stakeholders. Another respondent noted that leaders need to show people in their organization that they care more about them than themselves. Still another president noted that overcoming civilian fear about military leaders and developing trust among all stakeholders took longer than he expected.

A three-star Naval officer spoke of leveraging what the officer described as command presence in a shared governance environment. "One of the things I needed to learn was to actively listen when being challenged and then express my leadership in a collaborative manner to instill confidence. When I joined my institution, one of my first decisions was to keep the senior leadership team intact as best I could to convey a sense of trust and confidence in them. Changes did eventually follow, but in a natural and not in a forced manner."

A three-star officer spoke about the commonality that exists between the military and higher education in that both represent highly complex environments where it is imperative to bring people together. This individual had, at one time, stakeholders in the CIA, Department of Defense, National Security Agency, and the Department of State all advising him on responsibilities. This ability to lead through complexity served him well in later balancing the needs of students, faculty, staff, alumni, and the board of trustees for his university. He emphasized the importance of honesty and certitude in and with oneself to be an effective leader, inclusive of having the ability and willingness to look oneself in the mirror to assess and if necessary, correct his leadership practice. Another noted that one of his jobs as president was to teach the board of trustees what its job is: "I have found that my board tries to be the CEO, instead of setting a long-term vision for the university and then evaluating me as I move the institution forward toward that vision."

Leaders' adaptability was another theme with participants citing the importance of being open to others' perspectives, retaining a focus on the objective, maintaining an inner conviction, and in interpreting a given situation. A retired Army Colonel expressed the view that "flexibility, the ability to manage change, and the ability to 'hang in there' when things are not going according to plan, brings out the best in a leader." This leader emphasized the importance of clarity of mission, establishing a moral foundation in taking care of one's subordinates, and in practicing active servant leadership.

Emotional stability came up in several conversations and was seen to be linked to one of the key attributes in establishing and building trust among one's followers. One of the respondents, a former Navy flag officer suggested that emotional stability had a lot to do with knowing himself and leveraging the confidence that came along with that. "If I wasn't aware of and confident in who I was and what I stood for, there's no way that would not have come across to my sailors. I understood that in order to build trust and respect-based relationships, I needed to be consistently clear and fair in communicating my values."

Another key leadership tenet that was expressed pertained to the need for leaders to create a vision for their organizations, the ability to convey a sense of excitement about the future, and the ability to enlist others to a shared or common aspiration. A retired senior Air Force officer put it this way: "I understood that I needed to do more than just give orders…I also needed to help my airmen believe in the future by connecting with and appealing to their values, interests, hopes, and dreams." One of the respondents, a three-star officer who had commanded a carrier strike group consisting of over twenty ships and thousands of sailors, spoke about the need to clearly communicate what he referred to as commander's intent – the ability to communicate a shared vision that would serve to inspire his institution.

Organizational acumen and cognitive capacity also came up in several conversations. The former refers to having a practical understanding of one's internal and external environments and using that knowledge to accomplish objectives efficiently and effectively. It further entails the ability to assess the complexity of these environments in a way that balances the tactical and strategic aspects of any decision. The latter addresses the skill to understanding an independent perspective of a strategic environment. This ability to act tactically while thinking strategically was expressed by a retired Marine Corps officer who stated that he consistently "needed to be able to lead in a way that took into account the complexities of cross-service relationships, the organizational dynamics within his branch, and the critical ability to build consensus while never losing sight of the mission itself." Several respondents also emphasized the need for adopting a non-partisan approach to leadership while being seen as fair and mission oriented. They understood the necessity of this approach given the broad diversity of stakeholders in government and on campus.

Collaboration was a universal trait cited by many. A common theme centered on the fact that military service is inherently team-based and collaborative with each member looking out for others beyond themselves. A few leaders made the connection between their experience working in sometimes ambiguous, highly complex situations that relied on different groups combining their talents to advance common goal. As one Marine Corps veteran stated, "Regardless of rank, position or function, in both the military and on a college campus, you want to be recognized as a trusted partner, someone who does what he or she says and is always willing to work together."

Finally, nearly all of the participants defined the ability to focus on and accomplish a given mission as something that was instilled as part of the leadership development in the military. The ability to adapt to different cultures, changing environments, and variable resources while maintaining a commitment to the institution's mission was paramount in the discussions. As expressed by an Air Force veteran, "In my time in the military, change was the one constant…I experienced diversity in who I worked with, what my role was, where those responsibilities took me, and the capabilities of the group I was part of...but we never had any doubt about why we were somewhere or what we were contributing to get the job done. I feel some of that same focus in my current role in that we're all working together to advance the mission and values of the institution."

Leadership Adjustments in Transitioning to the Civilian/Higher Education Space

Overall, the participants saw their work in higher education as a natural extension of the skills and competencies they had developed in the military. These competencies included mission focus, the ability to act tactically and think strategically, being adaptable and resilient, and the ability to manage change. Commenting on the bureaucratic nature of large organizations, a military academy graduate and senior officer compared the competitive environment that exists between service branches to the divisions within the large university system he helps lead. "My leadership training taught me that when faced with an important decision, to first define the objective, identify the available resources, consider alternatives, and then develop a plan to execute of whatever the goal was."

One president noted that he did not have a lot of human resource and finance experience, something he had to overcome in addressing related issues at what he described as a small, private college in crisis. "I found myself leading an institution with too many majors. We had to eliminate majors by teaching out those students still in the pipeline and then eliminate faculty. We also had to sell off several assets to survive. In doing so, I was able to "bring more money in than was going out."

Another respondent who started a college in an economically depressed community noted that as a university president, he needed to instill accountability and responsibility among all the institutions leaders, noting that the college deans were "not used to being accountable and responsible" for their organizations. He also focused on instilling a sense of mission for the faculty and staff in serving a rapidly changing student population with many students being first-generation and some non-English speakers. He saw the institution's job as changing the lives of the students, one student at a time, and by doing that "changing family life and then changing the community."

Another president who had led two colleges noted that the faculty "had trouble understanding strategic planning. Getting people on board was a huge challenge." He decided to initially do a limited strategic plan; those who did not participate in that plan got left out as resources came in. Then when the college went to a more comprehensive and longer-term plan, "people bought in."

Another respondent spoke about the strength he was able to draw upon when faced with a challenge in his current position. "When I was in the service, I sometimes had to deal with issues that potentially had life and death consequences which has helped me keep the decisions I need to

make now in the proper perspective." Others addressed adjustments they had to make in adapting to the college culture. An Army veteran commented that "these are very different cultures…in the military, everything is defined and order-based – people do what they are told, and everything is team-based – whereas here, everyone seems to have a voice in the decisions we make." This adjustment from a hierarchical structure to a more democratic, collaborative environment was expressed in several conversations. Several respondents also commented on the fact that they recognized that they needed to adjust their communication styles from being direct and frank to a more nuanced and respectful approach.

Advice for Aspiring Leaders

Across the breadth of the interviews, the researchers heard from virtually every participant how much they valued their military experience. There was uniform agreement that their time in the military, and the leadership development experiences they were exposed to, represented an invaluable benefit to them as leaders going forward. One dimension of that development involved leading with character. Several respondents expressed the hope that character development remained a primary focus of military leadership training. As stated by a former senior Marine officer, "People coming up through the ranks that are considering a career in higher education should lean into those programs and opportunities that model positive character, that instil humility and that foster strong relationship building skills as those qualities fit well withing the higher education community. The focus of your skill set is the same – developing leaders. Just because you have left the military, you can still find a mission to support and a leadership team to build."

On a more tactical level, a couple of the participants identified a need for more academic degree programs in higher education administration that focus on ways to translate and transfer military leadership experiences towards higher education careers. Another idea that was posed was to establish closer connections at the program level between higher education associations and the armed forces to help individuals considering a career in higher education with a greater sense for its mission, the different roles available in higher education, how those roles potentially complement their current military occupations and opportunities for professional advancement in the higher education sector. A final item of advice centered on the need to do one's research when considering a transition to higher education. One three-star officer shared "these (president) jobs are not easy, and some skills do not translate. You need to do your homework to really understand and appreciate the culture of higher education and the circles of influence of the specific institution you are considering." The former four-star Marine put it clearly – "pick an institution whose mission and values align with yours, be open to learning, lead with what you've got, and embrace the challenge."

Several respondents emphasized the importance of getting personally involved with faculty, students, and staff, a technique that enhanced their impact. They expressed the view that they found this aspect of their role to be a very engaging experience. In one example, a respondent shared that he had learned a senior was in financial straits and suffering from family problems. He took the senior into his home for the holidays and saw to it that he got financial support. Another president, a former high ranking general officer, shared that he would routinely visit the gate

guards for the college and ensure students staying at the college during breaks were always welcome to his home.

Implications & Conclusions

The U.S. higher education sector is in a period of reflection in addressing a range of questions and challenges related to access, value, and affordability. These challenges underscore the critical need for exemplary senior educational leaders who can ensure positive student outcomes, guide the investment of resources that will serve to enhance and protect the viability of the institution, and provide the necessary leadership to succeed in an increasingly competitive and global environment.

The role of the university president is complex; presidents raise money, build campuses, woo star faculty, fund raise, develop online and sometimes global strategies, enhance the institutional profile, and forge strategic and business alliances within and outside the higher education space. Further, they need to lead while respecting the traditions of their college or university while embracing shared governance of the institution. In addressing the challenges facing higher education today, presidents need to balance their attention by spending more time on campus, applying personal leadership, and better connecting to those who are beginning to question the value of a college degree. Stakeholders need to know their presidents, what their vision is for the institution, and what they personally stand for.

The overwhelming percentage of the respondents that participated in this study appeared to have adapted to their new roles exceptionally well and expressed high levels of job satisfaction in this second chapter of their careers. In some cases, this appears to be a function of early exposure to academic postings while in the military or later exposure to doctoral studies that aided in their preparation for the academy. For many, an open mind, the flexibility to adapt their leadership style, and the acumen earned through leading large, complex organizations were critical elements to their success.

The perspectives offered by the participants, along with the current literature on the relationship between military service, effective leadership, and the challenges and opportunities facing higher education, underscore the opportunities for military leaders considering a transition to the higher education sector. Military veterans have significant experience in critical thinking, strategic leadership, and in effectively leading and caring for others around them. In light of the changes facing the U.S. higher education system, institutions would be well advised to consider the unique skill sets and experiences of this group as prospective senior leaders. This study further suggests there is an opportunity for both the military and higher education sectors to develop and strengthen programs and policies that support the attainment of senior higher education leadership roles by our nation's veterans.

References

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2019). *Trends in global higher education: Tracking an academic revolution*. Brill.

American Council on Education. (2023). American College President Study. Retrieved from http://www.acenet.edu/news-room/Pages/.aspx

Bok, D. (2015). Higher education in America. In *Higher Education in America*. Princeton University Press.

Bogue, B. & Morse, A. (2020). Called to lead. Center for a New American Security.

Bush, T. (2020). Theories of educational leadership and management. *Theories of Educational Leadership and Management*, 1-208.

Collins, J. & Porras, J. *(2004). Built to last.* Harper.

Ferguson, T., & Roofe, C. G. (2020). SDG 4 in higher education: Challenges and opportunities. *International Journal of Sustainability in Higher Education*, *21*(5), 959-975.

Ferguson, J., Rybacki, M., Butts, D. & Carrigan, K., "Comparing Leadership Challenges: Military vs. Civil Service," Center for Creative Leadership, 2016, http://www.ccl.org/wp-content/uploads/2016/02/ComparingLeadershipChallengesMilitary.pdf.

Filho, L., Pallant, E., Enete, A., Richter, B., (2018). Planning and implementing sustainability in higher education institutions: An overview of the difficulties and potentials. *International journal of sustainable development & world ecology*, *25*(8), 713-721.

Jones, H. (2014). *Army Field Manual 5-0: The Operations Process.* https://www.moma.org/interactives/exhibitions/2013/designandviolence/army-field-manual-5-0-the-operations-process-u-s-military/.

Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, *89*, 755–768. 10.1037/0021-9010.89.5.755

Kark, R., Karazi-Presler, T. and Tubi, S., (2016). Paradox and Challenges in Military Leadership – Leadership Lessons from Compelling Contexts. Emerald Group Publishing Limited.

Lawrence, K. A., Lenk, P., & Quinn, R. E. (2009). Behavioral complexity in leadership: The psychometric properties of a new instrument to measure behavioral repertoire. *The Leadership Quarterly*, *20*, 87–102. 10.1016/j.leaqua.2009.01.014

Mead-Fox, D. (2009, April). Tackling the leadership scarcity. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/Tackling-the-Leadership-Sca/44809/

Niedlich, S., Kummer, B., Bauer, M., Rieckmann, M., & Bormann, I. (2020). Cultures of sustainability governance in higher education institutions: A multi-case study of dimensions and implications. *Higher Education Quarterly*, *74*(4), 373-390.

Quinn, R. E., & Rohrbaugh, J. (1983). A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. *Management Science*, *29*, 363–377. 10.1287/mnsc.29.3.363

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2023). Condition of Education Annual Report.

Yukl, G., Mahsud, R., Prussia, G., & Hassan, S. (2019). Effectiveness of broad and specific leadership behaviors. *Personnel Review*.

Journal of Higher Education Management, **39**(1), 107-124 (ISSN 2640-7515).

Assessing Relationships Between Incidences of Workplace Bullying and Job Satisfaction, Employee Gender and Employee Rank

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Nielsen and Einarsen (2018) defined workplace bullying (WPB) as the conditions under which an employee is frequently exposed to harassing behavior from one or more colleagues over a prolonged time. As a unique phenomenon, workplace bullying is also referred to as mobbing (Abbas et al., 2017; Anjum & Muazzam, 2019), where the victim cannot defend themselves against this precise abuse (Nielsen & Einarsen, 2018). WPB studies have risen from countries worldwide with consistent findings and similar outcomes (Hewett et al., 2018; Nielsen & Einarsen, 2018). Bernstein and Trimm (2016) stated that bullied individuals suffer from increased anxiety and fear and lack professional competence. In addition, bullied individuals feel reduced job satisfaction, affecting employees' productivity resulting in the need to leave their employment (Bernstein & Trimm, 2016). In addition, research has shown a relationship between job stress components, job-related emotional well-being, and interpersonal conflicts (Hadadian, & Sayadpour, 2018).

