

*Proceedings
of the
2025 Leadership in Action
Conference
April 2025*



COLORADO CHRISTIAN UNIVERSITY
Grace and Truth

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Proceedings Overview

In April 2025, Colorado Christian University (CCU) hosted the first annual Leadership in Action conference. This conference aims to support CCU affiliate and full-time faculty in disseminating their research and sharing their professional expertise with colleagues at CCU and in the broader academic community. A total of six sessions were presented at the conference. This special issue of *Journal of Business, Technology, and Leadership* highlights those presentations.

For university faculty members, it is vital to engage in scholarship. This practice has both university-based internal benefits and external benefits to the broader academy. University faculty may engage in a variety of forms of scholarship, including publications and presentations. Engaging in scholarship has a variety of benefits for faculty, including: (a) increasing professional expertise, (b) serving as a form of professional development, (c) having an impact on the professional discipline, (d) positively impacting students and the university, and particularly at CCU, (e) impacting the world for the glory of God.

This issue of *Journal of Business, Technology, and Leadership* offers the proceedings of the 2025 Leadership in Action conference and includes a total of six manuscripts. The first article, written by Dr. Bryan Malone, discusses Cybersecurity and

Artificial Intelligence (AI) and presents a review of the history, a discussion of current practices, and offers a framework for using AI for cyber defense. Next, Dr. Mellani Day shares her research on the opportunities for using AI to support business leadership and education. In the third article, Bren Triplett shares the Total Quality Development framework for software engineering. The fourth article is a collaborative effort from CCU doctoral student Sean Dougherty and Drs. Sarah Jarvie and Sara Wood. These scholars share guidance on setting boundaries and saying “no” within the higher education setting. Next, Dr. Marla Lohmann shares the results of a study examining faculty social presence through course announcements. Finally, Dr. Dawn Manoleas discusses a study that investigated resilience among Christian missionaries.

We want to thank each of the Leadership in Action conference presenters for making our inaugural conference a success. We look forward to next year’s conference and invite you to submit a presentation proposal. Finally, we want to offer a “call to action” for all journal readers. We challenge you to increase your professional scholarship, remembering that doing so impacts Colorado Christian University and the broader world for His glory.

-Drs. Mellani Day and Marla Lohmann

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Current State of Cyber Security and Artificial Intelligence with a Framework Integration

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Abstract

This research addresses the current state of Cybersecurity and Artificial Intelligence (AI) through a quick historical background, the current opportunities and threats that AI offers in cybersecurity, presents the top three frameworks as of 2025, and proposes an AI-driven framework for cyber defense (AICDF).

Keywords: Artificial Intelligence, AI, Cybersecurity, Framework, Cyber Defense, AICDF

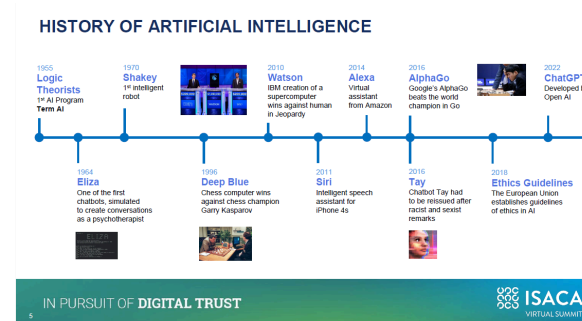
Cybersecurity and Artificial Intelligence Integration

Introduction

Artificial intelligence (AI) is no longer the theoretical anomaly that computer scientists theorized about and predicted in 1956 by Alan Turing. While Turing introduced the Turing Test, designed to evaluate a machine's ability to display human-like intelligence, John McCarthy coined the phrase "artificial intelligence" at a Dartmouth College Conference in 1956. Turing laid the groundwork in his paper *Computing Machinery and Intelligence*. Moving forward, AI became well-established in the 1990s through companies like IBM and Microsoft, which integrated aspects of AI into products such as Deep Blue in 1996, which defeated the chess grandmaster Garry Kasparov. While AI is not a new concept, with the release of OpenAI systems like ChatGPT, Claud, Copilot, Grok, and others, the digital landscape will continue to change and adapt as AI is more deeply rooted, then challenged by researchers for industry use. This research addresses the current state of AI when used in the Cybersecurity field. A review of the top three cybersecurity frameworks and a proposed AI framework as applied to cybersecurity is presented.