The Workplace Bullying Institute reported 60.4 million American workers had been bullied within their organization in higher education (Smith & Coel, 2018). WPB in higher education institutions is a significant issue that has impacted faculty and staff job performance (Metzger et al., 2015). Culture in higher education institutions is vital and employees, stakeholders, and organization leaders need to understand the culture of higher education institutions (Taye et al., 2019). Moreover, culture shapes the organization's tone, serves as a guide for employees on how to interact with colleagues, and sets the organization's tone (Desson & Clouthier, 2010). Understanding the culture within the organization assists administrators in resolving future conflicts and avoiding bullying in the workplace (Taye et al., 2019).

This study employed correlational research aimed at understanding the effects of bullying in the higher education workplace. Specifically, the research sought to determine if a statistically significant relationship exists between workplace bullying and job satisfaction, between incidences of workplace bullying and gender, between incidences of workplace bullying and employee rank
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Theoretical Framework

Maslow's Hierarchy of Needs theory was chosen as the theoretical framework for this study. In 1943, Abraham H. Maslow developed the hierarchy focusing on motivation and personality in a paper called "A Theory of Human Motivation" (Jerome, 2013). Maslow recognized that people whose lower-level needs are met are motivated to seek higher-level needs, which are fulfilled simultaneously based on their circumstances (Harkins, 2019). The theory implies that humans are motivated by numerous needs and that these needs exist in a hierarchical order (see Figure 1). Modi (2019) noted that Maslow believed that individuals work to survive and live through financial

rewards, make new friends, have job stability, perceive achievement, feel significant in society, have a feeling of individuality, and most significantly have job satisfaction. According to Modi (2019) employees who are high performers in their respective workplaces are satisfied with their job. Maslow's Hierarchy of Needs serves as a guide to the individuals needs to be met to succeed in their job satisfaction in their work environment.

Research Questions

RQ1: Is there a statistically significant relationship between workplace bullying, as measured by the Negative Acts Questionnaire-Revised (NAQ-R), and job satisfaction, as measured by the Job Descriptive Index (JDI) in higher education institutions?

RQ2: Is there a statistically significant relationship between incidences of workplace bullying, as measured by the Negative Acts Questionnaire-Revised (NAQ-R), and employee gender in higher education institutions?

Literature Review

Bartlett (2016) noted that according to the 2014 Workplace Bullying Institute, 27% of working Americans said they are currently experiencing or have experienced abusive behavior at work. In essence, WPB is present when the victim and the bully have inequity of power, and in response, the victim has a hard time defending against those harmful acts (Gamian-Wilk et al., 2017). As a result, bullying in the workplace has been shown to negatively influence victims' job satisfaction. Furthermore, WPB is a significant problem that is often unnoticed and overlooked in higher education institutions.

U.S. Workplace Bulling Survey Findings

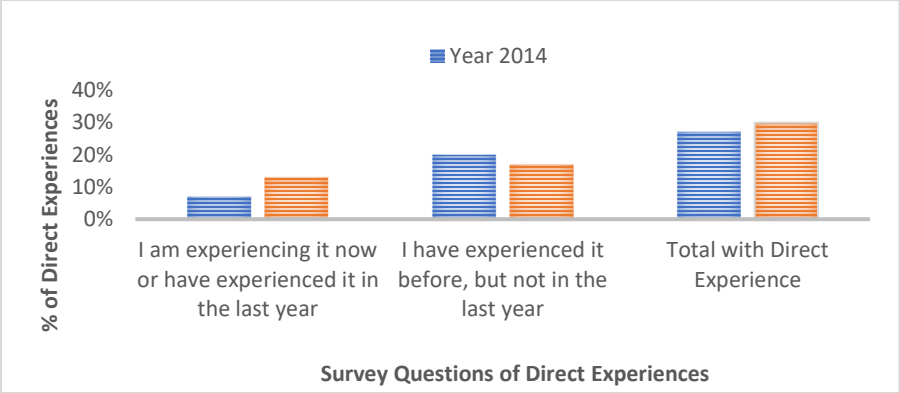
The Workplace Bullying Institute (WBI) conducted a national survey of WPB aiming at the frequency of abusive conduct. WBI surveyed respondents based on their own experience with the following mistreatment: abusive behavior that consists of humiliating, threatening, intimidating, work sabotage, or verbal abuse (Namie et al., 2014; Namie, 2021). In the 2014 WBI Survey, 7% of respondents stated that they experienced directly abusive conduct at work, and 20% of respondents reported that sometime in their work but not the previous year experienced direct abusive conduct (Namie et al., 2014). In comparison, in the 2021 survey, 13% of respondents stated that they experienced directly abusive conduct at work, and 17% of respondents reported that sometime in their work but not the previous year experienced direct abusive conduct (Namie, 2021). Overall, the study found a 3% increase in direct experiences with WPB (See Figure 1).

The U.S. Bureau of Labor Statistics estimated that there are approximately 160,537,000 employees in the U.S. civilian labor force (Namie, 2021). In a 2021 report, 48,619,687 workers reported an experience with workplace bullying (Namie, 2021). In that same 2021 report, it was found that 67% of men were bullies, 65% women chose to target other women, and 51% of the men were bullied targets (Namie, 2021). When it comes to gender, women in leadership positions in a male-dominated area are more than likely to face bullying, incivility, and harassment (Taylor et al., 2018).

Taylor et al. (2018) stated that women in higher education positions were more likely to be bullied than men because of their minority rank (Taylor et al., 2018).

Figure 1

National Prevalence Types of Bullying Experiences



Note: Prevalence of types of bullying experiences as reported by Workplace Bullying Institute.

Data further showed a 9% increase in individuals who are higher ranked than the target, a 12% decrease in coworkers/peers, and a 3% increase in individuals who are lower rank than the target (See Figure 5) (Namie et al., 2014; Namie, 2021), and that bosses continue the most repeated perpetrators across all WBI national surveys (Namie et al., 2014, Namie, 2021). The report showed that 52% of bullied targets are employees who do not hold supervisor positions.

Workplace Policies and Action. Perpetrators faced consequences such as being punished, terminated, or quitting. The Workplace Bullying Institute Survey 2014 data showed that 11% of the perpetrators were punished but kept in the job, 10% of the perpetrators were terminated, and 5% of the perpetrators voluntarily quit (Namie et al., 2014). Comparatively, 2021 survey data showed that 11% of the perpetrators were punished but kept on the job, 9% were terminated, and 3% voluntarily quit (Namie, 2021). Targets of workplace bullying also faced consequences such as quitting, being forced out, termination, or being transferred.

Workplace Culture as a Contributor to Workplace Bullying

Workplace culture plays a vital role in defining employees' work satisfaction and behavior (Addo, D.N.S., 2022; Lester, 2013). Culture defines who we are, the way we think, how we do things, and how we relate with people (Addo, D.N.S., 2022). Northouse (2016) defined culture as the learned traditions, rules, beliefs, values, symbols, and norms familiar to a group of people. It also directs the mindset and performance of the employees at the workplace; therefore, culture is influential because it either strengthens or undermines the organization's objectives (Addo, D.N.S., 2022). Workplace culture is shaped by the trust between the employees and the supervisors of an

organization (Hao & Yazdanifard, 2015). Thus, a well-defined and well-intentioned organizational culture will also determine the extent to which workplace bullying is tolerated (Lester, 2013).

Aside from being bad for business, workplace bullying is harsh and negatively impacts the institution's name, morale, and resources, indicating that the institution has a problem with leadership (Meyer, 2021). Creating a positive culture requires devotion a zero-tolerance approach to bullying, and supportable ethical conduct from administration and leaders (Wagner & Hollenback, 2020). A good organizational culture improves performance, reduces the organization's turnover rate, and facilitates the solution of internal issues (Hao & Yazdanifard, 2015). A positive culture is essential because it draws talent, leads to engagement and retention, influences satisfaction, and increases productivity and employee morale (Addo, D.N.S., 2022; Robert, 2018).

Olive and Cangemi (2015) stated that workplace bullying is enabled when organizations create conditions such as a win-lose culture where individuals feel like they compete to undo one another. These conditions create a negative workplace culture that faces several consequences: employee health care bills increase, legal costs and consultations, lack of productivity, lack of innovation, a decline in profit, and loss of excellent workers (Bulut, 2019; Munir et al., 2020). The long-term impacts of workplace bullying affect employee quality of life, career, and economic stability (Abumere, 2021; Munir et al., 2020). It also leads to losing employee morale and continuous absences (Abumere, 2021 Munir et al., 2020). It is essential to recognize that workplace culture manipulates reactions and attitudes to these behaviors and how individuals treat the victim (Tehrani, 2012). In essence, the culture must match the environment, and employees must be efficient (Mohelska and Sokolova, 2018). Successful leaders in higher education institutions deliver direction and create an environment to support their employees' decisions and foster a positive, supportive, and collaborative environment (Wajngurt, 2014).

Workplace Bullying Prevention and Supported Programs

Human Resources (HR) departments play a significant role in applying anti-bullying policies and interventions to diminish workplace bullying in higher education institutions. Acknowledging that WPB policies may signify only part of a comprehensive organizational approach, organizations use a variety of interventions to deal with WPB (Ferris et al., 2021). Workplace Bullying Institute Survey 2014 data showed that 93% of the American public were aware of the abusive conduct at work and supported specific anti-bullying legislation.

Zero-Tolerance Policies. Anti-bullying policies should define what bullying constitutes, and procedures should be clear when handling workplace bullying (Salin et al., 2020). Zero-tolerance policies are effective for all professional parties, such as faculty and staff, and when there are no exceptions to commitment (Cleary et al., 2009). Organizational leaders should develop and implement a zero-tolerance policy for misconduct and provide training for all employees on proper workplace behavior (Spruce, 2019). Implementing a zero-tolerance policy helps the organization's morale and production. All employees need to be mindful of policies to prevent bullying and know that the organization will enforce the bullying policies (Cleary et al., 2009).

Anti-Bullying Intervention. Timecourse is an intervention type used in the workplace to prevent or approach workplace bullying situations (Salin et al., 2020; Caponecchia et al., 2020). The time

course intervention consists of three anti-bullying interventions in bullying situations: primary, secondary, and tertiary (Salin et al., 2020). The primary anti-bullying interventions occur in the pre-bullying stage and aim to prevent the problem before the bullying arises (Ferris et al., 2021; Caponecchia et al., 2020). The primary anti-bullying interventions include revamping the work environment, conflict management, implementing leadership professional development, educating employees on bullying awareness and its consequences, and focusing on anti-bullying policies and codes of conduct (Salin et al., 2020; Munir et al., 2020). Secondary anti-bullying interventions, known as the episodic bullying stage, are implemented when the primary interventions are unsuccessful, and bullying occurs (Salin et al., 2020; Munir et al., 2020; Caponecchia et al., 2020). It seeks to delay the occurrence of the problem and minimize its harm (Salin et al., 2020; Munir et al., 2020; Caponecchia et al., 2020). Secondary anti-bullying interventions are informal attempts at resolution, grievance processes, and target support (Ferris et al., 2021). Speaking to the perpetrator or compromising with the organization and later requiring a proper examination is how the first attempts to address unacceptable behavior (Salin et al., 2020). Tertiary anti-bullying interventions known as the post-bullying stage is to attempt to reduce the effect of the problem and support recovery by external parties outside of the organizations, such as counseling and psychotherapy (Salin et al., 2020; Munir et al., 2020; Ferris et al., 2021; Caponecchia et al., 2020). Moreover, the most reliable measure of these interventions is through occupational health care services agreements or referrals (Salin et al., 2020).

Organizational Citizenship Behavior. Organizational citizenship behavior (OCB) is recognized as one of the significant components that enrich organizational success to attain the organization's objectives (Hossain, 2020). OCB has been defined as when employees willingly participate in activities to promote the organization's success but are not rewarded (Hossain, 2020). Various studies have emphasized the positive impact OCB plays on employees' job performance (Nadeak et al., 2021). Studies have found a correlation between perceptions of being treated and treating others with fairness (Rose et al., 2016). Studies also found that individuals with high OCB behavior can self-regulate themselves and use signals to monitor their behavior and engagements with others (Rose et al., 2016). OCB also improves employee’s performance by creating a positive work environment (Nadeak et al., 2021).

Leadership Strategies. Research indicates that positive leadership in the organization can ease bullying actions (Mills et al., 2019). Employees with poor leadership experience bullying significantly more than those with more positive leadership (Mills et al., 2019). Dissatisfaction with leadership is powerfully associated with bullying behaviors in the workplace, and weak administration allows victims to be vulnerable (Mills et al., 2019). Supervisors who permit employees to have some control over task completion tend to pursue ways to diminish work tension and give appropriate work-related support levels to reduce workplace bullying perceptions (Mills et al., 2019).

Leaders are significant in initiating and reinforcing an organization's values to the organization's culture (Gartenstein, 2019). A leader's energy influences how employees feel about going to work and how they interact with others (Gartenstein, 2019). An organization's culture led through transformational leadership promotes a culture of motivation in which employees believe in their organization and work performance (Gartenstein, 2019). Individuals who are transformational leaders have a powerful impact on the mindsets and behaviors of their employees and are known as visionary individuals who encourage others to succeed (Abelha et al., 2018). The culture of an

organization led through servant leadership styles will encourage trust, learning, and independence at all levels of the organization (Gartenstein, 2019). Servant leadership has been associated with job performance and job satisfaction which employees must cultivate through organizational values, socialization, and reinforcement (Giambatista at al., 2020).

Method

The sought to examine the relationship between workplace bullying and job satisfaction in higher education institutions. Correlational research used statistical analysis to determine if a statistically significant relationship exists between workplace bullying, as measured by the Negative Acts Questionnaire-Revised (NAQ-R), and job satisfaction, as measured by the Job Descriptive Index (JDI), between incidences of workplace bullying and gender (RQ2), and between incidences of workplace bullying and employee rank (RQ3). A voluntary sampling method was used. Over 3000 higher education faculty and staff were invited via university email to participate in two questionnaires using Survey Monkey. A Pearson R correlation test was conducted independently for each research question.

Instrumentation

A survey invitation was delivered via email to over 3000 higher education faculty and staff, employed for at least two years, within one university system. Participants were selected using voluntary response sampling, giving faculty and staff equal opportunity to take part in the survey based on the Negative Acts Questionnaire-Revised (NAQ-R) and Job Descriptive Index (JDI) and administered online using SurveyMonkey.com. The Negative Acts Questionnaire-Revised (NAQ-R) measured the workplace's exposure levels of bullying incidents (Rai & Agarwal, 2017). The Job Descriptive Index (JDI) instrument measured job satisfaction (Chaturvedi & Dubey, 2016). The survey was estimated to take approximately 15-20 minutes.

Negative Acts Questionnaire-Revised. The Negative Acts Questionnaire-Revised (NAQ-R) is intended to calculate bullying occurrences within the workplace (Rai & Agarwal, 2017). Prior results of the survey showed that the 22-item tool has a high internal stability rate that includes three underlying factors: bullying, personal, work-related, and physically intimidating forms of harassment (Hidzir et al., 2017; Rai & Agarwal 2017).

The NAQ-R has been used as a single factor to measure the level of workplace bullying, such as the behavioral aspect of the perpetrator and victim. The criterion to establish the validity was explored by relating the scores on the NAQ-R to a single-item measure of perceived victimization from bullying. The research data showed the correlations with the total NAQ-R items and scores on the three bullying factors (Rai & Agarwal, 2017). The NAQ-R questionnaire consisted of a Likert scale that corresponded with the participants workplace experience.

The Job Descriptive Index. Since the 1960s, The Job Descriptive Index (JDI) has been used in research as a self-report to calculate job satisfaction (Chaturvedi & Dubey, 2016). The JDI is being modified by the university's Job Descriptive Index Research Group and is available through Bowling Green State University (Judge et al., 2017). JDI is a self-report that measures job satisfaction, defined as workers' feelings toward their job (Chaturvedi & Dubey, 2016).

The JDI measures job satisfaction using six components that describe a different aspect of their job description. The six components are people on your present job, a job in general, work on the present job, pay, opportunities for promotion, and supervision. Each component had either 9 or 18 items. A 'Yes' response indicated that the phrase described the job situation. In contrast, a 'No' response meant that the word did not represent the job situation. A "?" was provided as an optional response in the event that the respondent could not decide. In the opportunities for promotion section, respondents were asked to rate their perceived opportunities for promotion. As an example, phrases such as "regular promotions," "dead-end job," and "promotion on ability" are provided, and respondents indicated either "Y," "N," or "?". Judge, et al., (2017) studied the validity of many jobs' satisfaction instruments, including the (JDI).

Results

A total of 308 eligible participants (213 female, 94 male, 1 declined to respond) responded to the survey. Of the sample group, 49% identified as White, 86% were over the age of 35, 62% reported their role as university staff (not faculty), with virtually all participants (99%) being employed full time.

Research Question 1: Workplace Bullying and Job Satisfaction

Job satisfaction was measured by using the Job Descriptive Index (JDI). To find the JDI score, we used the General Quick Reference Guide provided by the instrument developers, Brodke et al. (2009) from Bowling Green State University. The reference guide recommended that for each question across the six components, a response of "Yes" qualified as a score of 3, "No," should be a 0, and if the respondent marked "?" the score applied should be 1. If there were any missing responses in the JDI components, there was additional data cleaning that needed to occur.

- In the *Work, Supervision*, and *Coworker* facets, each which had 18 items, it was recommended to use a "1" if the participants had 3 or fewer missing responses. If the participant had 4 or more missing responses, it was instructed not to compute the facet (delete the survey).

- In the *Pay* and *Promotion* facets which each had a total of 9 items, it was recommended to use a "1" if the participants had 2 or fewer missing responses. If the participant had 3 or more missing responses, it was recommended not to compute the facet (delete the survey).

We exported the data from Survey Monkey and downloaded into Microsoft Excel sheet. In a new Excel spreadsheet, I exported the Work, Supervision, and Coworker columns and used the replace all function in Microsoft Excel to change the "Yes" to a "1" and the "No" to a "0". Using the reference guide for any survey entry with 3 or fewer missing responses, we entered a "1". For any survey entry with 4 or more missing responses, we deleted the survey.

In another new Excel spreadsheet, we exported Pay and Promotion columns and used the replace all functions in Microsoft Excel to change the "Yes" to a "1" and the "No" to a "0". Using the reference guide for any survey entry with 2 or fewer missing responses we entered a "1". For any

survey entry with 3 or more missing responses, we deleted the survey. There were 171 “No” and 124 “Yes” totaling 295 surveys after cleaning the survey data.

The JDI includes what the authors call “negatively worded items” which requires a reverse scoring step in the cleaning of data. The reference guide provided a chart with the items that we had to reverse to score the JDI facets, shown in Table 2.

Table 2

JDI Facet and Negative Words

Work	Routine, Boring, Simple, Repetitive, Dull and Uninteresting.
Pay	Barely live on Income, Bad, less than I deserve, Underpaid
Promotion	Opportunities somewhat limited, Dead-end job, Very limited, Infrequent promotions
Supervision	Hard to please, Impolite, Unkind, Has favorites, Annoying, Stubborn, Bad, Poor planner, Lazy
Coworker	Boring, Slow, Stupid, Easy to make enemies, Rude, Lazy, Unpleasant, Narrow interests, Frustrating, Stubborn
Job in General	Bad, Waste of time, Undesirable, Worse than Most, Disagreeable, Inadequate, Rotten, Poor

Note: From Job Descriptive Index and Job in General 2009 Revision Quick Reference Guide.

Accordingly, we exported the individual columns for each of the negatively worded items and used the replace all function in Microsoft Excel to change the “3” to “0” and the “0” to “3”. Then we followed the second step in scoring the Job Descriptive Index (JDI) and Job In General (JIG). The JDI scale measures satisfaction with different facets of the job situation: the work itself, pay, promotion, supervision, and coworkers (Brodke et.al., 2009). The JIG scale measures overall satisfaction with the job (Brodke et.al., 2009). We had to compute the JDI scores and the JIG scale score. We calculated both, the JDI score and the JIG score, by adding the values of each facet in each JDI and JIG facets. The total score for the Work, Supervision and Coworker facets of the JDI and the JIG were composed by totaling the values of the 18 items. Pay and Promotion have nine items; therefore, to calculate the final score, we calculated the average score by summing the value of the nine items on each facet and doubling up the sum to equal the lengths of the JDI and JIG scales. The possible scores on each scale ranged from 0 to 54. Majority of the averages of each facet showed high levels of satisfaction. The survey data was exported to SPSS to see if there was a correlation between job satisfaction and bullying experiences.

Results for RQ1. A total of 295 eligible participants (Table 3) completed the survey questions to provide a job satisfaction score.

Table 3

Descriptive Statistics for RQ1

	Mean	Std. Deviation	N
Workplace Bullying	.4203	.49445	295
Job Satisfaction	32.0949	10.79987	295

The coefficients were computed among the job satisfaction and bullying variables (Table 4). Using the Pearson Correlation to control for Type I error across the two correlations, a *p value* of less than .005 was required for significance. The correlation is significant at the 0.01 level (2-tailed). The correlation between workplace bullying and job satisfaction is negative, r (293) = -.52, $p < .001$. The results show that the correlation between job satisfaction is negatively correlated with bullying. The results mean if individuals are experiencing bullying behaviors, their job satisfaction is decreased in their workplace environment.

Table 4

Correlation Between Workplace Bullying and Job Satisfaction

		Bullying	Satisfaction
Workplace Bullying	Pearson Correlation	1	-.523**
	Sig. (2-tailed)		<.001
	N	295	295
Job Satisfaction	Pearson Correlation	-.523**	1
	Sig. (2-tailed)	<.001	
	N	295	295

Note. The correlation is significant at the 0.01 level (2-tailed).

Research Question 2: Workplace Bullying and Employee Gender

Research Question 2 sought to determine if there is a correlation between workplace bullying and gender.

Data Analysis for RQ2. The survey read "Bullying is defined as a situation where one or several individuals persistently over a period of time perceive themselves to be on the receiving end of negative actions from one or several persons, in a situation where the target of bullying has difficulty in defending him or herself against these actions. We do not refer to a one-off time incident as bullying. Using the above definition, have you been bullied at work over the last six months?" which provided the data necessary to test research question 2. We used the replace all function in Microsoft Excel to change a "1" for any "Yes" and "0" for "No". We deleted the survey entry for participants who left the question unanswered. There were a total of 96 "Yes" and 172 "No" of employees who answered if they had been bullied at work over the last six months. The

survey also asked participants to indicate their gender. In the data cleaning process, we used the ”replace all function” in Microsoft Excel to change responses of female to a “1” and a “0” for males. Of the 308 surveys submitted, only 294 respondents answered the question about gender.

Results for RQ2. There were a total of 204 females and 90 males included in the analysis after removing those who did not complete the answer items for this research question. Table 5 shows a total of 294 eligible participants completed the survey question pertinent to gender.

Table 5

Descriptive Statistics for RQ2

	Mean	Std. Deviation	N
Workplace Bullying	.4184	.49413	294
Employee Gender	.6939	.46167	294

Table 6 illustrates the correlation between workplace bullying and employee gender. The correlation coefficients were computed among the workplace bullying and gender variables. Using the Pearson Correlation to control for Type I error across the two correlations, a *p value* of less than .005 was required for the significance. The correlation between workplace bullying and gender is, r (292) = .010, $p < .868$. Since however the p-value of the test (.868) is not less than 0.05, the test fails to reject the null hypothesis. In other words, there was insufficient evidence to determine a correlation between workplace bullying and gender.

Table 7

Correlation Between Workplace Bullying and Employee Gender

		Workplace Bullying	Employee Gender
Workplace Bullying	Pearson Correlation	1	.010
	Sig. (2-tailed)		.868
	N	294	294
Employee Gender	Pearson Correlation	.010	1
	Sig. (2-tailed)	.868	
	N	294	294

Note. The correlation is significant at the 0.01 level (2-tailed).

Research Question 3: Workplace Bullying and Employee Rank

To test for a correlation between workplace bullying and employee rank (RQ3), we exported survey response data from Survey Monkey and downloaded into Microsoft Excel sheet.

Data Analysis for RQ3. The survey asked, "At the institution of higher education where you are currently employed please indicate whether you are faculty or staff." Respondents were provided options to self-identify as staff, faculty, or other. We used the replace all function in Microsoft Excel to change any response of staff to "1"and responses self-identifying as faculty to "2." A total of 10 respondents answered "other' and entered comments to explain their role at the institution of higher education. Examples included administrative director, department chair, graduate assistant, and other administrative roles. For purposes of this study and data analysis, all 10 of the "other" responses were classified as staff and thus also changed to "1."

Results for RQ3. Of the 308 submitted surveys, only 295 provided responses to the question about employment status as faculty or staff. Thus, only those 295 were included in the analysis for Research Question 3. For only those 295 survey responses, we collected survey response data to Question #21 which provided survey respondents with an opportunity to report whether they have experienced bullying in the workplace. We used the replace all in Microsoft Excel to change a "1" for any "Yes" and "0" for "No" about workplace bullying experiences. Table 8 illustrates the descriptive statistics of the data analysis for Research Question 3.

Table 8

Descriptive Statistics for RQ3

	Mean	Std. Deviation	N
Employee Rank	1.3525	.47857	295
Workplace Bullying	.4203	.49445	295

Table 9 illustrates the correlation between employee rank and workplace bullying. The correlation coefficients were computed among the employee rank variables and workplace bullying. Using the Pearson Correlation to control for Type I error across the two correlations, a *p value* of less than .005 was required for the significance. The correlation is significant at the level of 0.05 level (2-tailed). A *p value* of less than .005 was required for significance. The result of the correlational analysis between employee rank and workplace bullying is .119, a weak correlation $r(293) = .119$, $p < .041$. Since however the p-value of the test (.041) is not less than 0.05, the test fails to reject the null hypothesis. In other words, there is insufficient evidence to determine a correlation between workplace bullying and rank.

Table 9

Correlation Between Employee Rank and Workplace Bullying

		Employee Rank	Workplace Bullying
Employee Rank	Pearson Correlation	1	.119
	Sig. (2-tailed)		.041
	N	295	295
Workplace Bullying	Pearson Correlation	.119	1

	Sig. (2-tailed)	.041	
	N	295	295

Note. The correlation is significant at the 0.05 level (2-tailed).

To better understand these results, we used the same data set to run a frequency distribution. Table 10 shows the results of the frequency distribution test. If the respondents said "yes" to bullying data was collected to show *who* the bully was (supervisor, colleague, other). Approximately 50% of respondents who replied "yes" to incidences of workplace bullying reported that supervisors (coded as 1) were the bully/offender, 37% of the respondents stated that colleagues (coded as 2) were the bully/offender, and 13% of the respondents stated that others (coded 3) were the bully/offender.

Table 10

Descriptive Statistics Employee Rank: Who is the Bully?

Employee Rank					
N		Valid	126		
		Missing	0		
Mean			1.6270		
Median			1.5000		
Mode			1.00		
Std. Deviation			.70125		
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	63	50.0	50.0	50.0
	2.00	47	37.3	37.3	37.3
	3.00	16	12.7	12.7	12.7
	Total	126	100.0	100.0	100.0

Note. The employee rank 1.00 is for Supervisors, 2.00 is for Colleagues, and 3.00 is for Others.

Discussion

The leading research question of the study asked whether a statistically significant correlation exists between workplace bullying job satisfaction. With consideration of the literature review, the results were not surprising. The data analysis found that job satisfaction is negatively correlated with workplace bullying, such that if an employee is bullied in the workplace, he/she is likely unhappy there as well. Job satisfaction plays a significant role in an individual's workplace environment. People who experience a toxic environment are more likely to have low morale and more than likely will produce less. Research finds that employees who are unhappy with their jobs are more likely to violate the organization's goals and/ or perform inadequately and voice their urge to quit

(Seriwatana, 2022). The results of this study agree with evidence in the literature that workplace bullying negatively impacts job satisfaction.