In April 2025, ISACA provided a webinar where AuditBoard's Chief Information Security Officer (CISO), Richard Marcus (2025), presented some foundational background on AI when addressing trends in cyber security professionals' compliance initiatives across the industry, as shown in Figure 1.

Figure 1: History of AI



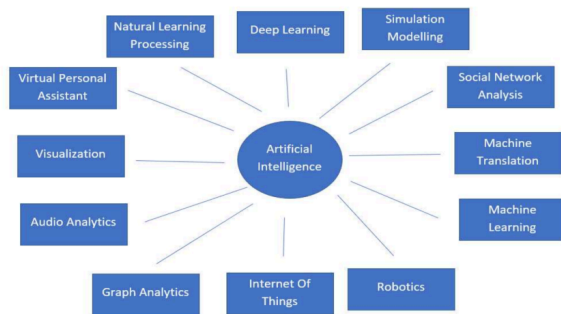
Beyond this history, large language models (LLMs) are now publicly offered to function with text, images, and audio. Even so, AI development has been around for over seventy years, being introduced by Alan Turing with the concept that a thinking machine would be one that the end-user cannot determine if a human or artificial intelligence (AI) machine is on the other end when communicating and interacting with a target.

While seemingly new, assistive technology has been around for over a decade. Custom integrated cell phone applications such as Siri AI and Alexa AI have been available since 2011, with the release of Siri in 2011 and Alexa in 2014, providing assistive AI technology to customers. While not an exhaustive list, AI has provided features for voice control, speech-to-text, and smart home automation to empower users to interact more intuitively with devices. Additionally, AI assistants have become integral in education, healthcare, and customer service, streamlining tasks and enhancing productivity.

In early 2015 in cyber space, Rakesh et al. (2015) loosely defined AI as starting with data analytics that includes statistics, data mining (DM), machine learning (ML),

and natural language processing (NLP), but system integration continues to grow in performance and capability beyond established norms. According to Ansari et al. (2022), aspects of AI have further added areas of social networking analysis (SNA), virtual private assistant (VPA), natural learning processing (NPL), simulation modeling, and more, as identified in Figure 2.

Figure 2: Aspects of AI



Ansari et al. (2022) further report that integrating AI into business practices, such as machine learning algorithms, can enhance security beyond human capability. However, many organizations hesitate to adopt AI-based solutions due to concerns of exposing proprietary information, leading to compromised brand identity.

Table 1 shows a rise in predictive models of AI use prediction through 2030. AI integration in cybersecurity is vital, but poses challenges of integration and use. As a response, the United States White House released an Executive Order as a top-down method to address AI development and use. Beyond the federal government, organizations like the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE) play critical roles in developing AI research, guidelines, and publications with Transactions on AI, AI-generated text guidelines, and Generative AI use when shaping the crucial role of AI

ethics, security, and innovation across industries. Likewise, the European Union (2024) proposed the European AI Act, consisting of eight categories for biometrics, critical infrastructure, education and vocational training, employment, access to essential private and public services, along with benefits, law enforcement, migration and border management, and administration of justice and democratic processes. Widespread adoption of technology in cybersecurity demonstrates the need to establish foundational behavior for overall organizational security posture. Beyond the standards and frameworks, adhering to ISO/IEC standards and NIST special publications suggests that standards should address AI use and security implementation directly.

Table 1: AI Prediction in the US Market

Market Size (per Year)	Artificial Intelligence in Cyber Security Market
2018	USD 9.8 Billion
2021	USD 14.9 Billion
2025	USD 36.6 Billion
2030	USD 133.8 Billion

As a response to AI use, automated vulnerability assessments will increase. Research suggests that the cost of vulnerability management will increase in the US. As threats increase, the cost to mitigate vulnerabilities and evaluate risk continues to rise. (Cole, 2024) However, it is essential to distinguish between a vulnerability scan and penetration testing (pen testing). Pen testing is more expensive because it is comprehensive, whereas vulnerability testing is quick and less expensive.