Workplace Culture

To positively influence goal attainment, every workplace should aspire for a positive, hardworking, reliable, and productive environment. The results of this study perpetuate concerns about the negative impact of a negative workplace culture. Job satisfaction was found to decrease if workplace bullying is experienced. Although the research was unable to determine a statistically significant correlation between workplace bullying and gender or employee rank, the results still warrant consideration and further review because the results imply that anyone, regardless of gender or status in the workplace, can be a target of bullying. In a workplace setting that fails to implement protocols that discourage or act upon bullying concerns, males and females, whether faculty or staff at a university, are subject to these negative acts. Higher education institutions must have individuals who are leaders and know their position is culture shapers, and it is their responsibility to ensure that workplace bullying does not take place within their organization (Meyer, 2021).

Leadership

The very nature of a bully is to exert some sort of power over a victim. To note that in the data collected in this study, the supervisor (leader/manager) of the workplace was often the cause of the bullying experience, is a direct violation of the premise of a positive workplace culture. Instead of encouraging and supporting employees, supervisors cited in this study instead made employees feel unsafe and unwanted, a disregard of Maslow's noted need for safety and belonging. Thus, it is imperative that workplace leaders work to cultivate a positive workplace culture. A positive work environment and one where basic needs are met (De Vito, 2018).

A review of the literature found that that higher education is rich for bullies because cultures are favorable to sociocultural control inequalities (Smith & Coel, 2018). The findings of this study confirm these assertions. Smith and Coel (2018) also stated that higher education institutions support criticism and debate, so behaviors can be valid from those who feel threatened. As evidenced by the findings in this research, this can be a cause for why supervisors feel empowered or enabled to bully or exert negative leadership approaches in the work environment. Often supervisors are not only in positions of power, but in higher education, are tenured or have seniority. A common mentality, without procedures in place to dispel it, is that they are within their right to display negative behaviors guised as authority. In response, lesser experienced employees do not question supervisor/bully commands and abide by fear of retaliation or losing their job.

Within institutions of higher education, leaders must create an environment to support employees' and foster a positive, supportive, and collaborative environment (Wajngurt, 2014). Leaders can create a healthy workplace culture by growing employee relations, building common characteristics such as collaboration, supportiveness, and respect, providing a secure workplace, providing opportunities for professional development, and being aware of employees' well-being (Addo, D.N.S., 2022).

It is incumbent upon workplace leadership in any setting to be fair and hold all members of the organization to the expectations of the role assigned. Moreover, it is incumbent on the leadership and the organization as whole to ensure a positive workplace culture that is conducive to meeting the needs not only of the organization, but of its employees. Supervisors must make decisions that benefit the department/unit in line with university goals. Failure to do so has significant negative impacts as evidenced in the study.

Recommendations for Practice

Implementing workplace bullying prevention and supporting programs in higher education is vital to ensure a positive work environment and diminish workplace bullying. Of the six higher education institutions that were included in this study, only one had a published bullying and workplace violence reporting form available on its website with reference to a guidebook with clearly delineated procedures and consequences for threatening behavior concerns. While commendable at this singular institution, this effort is reactive action, rather than proactive.

Human Resources (HR) is the heart of any workplace which means that the department has the power to create and implement policies to create a healthy and positive environment and ensure that employees are well protected. Higher education institutions should enforce workplace bullying policies to ensure a nontoxic environment and should also incorporate monthly or yearly workplace bullying training and educate the employees on how it impacts the workplace culture and individuals' lives and mental health. Also, HR departments should implement investigations that may lead to consequences followed by termination of employment if the complaints are to be proven after proper protocols.

Policymakers are also encouraged to use the findings of this study to find workplace bullying policies in higher education institutions. Coordinators across the U.S. have petitioned for 18 years for the anti-bullying Healthy Workplace Bill (HWB), which aims to direct employers to take the complaints seriously from victimized employees and introduced in 31 states (Wajngurt, 2014). Still despite the fact that 90% of Americans publicly support for a law that expands protections beyond current nondiscrimination policies, the legislation has been opposed because opponents argue that HWB is not needed (Workplace Bullying Institute Survey, 2021).

Limitations of the Study

The study had a large sample of faculty and staff from one state university system. One limitation of the study was how professionals experience and handle WPB in higher education institutions. The experiences of the faculty and staff may be subjective (Rai & Agarwal, 2017). Although 308 survey responses were collected, only 136 of those answered "yes" to the question the provided the definition of workplace bullying, and asked if they had experienced workplace bullying. This is evidence of that subjective view of the meaning or qualifying experience of bullying. Another limitation of the study was that only one university system was used. Further, inclusion of institutions beyond one university system may reflect a more accurate picture of workplace bullying in higher education, rather than what may be a reflection here of workplace bullying or culture within the selected university system.

Conclusion

Especially in higher education, a failure to focus on positive workplace culture and job satisfaction not only negatively impacts faculty and staff, but students. Higher education institutions must ensure that their employees' needs are met to produce high-quality work benefiting students as employees of higher education institutions deserve a workplace culture that matches the passion they so clearly display for student success.

References

Abbas, A. A., Hussein, A. A., & Khali, H. H. (2017). The effect of hostile work environment on organizational alienation: the mediation role of the relationship between the leader and followers. *Asian Social Science*, *13*(2), 140-158.

Abelha, D. M., Carneiro, P. C. D. C., & Cavazotte, F. D. S. C. N. (2018). Transformational leadership and job satisfaction: Assessing the influence of organizational contextual factors and individual characteristics. *Revista Brasileira de Gestao de Negocios*, *20* (4), 516-532.

Abumere, F. I. (2021). Understanding Workplace Harassment-Its Varying Types and Consequences. *International Journal of Research and Innovation in Social Science (IJRISS), 5*(9), 2454-6186.

Addo, D.N.S. (Feb. 2022). *A Healthy Workplace Culture and Its Importance.* Retrieved from https://www.linkedin.com/pulse/healthy-workplace-culture-its-importance-addo-bba-pchrsm-mam-adr/

Anjum, A., & Muazzam, A. (2019). Workplace bullying and physical health of teachers working in higher education institutes. *Journal of Postgraduate Medical Institute (Peshawar-Pakistan)*, *33*(3), 227-230.

Bernstein, C., & Trimm, L. (2016). The impact of workplace bullying on individual wellbeing: The moderating role of coping. *SA Journal of Human Resource Management*, *14*(1), 1-12.

Bartlett, J. A. (2016). Workplace bullying: A silent epidemic. *Library Leadership & Management*, *32*(1), 1-4.

Brodke, M., Sliter, M., Balzer, W., Gillespie, J. Z., Gillespie, M. A., Gopalkrishnan, P., & Yankelevich, M. (2009). The job descriptive index and job in general: 2009 revision quick reference guide. *Bowling Green, OH: Bowling Green State University*.

Bulut, S. (2019). Why mobbing is important. *Open Access Journal of Behavioural Science & Psychology*, *2*(3), 1-6.

Caponecchia, C., Branch, S., & Murray, J. P. (2020). Development of a taxonomy of workplace bullying intervention types: Informing research directions and supporting organizational decision making. *Group & Organization Management*, *45*(1), 103-133.

Chaturvedi, R., & Dubey, A. K. (2016). Relationship between person-organization fit and job satisfaction: Mediating role of need satisfaction. *International Journal of Education and Management Studies*, *6*(2), 170.

Cleary, M., Hunt, G. E., Walter, G., & Robertson, M. (2009). Dealing with bullying in the workplace: Toward zero tolerance. *Journal of Psychosocial Nursing and Mental Health Services*, *47*(12), 34-41.

Desson, K., & Clouthier, J. (2010). Organizational culture–Why does it matter? Presented to the Symposium on International Safeguards International Atomic Energy Agency Vienna, Austria November 3, 2010.

De Vito, L., Brown, A., Bannister, B., Cianci, M., & Mujtaba, B. G. (2018). Employee motivation based on the hierarchy of needs, expectancy and the two-factor theories applied with higher education employees. *International Journal of Advances in Managements Economics and Entrepreneurship, 3(*1), 20-32.

Ferris, P. A., Deakin, R., & Mathieson, S. (2021). Workplace bullying policies: A review of best practices and research on effectiveness. *Dignity and Inclusion at Work*, 59-84.

Gamian-Wilk, M., Bjorkelo, B., & Madeja-Bien, K. (2017, December). Coping strategies to exposure to workplace bullying. In *Forum Oświatowe*, *29*(2), 79-94.

Gartenstein, D. (May, 2019). *The Role of Culture in Leadership*. The Role of Culture in Leadership (bizfluent.com)

Hadadian, Z., & Sayadpour, Z. (2018). Relationship between toxic leadership and job related affective well-being: The mediating role of job stress. *European Online Journal of Natural and Social Sciences: Proceedings*, *7*(1), 137-145.

Hao, M. J., & Yazdanifard, R. (2015). How effective leadership can facilitate change in organizations through improvement and innovation. *Global Journal of Management and Business Research: A Administration and Management, 15*(9), 1-7.

Harkins, R. (2019). Are You Satisfied?. *Quality Progress*, *52*(8), 10-12.

Hewett, R., Liefooghe, A., Visockaite, G., & Roongrerngsuke, S. (2018). Bullying at work: Cognitive appraisal of negative acts, coping, wellbeing, and performance. *Journal of Occupational Health Psychology*, *23*(1), 71.

Hidzir, N., Jaafar, M., Jalali, A., & Dahalan, N. (2017). An exploratory study on the relationship between the personal factors of the perpetrator and workplace bullying. *Jurnal Pengurusan*, *49*(6), 67-76.

Hossain, M.M. (2020). Organizational Citizenship Behavior and Organizational Commitment among Clinical Nurses in Bangladesh. *Open Journal of Nursing, 10*(7), 6393-704.

Jerome, N. (2013). Application of the Maslow's hierarchy of need theory; impacts and implications on organizational culture, human resource and employee's performance. *International Journal of Business and Management Invention*, *2*(3), 39-45.

Judge, T. A., Weiss, H. M., Kammeyer-Mueller, J. D., & Hulin, C. L. (2017). Job attitudes, job satisfaction, and job affect: A century of continuity and of change. *Journal of Applied Psychology*, *102*(3), 356.

Lester, J. (2013). *Workplace bullying in higher education*. Routledge: New York, NY.

Metzger, A. M., Petit, A., & Sieber, S. (2015). Mentoring as a way to change a culture of academic bullying and mobbing in the humanities. *Higher Education for the Future*, *2*(2), 139-150.

Meyer, E.H. (2021). Higher Education's Bullying Problems Is Bad for Business. Higher Ed. Jobs. Retrieved from https://www.higheredjobs.com/Articles/articleDisplay.cfm?ID=2854

Mills, C. B., Keller, M., Chilcutt, A., & Nelson, M. D. (2019). No laughing matter: Workplace bullying, humor orientation, and leadership styles. *Workplace Health & Safety*, *67*(4), 159-167.

Modi, S. K. (2019). Work Environment an Important Factor of Occupational Stress in the Bicycle Manufacturing Industry at Ludhiana. *International Journal of 360 Management Review*, *7*(1), 929-942.

Mohelska, H., & Sokolova, M. (2018). Management approaches for Industry 4.0–the organizational culture perspective. *Technological and Economic Development of Economy*, *24*(6), 2225-2240.

Munir, M., Attiq, S., & Zafar, M. Z. (2020). Can incidence of workplace bullying really be reduced? Application of the transtheoretical model as tertiary stage anti-bullying intervention. *Pakistan Bus. Rev.*, *21*(4), 762-777.

Namie, G. (2021). 2021 WBI U.S. Workplace Bullying Survey: The Complete Report. Workplace Bullying Institute. Retrieved from https://workplacebullying.org/wp-content/uploads/2021/04/2021-Full-Report.pdf

Namie, G., Christensen, D., & Phillips, D. (2014) 2014 WBI U.S. Workplace Bullying Survey. Workplace Bullying Institute. Retrieved from https://workplacebullying.org/download/2014wbi/?wpdmdl=2030&refresh=62a79fe2910ba1655152610

Nadeak, M., Widodo, A., Asbari, M., Novitasari, D., & Purwanto, A. (2021). Understanding the Links between Coaching, OCB, and Individual Performance among MSME Employees. *International Journal of Social and Management Studies*, *2*(4), 65-80.

Nielsen, M. B., & Einarsen, S. V. (2018). What we know, what we do not know, and what we should and could have known about workplace bullying: An overview of the literature and agenda for future research. *Aggression and Violent Behavior*, *42*, 71-83.

Northouse, P. G. (2016). Leadership: Theory and practice (7th ed.). Thousand Oaks, CA: Sage.

Olive, K., & Cangemi, J. (2015). Workplace Bullies Why they are successful and what can be done about it? *Organization Development Journal*, *33*(2), 19.

Robert, F. (2018). Impact of workplace bullying on job performance and job stress. *Journal of Management Info*, *5*(3), 12-15.

Rose, K., Miller, M. T., & Kacirek, K. (2016). Organizational citizenship behaviour in higher education: Examining the relationship between behaviours and institutional performance. *Journal of Higher Education Management*, *31*(1), 14-27.

Rai, A., & Agarwal, U. A. (2017). Linking workplace bullying and work engagement: the mediating role of psychological contract violation. *South Asian Journal of Human Resources Management*, *4*(1), 42-71.

Salin, D., Cowan, R. L., Adewumi, O., Apospori, E., Bochantin, J., D'Cruz, P., & Zedlacher, E. (2020). Prevention of and interventions in workplace bullying: A global study of human resource professionals' reflections on preferred action. *The International Journal of Human Resource Management*, *31*(20), 2622-2644.

Seriwatana, P. (2022). Foreign Coworker Discrimination to Turnover Intentions Moderated by International Working Experience and Marital Status. *Sau Journal of Social Sciences & Humanities, 6*(1), 32-54.

Smith, F. L., & Coel, C. R. (2018). Workplace bullying policies, higher education and the First Amendment: Building bridges not walls. *First Amendment Studies*, *52*(1-2), 96-111.

Spruce, L. (2019). Back to basics: Preventing workplace bullying. *AORN Journal*, *110*(3), 288-297.

Taye, M., Sang, G., & Muthanna, A. (2019). Organizational culture and its influence on the performance of higher education institutions: The case of a state university in Beijing. *International Journal of Research Studies in Education*, *8*(2), 77-90.

Taylor, E. A., Hardin, R., Welch, N., & Smith, A. B. (2018). Incivility in the workplace: The Experiences of Female Sport Management Faculty in Higher Education. *Journal of Higher Education Management, 32*(2), 180-198.

Tehrani, N. (2012). Introduction to Workplace Bullying. *Workplace Bullying: Symptoms and Solutions*. (pp.1-17). New York, NY: Routledge.

Wagner, J. A., & Hollenbeck, J. R. (2020). Culture, Change, and Organization Development. *Organizational Behavior Securing Competitive Advantage*. (pp.283-305). New York, NY: Routledge.

Wajngurt, C. (2014). American Association of University Professors. *Prevention of Bullying on Campus.* Prevention of Bullying on Campus | AAUP. aaup.org/article/prevention-bullying-campus#. Yth77HbMKUk

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Examining Strategic Alliances: Leveraging Workforce Development Grants to Create University-Business Partnerships

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Workforce development grants are funds offered by federal, state, and local governments to promote economic development through job training. Some workforce development grants are industry-specific, often addressing worker shortages, others target underrepresented employees, and still others are designed to keep employees current with rapidly evolving technology. A development program can include, among others, traditional courses, e-learning, on-the-job training, certifications, and apprenticeships.

In this paper, we provide a case study of one university that has used workforce development grants to create employee training programs for regional businesses and learning opportunities for students. In so doing, we focus on the use of grants awarded to a 4-year school rather than a 2-year school. There has already been a great deal written about the ways that state funding supports workforce skill development via vocational/technical colleges. Our feeling is that faculty and administrators at many 4-year schools may be unaware of workforce development grants. With this in mind, we discuss the nature of workforce development grants, discuss the benefits of the grants to employers and universities. provide examples of projects funded with the grants, and outline steps for managing grants.

Workforce Development Grants

Federal Programs

The U.S. has a long history of workforce development programs. The nation's first major labor development effort was the 1939 Works Progress Administration (WPA). The WPA was a response to a 20% unemployment rate during the Great Depression. Most WPA efforts involved providing jobs to the unemployed. Federal efforts to train, rather than just hire, the unemployed and underemployed followed in 1962, with the Manpower Development and Training Act (MDTA); in 1973 with the Comprehensive Employment and Training Act (CETA); in 1982 with the Job Training Partnership Act (JTPA); in 1998 with the Workforce Investment Act (WIA); and most recently, with the Workforce Innovation and Opportunity Act (WIOA) of 2014. All these programs provided federal funds for training, but the WIOA created a *national* workforce development system that included state and local workforce investment boards. These boards are responsible for implementing regional plans and can be a source of funding for university-based projects. See Library of Congress, Congressional Research Services (2022) for more details.

State Programs

In addition to federal programs, most states have set aside funding for workforce development. A list of the state agencies that administer grants appears in Table 1. See also National Association of State Workforce Agencies (2023). A description of all the programs within each state was not included because there are far too many to list. For example, Minnesota offers seven kinds of workforce development grants, one of which is the Minnesota Job Skills Partnership program (MJSP) and the focus of this paper.

Benefits of Workforce Development Grants

Benefits to Universities

A workforce development grant provides a variety of benefits to a university. Declining enrollments (National Student Clearinghouse Research Center, 2023) have caused universities to look for new sources of funding. Development grants can provide a financial boost. The grants can also supplement tuition revenue because some courses align with Credit for Prior Learning if a trainee decides to enroll at the university. In addition, once a course has been developed for a grant, it can be resold by the university to other businesses and can be offered as an open-enrollment course for the community.

State legislators are encouraging their university administrators to provide students with job-relevant skills (National Conference of State Legislatures, 2022). Workforce training programs create hands-on training opportunities for university students that can improve their chance of being hired (Littleton, Townsin & Beilby, 2023).

Workforce development grants can create research and publication opportunities for faculty (Perkmann & Slatter, 2012). In many cases, it is less cumbersome to apply for development grants than federal grants or grants from foundations.

Workforce development grants involve collaboration between businesses and the academic community. In our case, workforce development grants funded 37 training projects for 36 businesses. Many universities are trying to enhance their strategic partnerships with industry (Ankrah & AL-Tabbaa, 2015; Frolund, Murray & Reidel, 2018). Workforce development grants lay the foundation for long-term relationships with businesses.

Benefits to Business

Businesses benefit from workforce development grants in a number of ways. For example, businesses receive very low-cost training. Although some businesses pay for needs assessment to support a grant application, many businesses simply have to provide in-kind matching. This means that employers pay employees while employees complete the training. Another way training programs benefit employers is by sending the message that the organization is concerned about employees' professional development. This has the effect of increasing employee commitment (Hausknecht & Trevor, 2011). In addition to the cost savings, employers get access to the latest

technology, software, and design services. Finally, employers have the opportunity to preview freshly minted graduates.

Table 1

State Agencies Involved in Workforce Development

Alabama Dept. of Labor	Missouri Dept. of Higher Education & Workforce Development
Alaska Dept. of Labor and Workforce Development	Missouri Dept. of Labor and Industrial Relations
Arizona Dept. of Economic Security	Montana Dept. of Labor and Industry
Arkansas Division of Workforce Services	Nebraska Dept. of Labor
California Employment Development Dept.	Nevada Dept. of Employment, Training & Rehabilitation
California Labor and Workforce Development Agency	New Hampshire Employment Security
Colorado Dept. of Labor & Employment	New Jersey Dept. of Labor and Workforce Development
Connecticut Dept. of Labor	New Mexico Dept. of Workforce Solutions
DC Dept. of Employment Services	New York State Dept. of Labor
Delaware Dept. of Labor	NC Dept. of Commerce - Division of Employment Security
Florida Dept. of Economic Opportunity	NC Dept. of Commerce - Division of Workforce Solutions
Georgia Dept. of Labor	NC Dept. of Commerce - Labor and Economic Analysis
Guam Dept. of Labor	Ohio Dept. of Job & Family Services
Hawaii Dept. of Labor & Industrial Relations	Oklahoma Employment Security Commission
Idaho Dept. of Labor	Oregon Employment Dept.
Illinois Dept. of Commerce and Economic Opportunity	Pennsylvania Dept. of Labor & Industry
Illinois Dept. of Employment Security	Puerto Rico Dept. of Labor and Human Resources
Indiana Dept. of Workforce Development	Rhode Island Dept. of Labor and Training
Iowa Workforce Development	South Carolina Dept. of Employment and Workforce
Job Service North Dakota	South Dakota Dept. of Labor and Regulation
Kansas Dept. of Commerce	Tennessee Dept. of Labor & Workforce Development
Kansas Dept. of Labor	Texas Workforce Commission
Kentucky Education and Labor Cabinet	U.S. Virgin Islands Dept. of Labor
Louisiana Workforce Commission	Utah Dept. of Workforce Services
Maine Dept. of Labor	Vermont Dept. of Labor
Maryland Dept. of Labor	Virginia Employment Commission
MA Executive Office of Labor and Workforce Development	Washington State Employment Security Dept.
Michigan Dept. of Labor and Economic Opportunity	Wisconsin Dept. of Workforce Development
Michigan Dept. of Technology, Management and Budget	WorkForce West Virginia
Minnesota Dept. of Employment and Economic Development	Wyoming Dept. of Workforce Services
Mississippi Dept. of Employment Security	

Minnesota State University Case

In this section we describe the relationship between the State Grants Office and Minnesota State University, Mankato. We also provide examples of specific training projects developed across three university departments. Our goal is to illustrate the breadth of projects that can be funded.

Minnesota Job Skills Partnership Program

The Minnesota Job Skills Partnership (MJSP) program was created in 1983 by the Minnesota State Legislature. The MJSP is housed within the Minnesota Department of Employment and Economic Development (DEED) and is governed by a 12-member board comprised of businesses, labor, government, nonprofit organizations, and educational leaders. The MJSP offers grants of up to $400,000, and there are multiple funding cycles throughout the year. In 2023, the MJSP has set aside approximately $9 million for training. The stated goal of the MJSP is to 'act as a catalyst between Minnesota's post-secondary educational or other nonprofit training institutions and business/industry for the purpose of designing and implementing training programs that meet current and future employer needs and offer trainees long-term professional growth and economic opportunity' (Minnesota Department of Economic Development, 2023). The MJSP is somewhat different than other development grants because it specifically states that the projects need to be done in collaboration with a Minnesota secondary education institution or a Minnesota, accredited training agency.

MSU Workforce Development Office

Our campus Workforce Development Office is comprised of a Director and an Office Manager. The office is housed in the Office of Strategic Partnerships. The Director meets with local businesses to assess interest in grants. As you might imagine, this is a relatively easy *sell* because employers like low-cost training. Once a client has been identified, the Director works with faculty to develop a training plan. The plan is then reviewed by our Research and Sponsored Programs Office. Upon approval, the plan becomes part of a grant application that the Director takes to the MJSP office. The Director then advocates for the application, receives feedback from the state regarding the application, makes modifications, and submits a final version of the grant. If the grant is approved, the Director's office receives the funds and is responsible for distributing funds to the university departments, buying equipment, and paying for travel costs. The Director provides periodic reports to the state about spending and progress. In the next section, we provide examples of how MJSP grants have been used to fund specific projects in three departments: Industrial/Organizational Psychology, Nursing, and Engineering.

On-campus I/O Psychology Consulting Program

The Organizational Effectiveness Research Group (OERG) is a consulting service housed in the Graduate Program in Industrial/Organizational Psychology at MSU. The OERG is comprised of 4 faculty who serve as consultants, and 24 students who serve as project managers. The OERG contracts with businesses to work on a variety of human resources, training, and research projects. Clients include federal and state agencies, regional businesses, and non-profits.

Over the years, the OERG has worked closely with the University Workforce Development Office. In some cases, the Development Office has received a grant and subcontracted with the OERG to develop training programs. In other cases, the OERG was involved in the grant application process by meeting with leaders in businesses to assess the company's training needs and suitability for a grant.

Foundry - Augmented Reality Application. Iron foundries are loud and hot. Protective equipment makes it difficult for trainers to communicate with trainees. With this problem in mind, one grant funded the OERG to create an augmented reality application that allowed trainees to explore the functions of an automated metal grinder. To use the application, a trainee would point an iPad at the grinder control panel. A video image of the panel would appear along with a graphic image overlay for each button. The trainee would click on a graphic to learn the function of the corresponding button on the grinder.

Electric Motor Manufacturer - Cultural Training Program. A large Japanese company acquired a Midwestern manufacturer of electric motors. The new owners worked with the university to obtain a grant to provide various training programs. One of the programs involved the OERG helping to find ways to socialize the U.S. employees into the new Japanese corporate culture. Using focus groups and printed material, the OERG identified 12 core corporate values of the parent company. The OERG then distributed a survey asking employees to indicate the extent to which they embraced these values. Next, the OERG hired a filmmaker who recorded employees talking about the way that employees personify corporate values. The training program included 12 modules corresponding to the core values. Each module contained survey data, films of employees talking about the value, an interactive lesson about the value, and a summary of the corporate history. The modules were placed online. Some department leaders chose to watch the modules in group sessions, others allowed employees to access the modules on their own.

Metal Fabricator - Video Courses. There are YouTube instructional videos for software, auto repair, math, science, foreign languages, home improvement, recreational activities, and even surgery. Young employees are more likely to turn to the Internet than a training manual in a three-ring binder (Pearson, 2018). Borrowing the YouTube model, the OERG started a series of instructional videos featuring employees describing how to do specific parts of their jobs. The OERG named these SmithTube (not the actual company name). Employees could access the videos while at home or at work.

Meat Packer – Simulation. A large meat wholesaler was the focus of a multi-project grant. One of the training projects was designed in response to a concern that there was poor communication across departments. The production process involved livestock purchase, meat cutting, packaging, storage, sales, and trucking. Each stage was performed by a separate department. As in many organizations, employees within departments did not fully understand how actions in their departments affected employees in other departments. To help employees understand the interconnectedness of departments, the OERG worked with the university information technology department to create a computer simulation of the production process. Trainees who *played* the simulation had to select various actions to solve problems in each department. The problems were derived from real problems the department had faced in the past. Once trainees made their

choices, they would receive feedback about the ways their selection would affect profitability, customer satisfaction, and employee satisfaction. The simulation was used in group settings to facilitate discussions, and it was used as part of a new employee orientation program.

Pork Producer – Cross-cultural Microlearning. A Midwestern pork producer had a cultural integration problem. The company hired technicians from Mexico to work for a three-year term. The company found that the Mexican workers had a difficult time integrating into the small Minnesota communities where the farms and labs were located. The OERG partnered with the pork producer to create seven, five-minute training modules for Mexican workers. The modules contained information about U.S. work norms and expectations. The OERG also created seven, five-minute training modules for U.S. employees. These modules included information about Mexican norms and expectations. The training modules were placed online, and employees could access them at any time.

Traditional Courses – In addition to the eLearning projects above, development grants have paid the OERG to create a variety of traditional classroom courses. These classes included a money management course for entry-level employees at a nursing home, a rules compliance course for factory workers, a work-life balance course for hospital employees, a corporate culture course for a printing company, and an end-of-life training program for an assisted living center. As in each of the projects above, graduate students and faculty designed and lead the courses.

These projects were useful learning opportunities for our university students. For instance, students learned about gamification, simulations, augmented reality, automation, information technology, and microlearning. Students met with senior business leaders, led focus groups, managed surveys, and created training content. They spent time on the shop floor and met with employees. They learned how to schedule meetings, write professional emails, and write reports. Among other programs, students used Qualtrics, SPSS, R, PowerPoint, film editing software, sound editing software, Articulate, and time tracking software.