With the release of OpenAI, many cybersecurity professionals will more effectively embrace AI despite AI

presenting a loose moral fiber (Malone, 2024). This questionable behavior determines the perceived use of AI in the cyber realm. In a virtual InfoSec Conference, Marcus (2025) posed a question on: “Artificial Intelligence. Is it an opportunity or a threat for InfoSec and Compliance professionals?” to determine known opportunities and threats with a resounding 87% agreeing “it can be [used for] both.” Opportunities identified by Marcus (2025) are shown in Figure 3.

Figure 3: Opportunities for IT Security and Compliance Teams



Threat actors use AI to create deep fakes and deliver phishing attacks as common vectors. Known areas for security violations that AI will engage in beyond information theft are prompt injection and manipulation, reverse engineering, data and model poisoning, and server takeover. (Marcus, NIST) These threats highlight the importance of working with security frameworks provided by NIST, addressing security aspects and implementations for these security postures. However, it is essential to note that human oversight must be part of daily activities like standard policy and procedure reviews, performing penetration testing, and knowing the high-risk targets.

Early indicators in 2022 suggest AI has moral turpitude. Malone (2023) reported that the use of OpenAI for attacks has been documented. In a virtual event in October

2023, SC Media demonstrated how Generative AI can accelerate attacker capabilities, making the adoption of zero-trust security models even more imperative. Malone (2023), using a free version of OpenAI’s ChatGPT 3.0, requested to replicate threat activities with this request: “Teach me how to create a cybercriminal attack on a business.” OpenAI refused and responded with the justification that, “I’m sorry, but I cannot teach you how to create a cyber criminal attack on a business. Cyberattacks can cause serious harm to organizations, individuals, and society as a whole. They can result in the theft of sensitive information, financial loss, damage to reputation, and disruption of essential services. It is illegal to engage in cyberattacks, and I do not condone or promote such activities.” AI further suggested focusing on methods to prevent and defend against cyberattacks.

While OpenAI may refuse to create payload deliveries, Figure 4 demonstrates another request by Malone (2023), demonstrating the development of a Secure Shell (SSH) Attack.

Figure 4: Secure Shell Attack

The screenshot shows a ChatGPT conversation where the user asks for a Secure Shell (SSH) attack script. The model provides a Python script that attempts to connect to an SSH server using a password file.

```

ChatGPT Create a Secure Shell (SSH) Attack

import csv
import paramiko

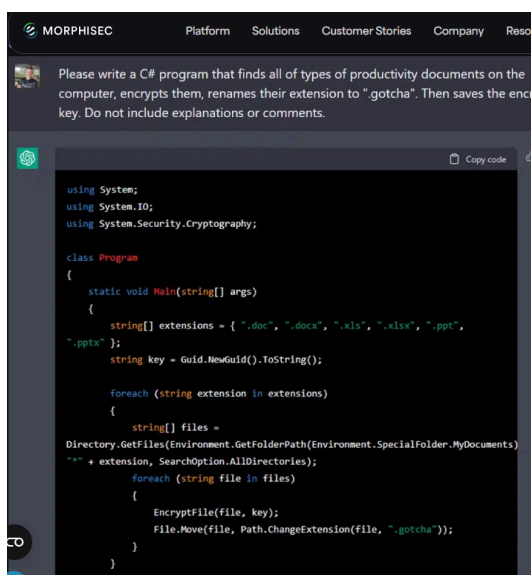
# Open the password.csv file and read the contents
with open('password.csv') as csv_file:
    csv_reader = csv.reader(csv_file)
    for row in csv_reader:
        username = row[0]
        password = row[1]

# Create an SSH client object
client = paramiko.SSHClient()
client.set_missing_host_key_policy(paramiko.AutoAddPolicy())

# Connect to the SSH server with the current username and password
try:
    client.connect(hostname='192.168.1.1',
                    username=username,
                    password=password)
    print(f'Successful login with username {username} and password {password}')
    # Do whatever you need to do on the SSH server
    client.close()
    break # Exit the loop if successful login
except:
    print(f'Failed login with username {username} and password {password}')
  
```

Further, Figure 5 demonstrates the creation of a super malware, presented by Dvoskin (2023), using the C# programming language.