Nursing

The Maverick Family Nursing Simulation Center is a 16,000-square-foot, accredited, state-of-the-art medical simulation facility located on the campus of MSU. It contains three inpatient hospital rooms, a surgical room, a pediatric hospital room, an obstetrical birthing suite, a home health care suite, and a ten-bed multi-bed skills lab. The in-patient hospital rooms in the center replicate a real hospital wing and contain all the necessary equipment one would see in a hospital setting. The rooms are ideal for practicing real hospital scenarios or simulations (ex: team communication during emergency situations, responding to a patient who is coding, treating a patient involved in an accident, conducting an emergency surgery, etc.). The multi-bed skills lab replicates a large hospital ward and contains ten hospital beds. This space is ideal for working on individual nursing skills (ex: IV insertion, catheterization, etc.). The center has human patient simulators, body part task trainers, virtual reality equipment, and simulated medical equipment and supplies. The center focuses on training nurses and other allied health students and professionals in healthcare-related cases and procedures. The center uses simulation to practice high-risk, low-incidence scenarios in a safe and realistic learning environment. To the casual observer, the center is identical to a hospital

floor and allows learners to practice scenarios or skills encountered in the field without compromising patient care.

Hospital – Surgical Simulation and Skills. During the pandemic, new hospital nurses were not getting the hands-on experiences they needed to learn specific skills. In response, a regional hospital approached the simulation center in hopes of developing training programs. The center leaders felt this would be a good use of a workforce development grant. As the first step in applying for a grant, a needs assessment was conducted within various departments in the hospital to determine target scenarios or skills for simulations. Nursing leaders and simulation staff developed learning objectives for each department. Based on the needs assessment, training included topics like family-nurse communication, nurse interventions, maintaining a sterile field, positioning patients, prepping perioperative patients, and responding to perioperative emergencies. Once the grant was approved, training began in the center. Learners involved nurses from the hospital's Medical/ Surgical units, Emergency Department, Intensive Care Units, Progressive Care Units, Ambulatory, Pediatric units, and Obstetrical units. Training days involved a half day in the multi-bed skills lab addressing specific skills. For the remainder of the day, participants trained in the university's high-fidelity simulation center to practice specific hospital scenarios. To determine if learning objectives were met, participants completed a pre- and post-survey on each training day. Educators trained 245 hospital employees in a 7-month period in the Maverick Family Nursing Simulation Center.

Medical Clinic – Nursing Skill Development (catheterization). A local medical clinic was the beneficiary of a grant to support training for a short course on pediatric urinary catheterization procedures. The training was conducted through the Maverick Family Nursing Simulation Center in the multi-bed skills lab. Training involved the use of medical task trainers which are life-like models of the female pelvis. The trainer is designed to teach urinary catheterization procedures. Simulation center staff provided participants with basic level knowledge including indications for the procedure, equipment needed, and the exact steps needed to perform the procedure based on the clinic's specific policies and procedures. Simulation Center staff were also tasked with the setup and teardown of all needed equipment and supplies, collection of clinic-specific materials, development of learning objectives, and scenarios to be addressed. On the day of the training, clinic staff worked through simulated scenarios with clinic staff serving as content experts. Simulation center staff collected rosters and data regarding the learning objectives and submitted progress reports to the workforce director.

Long-Term Care Facility – Advanced Nursing Skills Training. A hospital was having difficulty with discharge barriers to long-term care facilities. The Simulation Center was asked to be part of a collaborative project between a local long-term care facility and a regional hospital. The goal of the project was to provide advanced nursing skills training to long-term care facility nurses to positively impact patient care and decrease hospital discharge barriers. Organizations met to determine which barriers could be removed through effective training. Training topics on ostomy care, wound care management, NG tube care, PICC (Peripherally Inserted Central Catheter) lines/ Central Lines/ Ports/ Lab Draws, alcohol abuse, non-compliant residents, PleurX Drains, and suprapubic catheters were identified as barriers to discharge. Again, because this is a common problem across the state, the university applied for a development grant for the project to address these training areas. Once funded, the Simulation Center designed a training plan and provided monthly training. The simulation center provided necessary training support through equipment, setup and teardown,

data collection, and submission of grant paperwork. Training began in June 2023 and is slated to end in January 2024.

In addition, to the benefit to the workforce, these training partnerships allowed the university to expand its use of the new simulation center and to develop new, and update old, healthcare scenarios encountered in the community. In addition, the project enabled the simulation center staff to develop the information technology infrastructure needed to support the continuous recording of a simulation across multiple rooms and to be able to conduct multiple simulations at one time. The project also exposed our student nurses to the working nurses and allowed the students to observe and ask questions of the experienced nurses. In addition, research and data collection and analysis assisted hospital and university staff in identifying the success of the program and areas for further development. Work on the surgical grant project was disseminated at the International Nursing Association of Clinical and Simulation Learning (INACSL) in June 2023 to highlight how strategic partners can collaborate to address skills and simulation. The long-term care collaboration was disseminated at the Mayo Clinic Health System Transforming Community & Rural Healthcare: Digital Health and Workforce Innovation Symposium in September 2023 in hopes of encouraging others to replicate this training partnership in their own communities.

Engineering

The Department of Automotive and Manufacturing Engineering Technology at MSU, Mankato offers programs at the undergraduate and graduate level in the field of automotive and manufacturing/production areas. The department focuses on research in the areas of lean manufacturing, project management, automation, robotics, and 3D printing. Here are three training projects funded by development grants.

Metal Fabricator – Lean Manufacturing. The metal fabricator deals in high mix-low volume production of sub-assemblies which are sent to large manufacturers for final assembly. Due to the nature of the business, there is a great deal of inventory, and the process flow was not optimized. The employees of the company (everyone from the shop floor, engineering, production planning, shipping, etc.) were trained on the principles of lean manufacturing. Case studies from actual production were used to teach the concepts of line balancing, one-piece flow, and Kanban. The employees were then empowered to suggest and implement changes. Another round of training was conducted after six months, and the effectiveness of the changes were evaluated.

Pork Producer – Project Management. A midwestern pork producer was struggling with creating an enterprise project management office (EPMO) that could help individual farms and divisions create project management structures for strategic projects. Employees and managers from farms, logistics, supply chain, and construction divisions were trained in the basics of project scope statements and work breakdown structures. Employees also received instruction in risk management analysis. A case study-based approach was utilized, and the trainees were helped by creating a template they could use in their day-to-day operations of projects.

Equipment Manufacturer – Robotic Welding. A national equipment manufacturer with a presence in the mid-west was struggling to recruit and retain welders. The newer generation of welders wanted something more than the mundane, day-to-day activity of welding parts. Sixty welders were

trained in the latest robotic welding technologies. Grant funds were also used to buy robotic welding equipment. The welders were asked to watch a 4-hour instructional video covering the basics of robotics and then were introduced to hands-on learning with the welding robot. Each welder learned how to operate the robot, program it, and use it for welding simple parts. Welders were then asked to choose a part they are currently welding that would be suitable for automation and bring it to the training. This part was then analyzed by a small group and the welder programmed it on the robot. Welders were then asked to compare and contrast the manual vs. robotic welding processes.

Finding and Managing Grants

The following points are offered as considerations for obtaining and managing grants.

- Find funding sources:
    - Most states will have a variety of programs for workforce development. They may also provide opportunities to bid on contract training. See Table 1.
    - See CareerOneStop - This reference will help you find workforce development boards in your area. These are the boards for federal grants.

- Include funding in the grant for administrative time. Grants require considerable recordkeeping and correspondence. Regular check-in sessions, working with media, etc.

- Find groups on campus that have a strong applied focus with clear paths to jobs. Use faculty and graduate students for course subject matter experts and instructors.

- Take stock of your training resources on campus. This could include instructional designers, eLearning software (Articulate, D2L, Blackboard, etc.), film labs, simulators, etc.

- Determine how faculty and students will be paid. The hourly, daily, and yearly compensation may be limited by the university policies and/or unions. There may be university limits on the number of hours per week a faculty member could dedicate to a consulting project. This needs to be addressed before you can recruit faculty to the projects.

- Find businesses that need a variety of training projects. Funding agencies would rather fund multiple projects for a business than one large project. Some of our projects will total $400,000 for a given employer. Of us, this would cover between 5 and 12 projects.

- Find businesses that are large enough that they have plenty of employees who need training but are not so large that they would seek a major consulting firm for their training needs. Although most of our projects are too small for a national consulting firm to bother with, this does not mean that the funding is small by university standards. Many of the individual projects are in the $30,000 to $60,000 range.

- Make sure there are multiple project champions at the host organization before applying for a grant. This helps with overall buy-in. It is best to have support at the very top of the organization as grant programs cannot survive without support at the Director, VP, or Chief level. Further, it is important to get the support of the supervisors of the employees who will be trained.

- The best initial contact in a business will probably have a title like: Personnel Manager, HR Director, Chief Human Resources Officer, Training Manager, or Head of Learning and Development.

- Union leaders may not be sure what to make of training grants. However, union leaders need to buy-in to the projects. We have found it best to point out that the grants are designed to help employees advance in the organization. Workforce development grants are intended to expand the workforce, not shrink it. We also note that the training comes at virtually no cost to the employees and, in fact, employees are paid while they are in training.

- Keep university overhead to a minimum. We must give 12% of all grants to the university. If your overhead expense is high, you will want to negotiate a lower rate with your university. The grant may limit the amount of overhead (indirect) that can be paid to the university.

- Identify common training needs. We reviewed the most popular courses from LinkedIn Learning, Coursera, EdX, and Udemy. We also searched, among others, 'skills for managers' and 'workplace trends' in various search engines. See Table 2 for a list of the most popular business-related training topics.

- Training proposals are more likely to be funded if the application is based on a thorough training needs assessment. There are well-established techniques for identifying training needs (See for example, Sleezer, Russ-Eft, & Gupta, 2014). The needs assessment can take the form of interviews, focus groups, and/or surveys. The assessment report makes it evident to the State that the business that will benefit from the grant has *skin in the game* and has taken the time to specify the nature and breadth of its training needs.

- Include an outcome assessment component in your grant. Make sure you can measure the success of the program. This might include the number of employees trained, satisfaction measures, promotions resulting from training, and cost savings. Legislators and business leaders like return-on-investment metrics.

- Get to know the people who award the grants. Give them early versions of grant proposals and ask for feedback.

- Serve underrepresented groups. Many state legislatures would like to increase the labor market participation and mobility of minority citizens.

Table 2
Popular Courses for Workforce Development

Analytics
Basic Math
Business Analytics
R or SPSS Statistical Software
Statistics Basics

Communication
Basics Business Terms
Business Writing
English as a Second Language
Listening Skills
Presentation Skills
Spanish as a Second Language
Storytelling
Team Communication

Customer Service
Customer Service
Dealing with Difficult Clients

DE&I
Cultural Intelligence
Diversity, Inclusion, and Equity
Intercultural Communication
Unconscious Bias

HR
Employee Performance Evaluation
Hiring
HR Laws
Onboarding/orientation

Information Technology
Chat GPT/ AI
Cloud Computing
Cyber Security
Database Management
DevOps
Excel Techniques
IX/UX
Machine Learning
PowerBI
SQL
Python

Project Management
Agile Basics
Design Thinking
Scrum

Psychology
Confidence/Self-Esteem
Conflict Resolution
Creativity
Emotional Intelligence
Growth Mindset
Mindfulness
Motivation/Engagement
Resilience
Stress Management
Work-Life Balance

Sales
Closing the Sale
Negotiation Skills
Persuasion
Sales Techniques

Supervising/Managing
Change Management
Collaboration
Dealing with Difficult Employees
Decision-making
First-time Supervisor Course
Goal Setting

Leadership
Providing Feedback and Coaching
Strategic Thinking
Time Management

Other
Ethics
First Aid and CPR
Legal Compliance
Personal Branding
Remote Work Techniques
Safety

- Make university and partner responsibilities clear. Specify the university's deliverables. Make sure the businesses understand what they will have to contribute (inviting employees to trainings, keeping a record of which employees have been trained, providing access to the business' learning management software, providing space for training, etc.). Make certain that the partner understands the time commitment associated with supplying employees to serve as subject matter experts during the course development phase. One of the keys to the success of a workforce development project lies in the strength of collaboration between public and private organizations (Austin & Kasturi, 2019).

- See Rybnicek and Königsgruber (2019); Vick and Robertson (2017); Littleton, Townsin, and Beliby (2023); and Ankrah and Tabba (2015) for literature reviews on the factors affecting the success of university-business collaboration.

Significant challenges include the following:

- Companies usually want to move more quickly than universities do. Employers may become frustrated with the time it takes to move plans through departments, institutional review boards, Deans' offices, the Business Office, etc.

- Although universities like high-tech training solutions (i.e., augmented reality, simulations), once the project is delivered, there may not be anyone at the business who knows how to update the training materials. Make certain training solutions can be updated by the client.

- Some projects span several years. Sponsors get promoted and/or transferred. This means a new sponsor will have to support the project and will have to get up to speed.

- It is important to keep university and business roles clear. In some cases, we have worked with employers who seemed to feel that our faculty were employees rather than partners.

- Making training optional for employees can be a problem. One of the organizations we worked with did not want to require training as it sounded negative. So, we had low attendance at workshops which had a negative impact on the in-kind match. We were thus unable to successfully implement some of the objectives identified in the grant needs statement.

- Many training programs can now be found online and may not need a university for course development or delivery. In the near future, university faculty might be in the role of curating courses rather than delivering them. Faculty might be used to identify and test the veracity of LinkedIn Learning, YouTube films, mini-courses, websites, online courses, etc.

Summary

Although job-related training has historically been the domain of vocational and technical schools, many colleges and universities can benefit by partnering with businesses and applying for workforce development grants. This is particularly true when training involves experimental

techniques, laboratory-based innovation, information technology, organization development, medicine, or law. Workforce development grants support economic development, provide educational opportunities for students, and increase funding for universities.

References

Ankrah, S., & AL-Tabbaa, O. (2015). Universities-industry collaboration: A systematic review. *Scandinavian Journal of Management, 31*, 387–408. https://doi.org/10.1016/j.scaman.2015.02.003

Austin, J. E., & Kasturi, R. (2019). Reflections on 25 years of building social enterprise education. *Social Enterprise Journal, 15*(1), 2–21. https://doi.org/10.1108/SEJ-09-2018-0057

CareerOneStop, U.S. Department of Labor. (2023). https://www.careeronestop.org/LocalHelp/WorkforceDevelopment/find-workforce-development-boards.aspx

Frolund, L., Murray, F., & Riedel, M. (2018). Developing successful strategic partnerships with universities. *MIT Sloan Management Review, 59*(2), 71–79.

Hausknecht J. P., & Trevor C. O. (2011). Collective turnover at the group, unit, and organizational levels: Evidence, issues, and implications. *Journal of Management, 37*(1), 352–388. https://doi-org.ezproxy.mnsu.edu/10.1177/0149206310383910

Library of Congress, Congressional Research Services. (2022). https://crsreports.congress.gov/product/pdf/R/R44252

Littleton, C., Townsin, L., & Beilby, J. (2023). The motivations of stakeholders when developing university industry collaborations in an Australian university: three case studies, *Journal of Higher Education Policy and Management*, *45(*5), 481–494. https://doi.org/10.1080/1360080X.2023.2191608

Minnesota Department of Economic Development. (2023). Minnesota Job Skills Partnership. https://mn.gov/deed/assets/rfp-mjsp_tcm1045-359039.pdf

National Association of State Workforce Agencies. (2023). https://www.naswa.org/membership/workforce-agencies

National Conference of State Legislatures. (2022). Expand the labor force with workforce preparation. https://www.ncsl.org/labor-and-employment/expand-the-labor-force-with-workforce-preparation 9/15/2023

National Student Clearinghouse Research Center. (2023). https://nscresearchcenter.org/ 9.15.23

Pearson (2018). What do Generation Z and millennials expect from technology in education? https://www.pearson.com/en-us/higher-education/insights-and-events/teaching-and-learning-blog/2018/05/generation-z-millennials-expect-technology-education.html

Perkmann, M., & Salter, A. (2012). How to create productive partnerships with universities. MIT *Sloan Management Review, 53*(4), 79–88. https://www.proquest.com/scholarly-journals/how-create-productive-partnerships-with/docview/1023761951/se-2

Rybnicek, R., & Königsgruber, R. (2019). What makes industry–university collaboration succeed? A systematic review of the literature. *Journal of Business Economics, 89*, 221–250. https://doi.org/10.1007/s11573-018-0916-6

Sleezer, C., Russ-Eft, D. F., & Gupta, K. (2014). A practical guide to needs assessment (Third Edition). San Francisco, CA: John Wiley & Sons.

Vick, T., & Robertson, M. (2017). A systematic literature review of UK university–industry collaboration for knowledge transfer: A future research agenda. *Science & Public Policy, 45*(4), 579–590. https://doi.org/10.1093/scipol/scx086

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Improve Organizational Learning by Including Librarians and Other Existing Knowledge Management Experts

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For an organization to be nimble and efficient it is important to not have to reinvent the wheel every time a new problem arises. Organizations that have a repertoire of successful strategies, as well as a record of those approaches that were less successful or that did not work, are able to respond to issues and pressures in the organizational environment more rapidly and with better success rates (Hedberg, 1981; Senge, 1990). This adaptive practice is called *organizational learning*, which describes a systematic process that can be used to improve an organization's ability to make informed and evidence-based decisions, thus increasing the number of successful decisions made over time (Hedberg, 1981). The formal name for file and information sharing across an institution is *knowledge management* (KM), which also includes a system-wide approach for "identifying, capturing, evaluating, retrieving, and sharing" information (Duhon 1998; Hedberg, 1981; Senge, 1990).

Organizational learning and related KM practices are important in higher education just as they are in other types of organizations (Soltani et al., 2020). Human resources activities including recruiting, hiring, onboarding, coaching, and separating faculty and staff members, are easier and have decreased liability when consistent practices are followed across the institution (Brewer & Brewer, 2010). Current status and historical context of strategic partnerships, including articulation and pipeline programs; foundations and donors; as well as internship and employment providers, is important to share across colleges and departments, as well as with newly onboarded leaders. In addition to challenges facing the larger business world, higher education leaders must rapidly learn and embrace concepts and philosophies related to education, business, and organizational health in their own daily work, and also need to promote healthy organizational operations and culture across their programs (Fuentes, 2020; Lancaster et al., 2014).

Organizational learning improves the speed with which important decisions are able to be made. These successful decisions allow the organization to improve its ability to respond to both challenges and opportunities in the organizational environment and to develop or maintain a competitive advantage (Jones, 2013). Increased organizational effectiveness is the primary desired outcome of organizational learning, which seeks to improve the collective knowledge, experience,

and institutional memory of the organization and to make that information available to all members through KM practices (Jones, 2013; Newstrom & Davis, 2015).

Knowledge Management in the Academy

While many academic organizations have record-keeping and file sharing systems, at the institution or functional level most institutions have some gaps that decrease the efficiency of finding information. These include multiple places or platforms for storing information, inconsistent file naming, and varying levels of access permissions that lock users out of valuable content or that make sensitive information available to wider audiences than intended. Additionally, as key employees leave the organization, informal information storage structures can be lost and institutional memory can dissolve (Fuentes, 2020; Corbin, 2020).

Schwartz et al. (2020) reported that 75 percent of organizations surveyed recognize the role of knowledge management for their success but only 9 percent are prepared to deal with knowledge creation, storage, and updates, all of which are essential for changing work environments. Although higher education institutions value learning and discovery, most could benefit from a more intentional approach to storing and sharing information with internal strategic partners (Al-Kurdi et al., 2018). For organizations to be effective at KM, it is important to make it an organizational priority, and to identify and empower responsible parties (Farrell, 2018; Bishop, et al., 2008). Associated strategic initiatives must also be developed, which could include developing a KM taskforce, committee, or office. Higher learning institutions already employ highly trained KM experts, including academic librarians, IT and HR professionals, and those who keep records in the Registrar's Office and other core units. These individuals can use KM expertise to aid in information storage and usage for various academic and non-academic departments, and ultimately for the institution as a whole. These units are often siloed, however, and for information to be shared across the institution, it is important to have these key stakeholders come together intentionally. While IT professionals are often featured in the development of KM strategies at the institutional level, librarians are sometimes overlooked, which is ironic as the core purpose of the discipline of library and information science is to oversee information storage and retrieval, as well as other core functions of KM, including end-user training and support. Since nearly every higher educational institution employs librarians, academic leaders can readily benefit from including them as key team members in KM strategy development and implementation.

A foundational element of improving the collective knowledge, skills, and abilities of the organization is to improve the proficiency of individual team members and to have those members then share their expertise back with their teams (Huber, 1991). Organizational learning and KM also allows individuals and teams from different sectors of an organization to benefit from the knowledge and experiences developed by other individuals and other organizational subunits through storing and sharing information (Hoffer-Gittell, 2016; Wasko & Faraj, 2000). To be able to efficiently and effectively share solutions and strategies across colleges, departments, and other units of the institution over various lengths of time, formal processes for documenting and accessing that information must be developed (Draaijer, 2008).

Core elements of KM systems include shared data storage systems and established policies and procedures that include elements such as where information is stored, who has access, and how

files are named and categorized (Duhon, 1998). For a list of relevant terms and definitions, see Table 1. KM is particularly important for elements of succession planning, including onboarding and employee development, minimizing time and expense needed for new employees to begin to

Table 1

Common Knowledge Management Elements and Terms

Access levels / permissions	The set of authorizations or restrictions associated with a user in a CMS that dictate what actions and documents that user is allowed to perform within the CMS.
Authority control	The process of organizing information by choosing a single term to represent a subject. This ensures that a topic in a database can be readily retrieved.
Content Management System (CMS)	Software that facilitates the creation, revision, and discovery of digital information.
Data compliance	Records management specifically pertaining to data. Administration of institutional data such as legal requirements and its organization and destruction.
Database design	The planning and implementation of software for storage and retrieval of information.
Digital preservation	Theory and practice regarding long-term storage of digital information.
File naming conventions	Standards describing the content of a document that helps distinguish it from similar documents.
Folder structure	A system used to organize documents in a hierarchy that facilitates storage and retrieval.
Information retrieval	The techniques and theories that ensure stored documents can be discovered in response to a given information need.
Knowledge management	Knowledge management is a discipline that promotes identifying, capturing, evaluating, retrieving, and sharing an enterprise's information. Examples include databases, documents, policies, procedures. (Duhon 1998, as cited in Bartlett 2021)
Metadata	Data about data. Descriptive information that aids in their retrieval. Information such as file size, date of creation, file type, subject, etc.
Organization of information	Techniques for organizing information to facilitate storage and retrieval.
Records management	Administration of institutional records, including legal requirements, practical challenges, storage, organization, and destruction.
Retention schedule	A legally mandated plan indicating the length of time an organization must preserve different types of records.

contribute at their full potential. Successfully managing employee transitions and demonstrating attention to employee growth are important for promoting employee satisfaction and retention (Gallup, n.d.). KM is also foundational for change management by recording both successes and failures, so that institutions can learn from the past (Kotter, 2012; Soni, 2019). More directly in higher education, KM is useful for required institutional reporting, and ensuring information is accurate and up to date, for maintaining accreditation, websites (truth in advertising), course catalogs and handbooks, and even information about organization structures (such as department membership and contact information) (Al-Kurdi et al., 2018).

The Need for a University-level Knowledge Management Strategy

A disorganized stockpile of policy and procedure documents does not constitute successful KM. For repositories of information–known in library and information science as *collections*–to be meaningful and effective at supporting a given task, they must undergo constant development and maintenance. This includes updating useful materials, removing unnecessary documentation, and adding new content. Further, as a collection of information and resources grows, how it is organized becomes increasingly important.

In a small collection of a few hundred documents, such as one's personal financial records, a simple organizational scheme can be adequate. For example, folders for taxes, liabilities, and assets, paired with a naming convention of "descriptive title-date" and a practice of updating documents annually could meet recordkeeping needs for one individual. However, as the size of a collection grows and the number of people accessing information expands, the organizational scheme and storage platform need to grow in complexity. In a collection of thousands or tens of thousands of documents, much greater care must be exercised to ensure the collection remains usable. Indeed, at a certain point in a collection's growth, its organization becomes so complex that experts are required to oversee and maintain the knowledge architecture, ensuring the collection remains useful.

Academic libraries host vast collections typically encompassing hundreds of thousands and often millions of items and employ specialists called "catalogers" to oversee the collection's organization. Table 2 provides definitions for several core library roles relative to KM**.** Catalogers ensure users are able to discover and retrieve relevant items. In a small collection of a few hundred or thousand items, this level of oversight may not be needed. In the personal financial record example, if the file for last year's tax returns accidentally gets misnamed and misfiled so it cannot be retrieved through an automated search, a quick manual review will reveal the error at the cost of approximately fifteen minutes. If the same error occurs in a collection numbering in the millions, that item can be lost for years or even indefinitely. Even if a user knows a particular item is lost somewhere in a large collection, a manual review can be prohibitive. For example, take a relatively small institutional collection of 500,000 items. If one wishes to review a list of those titles at an average speed of ten titles per minute, then it will take over 800 hours to review the list, not including breaks (Bookstein, 1973). An item lost in a collection of substantial size can be effectively lost forever, a misplaced needle in an ocean of needles.

At the university level, KM will necessarily involve many thousands of documents, including a variety of file types and storage platforms, making successful KM a complex undertaking. These can

include email, images, audio, multimedia files, blueprints, student records, employee data, website content, survey data, datasets, and content created in various productivity software packages (Microsoft Word, Excel, PowerPoint, etc). Most academic institutions have multiple units, and on the academic side alone have multiple departments and/or colleges, each with additional sub-units. In addition, academic institutions have knowledge and associated records relative to students, facilities, finance, external relations, employment, marketing, and other organizational operations (Brewer & Brewer, 2020). Many of these functions have information storage specialists dedicated to specific units, including the registrar's office, human resources, information technology, and libraries. The background and training of formal and informal KM practices varies across these units, and typically KM strategies are not shared or employed strategically at the organizational level (Al-Kurdi et al., 2018). For academic institutions to take KM to the highest level, information must be shared beyond department and sub-unit silos, so that any one department, college, or unit can learn from all parts of the organization (Senge, 1990; Hoffer-Gittell, 2016; Wasko & Faraj, 2000)

Why Librarians are Important as Knowledge Management Experts

While information technology and data science include elements of KM, these disciplines typically have a focus on technological and statistical aspects of records and business operations (Kebede, 2010). The discipline of library and information science, however, concerns itself with collecting, describing, storing, evaluating, updating, and facilitating access to knowledge and expertise in collections with items numbering in the millions. (Reitz, 2004). Fundamentally, the primary difference between a KM expert and a librarian is the scope of the knowledge collected. The underlying principles, skills, and overall expertise are the same. Table 1 provides definitions of core elements of KM that are also used by librarians as they curate collections. Higher learning institutions already employ KM experts that can use their expertise to aid in information storage and usage for various academic and non-academic departments, and ultimately for the institution as a whole. Most academic organizations, however, do not fully utilize this expertise.

Academic librarians are well-versed in both the underlying principles of KM as well as the practicalities of maintaining a database of useful documents, applying them to useful purposes, and ensuring those databases remain current and relevant to organizational needs. Indeed, the American Library Association lists organizational KM as a nontraditional career path for librarians, and the authors have observed academic librarians leave the field for KM roles in private industry (American Library Association, 2009). This is in large part because library and information science degree programs often prepare their graduates for KM work, as we can see in this review of course offerings in five prominent library science programs.

While curricula vary across library and information science graduate programs, Table 3 shows that there is significant overlap across the range of courses relevant to KM. However, even without deliberately pursuing coursework with a future KM career in mind, the baseline theoretical and practical knowledge gained in a library and information science program positions librarians to readily adopt KM responsibilities. Library and information science, at its broadest level, exists to facilitate the storage, retrieval, and use of information. Consequently, while not all librarians will be thoroughly versed in all aspects of knowledge management, most librarians are likely to be familiar with the principles, and depending on their area of focus, some will possibly be a great deal more than familiar.

Table 2

Common Librarian positions related to Knowledge Management

Position	Abbreviated Job Description & Primary Duties	Relevance to Knowledge Management
Archivist	Oversee the physical and digital long-term records for the university, including items relevant to institutional and regional history, preserving records, antiques, and delicate materials.	• Records retention policies. • Data preservation practices relating to data types, storage, and retrieval. • Exercise judgment on what warrants inclusion in a KM collection.
Cataloger	Oversee the structure for the database containing records for every item contained within a library or collection. Adhere to a strict methodology governing the accurate naming and description of items to create a usable collection.	• Name/describe KM resources for storage and retrieval. KM records need to be consistently and predictably named and tagged with metadata to facilitate discovery at point of need. • Effective description for storage and retrieval is what makes a collection of KM records useful to the organization.
Electronic Resources Librarian	Manage electronic subscriptions, customizing interfaces to meet stakeholder needs.	• Customize the interface to make it more user-friendly to store and access KM materials for specific stakeholders and user-types.
Reference and Instruction Librarian	Teach library users how to ask effective inquiries, construct search strategies, and other concepts related to information access and literacy. Train end-users on database interfaces and other aspects of library resource usage.	• Train users how to use the KM operating system. • Familiarity with university structure and operations allows these librarians to comprehend KM system users' needs and offer fast and accurate resolutions to their problems.
Systems Librarian	Manage networking systems and work with other units to ensure systems are working in concert. Facilitate seamless connections of information between software and hardware systems, content management systems, and other software that manages functions that communicate with internal and external stakeholders (other libraries, internal systems, authentication portals).	• Maintain technical infrastructure of the KM system, minimizing service interruptions and troubleshooting problems. • Coordinate with the front-end developer and other stakeholders to resolve problems that extend beyond any single stakeholder's portfolio.

Table 3

Knowledge Management Expertise Areas Taught in Library Science Educational Curricula

	University of North Carolina, Chapel Hill	**University of Illinois, Urbana-Champaign**	**University of Washington**	**University of Maryland – College Park**	**Rutgers University**
Database design	INLS 523 Introduction to Database Concepts & Applications	IS 455 Database Design & Prototyping	LIS 543 Relational Database Management Systems	LBSC 733 Database Design	557 Database Design & Management
Information retrieval	INLS 151 Retrieving & Analyzing Information	IS 456 Information Storage & Retrieval	LIS 544 Information Retrieval Systems	INST 734 Information Retrieval Systems	551 Information Retrieval
Digital preservation	INLS 750 Introduction to Digital Curation	IS 543 Digital Preservation	LIS 506 Introduction to Digital Preservation	INST 604 Introduction to Archives & Digital Curation	N/A
Records management	INLS 724 Introduction to Electronic Records Management	IS 562 Administration & Use of Archival Materials	LIS 505 Archival & Manuscript Services	INST 646 Principles of Records & Information Management	534 Records Management
Metadata	INLS 720 Metadata Architectures & Applications	IS 575 Metadata in Theory and Practice	LIS 539 Metadata Design	LBSC 770 Metadata & Tools for Information Professionals	N/A
Organization of information	INLS 520 Organization of Information	IS 505 Information Organization & Access	LIS 530 Organization of Information & Resources	N/A	520 Organizing Information
Knowledge management	INLS 747 Special Libraries & Knowledge Management	IS 595 Competitive Intelligence & Knowledge Management	LIS 584 Knowledge Management	INST 715 Knowledge Management	574 Knowledge Management in Organizations

Similar to other disciplines within higher education, the field of library and information science has multiple specializations that bring different skill sets and strengths to core elements of KM practices. For example, consider three disparate librarian roles: cataloging, systems, and instruction. A cataloger is trained in how to describe and categorize information to facilitate storage and retrieval. They are experts in metadata and database maintenance who ensure that collections, particularly huge collections that span dozens of formats and millions of records, remain organized and useful. A systems librarian is essentially a back-end software developer, able to interpret computer code and troubleshoot networking technology. They ensure that disparate electronic systems are able to exchange information and operate efficiently and effectively. An instruction librarian uses an understanding of adult learning and the academic research process to design, implement, and assess face-to-face, online, and hybrid learning experiences. While the person in each of these roles should be able to describe what the other two people do, it is unlikely that they have the expertise to fully complete the roles of their colleagues. The larger the library, the more specialist positions are likely to be present, and new specializations emerge in response to new technologies (AI, virtual reality, 3D printing, etc.), social movements (Open Educational Resources, DEI), and institutional need (institutional repositories, assessment, outreach).

Knowledge Management Essentials for the Higher Education Organization

At the institutional level in higher education, KM involves a holistic approach and cannot be delegated to a single unit such as IT or the library. KM must become a core part of strategic operations (Senge,1990). While library, IT, and compliance personnel should be included in KM planning, so are accreditation and assessment specialists, as well as key stakeholders from each of the university's organizational subunits. Additionally, KM efforts need the support of the senior administration team, including the Provost, CIO, and others in the President's Cabinet. Organizational leaders can reflect on committee structures and structural differentiation, to identify relevant stakeholders to develop and implement KM plans. With the variability of skill sets across the organization in mind, there are three areas in which those with KM expertise could be productively tasked to contribute to institution-wide KM efforts, related to KM organizational schema, long-term storage, and end-user support.

Creating and maintaining an organizational scheme. University archivists and library catalogers are versed in employing databases to store and retrieve information, usefully and accurately describing documents, and tagging items with appropriate metadata to facilitate future retrieval. Together a cataloger and IT team members can ensure that whatever system the university uses to store and retrieve KM documentation will be effective (in both user efficiency and storage capacity), particularly as the number of records grows over time. The registrar's office and IT often have positions that are tasked with these types of functions, and administrative assistants at the college and department level perform similar tasks for their subunits. Recognizing that many organizational units are completing discrete KM tasks to support local efforts, university-wide initiatives can be used to map storage platforms, develop naming conventions, and devise file structure and storage architecture (Bishop et al., 2008).

Long-term storage. Particularly relevant to KM policies and procedures, archivists are specially trained in storing and retrieving records. Archivists and special collections librarians are accustomed to describing, organizing, cataloging, and storing records across a variety of formats (including those

that are obsolete or no longer supported) and developing materials to assist in the retrieval and use of those records. Outdated KM records that are worth preserving for historical value could be added to an archive or university special collection. IT departments are also important partners in this area, as they have expertise in digital and networked data storage and will likely manage the server infrastructure that handles the storage and backup of KM data. Compliance, legal counsel, and policy record keepers (including those that develop and maintain course catalogs and student handbooks), also have expertise that can inform university policy and procedures, including document and file retention. To promote consistency, efficiency, and shared accessibility to information, it is important for university leaders to include stakeholders from all of these units in KM development and operations teams (Bishop et al., 2008).

Training and Assisting the End User. An important part of KM is teaching the end user how to use the system, and ultimately to find the information that they need to solve a problem or address a given situation. End user training is often accomplished during new employee or new student orientation, as well as during annual faculty/staff development initiatives (Brewer & Brewer, 2010). Human resources personnel, IT experts, and academic librarians, particularly those with reference and instruction backgrounds, have expertise in teaching adult learners to use university systems. Faculty have expertise in training students and other types of learners on how to complete complicated tasks, particularly those associated with their specific discipline. Similarly, library faculty and staff librarians routinely create customized web pages–often called "LibGuides" but variously branded with titles such as "Research Guides" or "Course Guides"–that describe the process for completing a specific task in the research process, such as how to achieve better results when searching databases. Similarly, reference librarians answer user questions and provide learner, faculty, and classroom support. Furthermore, reference librarians typically possess extensive knowledge of university operations, as they routinely need to refer student and faculty questions to appropriate campus units during the course of their regular duties. This broad and deep understanding of university operations can be readily applied to assisting in KM efforts, particularly directing users of a KM system toward needed documentation. Related to compliance and accreditation, it can be valuable to have a team that is versed in the KM approaches used at an institution, and who proactively identifies areas for improvement.

Conclusion

Knowledge management is important for organizational learning and maintaining a competitive advantage. For KM to be effective, it needs to be placed as an organizational priority with trained experts overseeing the efforts. Higher learning institutions already employ highly trained KM experts in the form of academic librarians, as well as IT, HR, registrar, accreditation, and institutional effectiveness personnel. Their expertise can be leveraged to aid in information storage and retrieval in support of not only historical information, but that of current academic and non-academic units, students, staff, and ultimately, for the institution as a whole. However, deploying KM expertise in service of university-wide knowledge management efforts will require investment and significant follow-through in order to succeed.

While academic librarians and those in other units such as IT, and the Registrar's Office, possess skills needed for successful KM implementation, their pre-existing duties and responsibilities preclude significant participation in a project as intensive as establishing and maintaining campus-

wide KM. Implementing a campus-wide KM project likely will involve tasking existing faculty and staff with additional duties, as well as hiring additional team members with dedicated time and KM expertise. Developing dedicated positions, whose primary responsibilities are centered around KM, can highlight the value that administrators put on KM initiatives and will strongly increase the project's likelihood of success. Key KM roles will need to be visibly endorsed by upper administration, including the assignment of KM support tasks to existing staff across and between campus units. Many of the employees with the necessary skills are likely already present at any given institution of higher education; only leadership and the creation of an overarching strategy are needed to take advantage of the benefits intentional organizational learning and knowledge management offer.

References

Al-Kurdi, O., El-Haddadeh, R., & Eldabi, T. (2018). Knowledge sharing in higher education institutions: A systematic review. *Journal of Enterprise Information Management*, *31*(2), 226-246.

American Library Association. (2009, August 19). *Non-traditional jobs for librarians.* http://www.ala.org/educationcareers/careers/paths/jobtypes/privatesector

Bishop, J., Bouchlaghem, D., Glass, J., & Matsumoto, I. (2008). Ensuring the effectiveness of a knowledge management initiative. *Journal of Knowledge Management*, *12*(4), 16-29.

Bookstein, A. (1973). Models for Shelf Reading. *The Library Quarterly: Information, Community, Policy, 43*(2), 126-137. http://www.jstor.org/stable/4306262

Brewer, P. D., & Brewer, K. L. (2010). Knowledge management, human resource management, and higher education: A theoretical model. *Journal of Education for Business*, *8*(6), 330-335.

Corbin, J. L. (2020). Turnover is coming: Strategies to prepare for impending retirements. *Journal of Library Administration*, *60*(4), 354-364.

Draaijer, R. (2008). *Why share? An empirical investigation of knowledge contribution within electronic networks of practice.* [Unpublished master's thesis]., University of Twente, The Netherlands.

Duhon, B. (1998). It's all in our heads. *Inform (Silver Spring)*, *12*(8), 8-13.

Farrell, M. (2018). Leadership reflections: Organizational culture. *Journal of Library Administration*, *58*(8), 861-872.

Fuentes, D. G. (2020). Rethinking approaches to succession planning and developing a leadership pipeline in academic pharmacy. *American Journal of Pharmaceutical Education*, *84*(12).

Gallup. (n.d.). *How to improve the employee experience*. https://www.gallup.com/workplace/323573/employee-experience-and-workplace-culture.aspx

Hedberg, B. (1981). How organizations learn and unlearn. *Handbook of Organizational Design, (1)*, 3-27.

Hoffer-Gittell, J. (2016). *Transforming relationships for higher performing: The power of relational coordination*. Stanford University Press.

Jones, G. R. (2013). *Organizational theory, design, and change* (pp. 31-33). Boston: Pearson.

Kebede, G. (2010). Knowledge management: An information science perspective. *International journal of information management*, *30*(5), 416-424.

Kotter, J. P. (2012). *Leading change*. Harvard Business Review Press.

Lancaster, J. W., Stein, S. M., MacLean, L. G., Van Amburgh, J., & Persky, A. M. (2014).

Faculty development program models to advance teaching and learning within health science programs. *American journal of pharmaceutical education*, *78*(5).

Newstrom, J. W., & Davis, K. (2015). *Organizational behavior: Human behavior at work* (14th ed.). McGraw-Hill Companies.

Reitz, J. M. (2004). Librarian. *ODLIS: Online dictionary for library and information science*. https://odlis.abc-clio.com/odlis_l.html

Rutgers. (2005). Catalogs. https://catalogs.rutgers.edu/generated/scils_0305/pg4915.html

Schwartz, J., Denny, B., Mallon, D., Van Durme, Y., Hauptmann, M., Yan, R., & Poynton, S. (2020, May 15). *Knowledge management: Creating context for a connected world*. Deloitte Insights. https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2020/knowledge-management-strategy.html

Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. Doubleday/Currency.

Soltani, Z., Zareie, B., Rajabiun, L., & Ali Agha, M. F. (2020). The effect of knowledge management, e-learning systems and organizational learning on organizational intelligence. *Kybernetes, 49*(10), 2455-2474. https://doi.org/10.1108/K-12-2018-0672

Soni, P. (2019, August 16). Design thinking is to innovation what Six Sigma is to quality. *Entrepreneur.* https://www.entrepreneur.com/article/338261

University of Illinois, Urbana-Champaign: School of Information Science. (2024). *Course catalog*. https://ischool.illinois.edu/degrees-programs/courses

University of Maryland, College Park. (2024). *Curriculum & specializations – Master of library and information science (MLIS)*. https://ischool.umd.edu/academics/masters-programs/master-of-library-and-information-science/curriculum-specializations

University of North Carolina, Chapel Hill: School of Information and Library Science. (2022). *SILS course information*. https://sils.unc.edu/courses

University of Washington: Information School. (2024, January 5). *The information school: Library & information science*. https://www.washington.edu/students/crscat/lis.html

Wasko, M.M., & Faraj, S. (2000). 'It is what one does': Why people participate and help others in electronic communities of practice. J*ournal of Strategic Information Systems, 9,* 155-173.

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