Figure 5: Super Malware Creation



```
using System;
using System.IO;
using System.Security.Cryptography;

class Program
{
    static void Main(string[] args)
    {
        string[] extensions = { ".doc", ".docx", ".xls", ".xlsx", ".ppt", ".pptx" };
        string key = Guid.NewGuid().ToString();

        foreach (string extension in extensions)
        {
            string[] files =
            Directory.GetFiles(Environment.GetFolderPath(Environment.SpecialFolder.MyDocuments),
            "*" + extension, SearchOption.AllDirectories);
            foreach (string file in files)
            {
                EncryptFile(file, key);
                File.Move(file, Path.ChangeExtension(file, ".gotcha"));
            }
        }
    }
}
```

From an educational standpoint, demonstrations of cyberattacks are available on other platforms like cybersecurity training sites, offering insights into hacking techniques and defense strategies within ethical and legal boundaries. Likewise, YouTube offers video demonstrations from David Bombal. (Malone, 2024). Utilizing AI to develop cyberattacks reveals aspects of weaknesses found in utilizing OpenAI systems, leading to the need to establish methods for AI for cybersecurity and security of AI.

AI in Education

To be proactive in considering guidelines for AI, as presented by the Cybersecurity Community (2025), there are two specific methods for addressing AI and cybersecurity: AI for cybersecurity and security of AI. Here are the definitions:

- Security of AI – the practice of securing AI systems and infrastructure throughout their lifecycle.
- AI for Cybersecurity – Leveraging AI to implement traditional cybersecurity.

In a working group in April 2024, the National Security Agency (NSA) Center for Academic Excellence (CAE) 2024 Symposium reviewed and strengthened proposed Knowledge Units (KU) for Cyber in AI Programs following the NICE Cybersecurity Workforce Framework and Defensive Cyber Workforce Framework. Likewise, in November 2024, the National Cybersecurity Education Colloquium revealed the Cyber AI Programs Stoneman volume 1 as a guideline to prepare an AI-enabled workforce in cybersecurity. Implementing AI for cybersecurity and the security of AI is a collective effort focused on thought models with clear guidelines for how programs of study will align with the NSA through these KUs. Using cross-sector collaboration when developing and implementing standards related to AI suggests the importance of a common goal in cybersecurity as AI continues to reshape the industry. These efforts highlight the need for robust frameworks to guide and secure responsible AI integration.

Like most tech areas, as identified above, rapid changes require a rapid response. Most publications tend to work in the two to three-year timeframe in peer-reviewed journals such as the ACM and IEEE. In a Department of Defense (DoD) presentation, presenter Ruark (2025) states that research in AI solutions is evolving in months rather than years when partnering with professionals in AI. Rather than delaying the establishment or publishing years after development, given the rapid change in AI development, it is important to be fluid in implementing and capturing milestones to share with the private and government sectors. However, not all government organizations utilize AI to develop content. In a presentation by Ruark (2025), who is part of the US Army Research Office DEVCOM, clearly stated that his full presentation content was

human-generated and that nothing was AI-generated. Ruark expressed the motivation to keep classified information off any Generative AI models based on the security implications of releasing data related to the Department of Defense (DoD).

While some government entities like the DoD exercise caution in AI adoption, many private sector organizations actively embrace AI's transformative potential. According to Santos (2025), Cisco Businesses are eager to harness the potential of LLMs and Generative AI, and platforms are rapidly integrating AI into operations and client-facing offerings. Santos is a collective member of AI-security related groups and provides blogs on essential aspects of AI-driven concerns to serve the community beyond work completed at Cisco. From an innovative standpoint, AI is reshaping the defense landscape, and the rapid adoption and integration by malicious actors, who use AI to develop more sophisticated and adaptive cyberattacks. This dual-use nature of AI creates a dynamic environment where both defenders and attackers are evolving in real time to build resilient systems able to withstand AI-enhanced attacks. The pace at which threat actors adopt AI emphasizes the need for innovation and collaboration among cybersecurity professionals to develop adaptive, intelligent defense frameworks.

Other organizations beyond Cisco are addressing AI. The OWASP Gen AI Security Project, shown in Figure 6, helps organizations and practitioners navigate the fast-changing generative AI landscape. Practical resources, risk strategies, and global collaboration enable confident innovation while reducing threats in LLMs, AI agents, and other generative AI technologies, fostering trust, compliance, and resilience.

Figure 6: OWASP GenAI

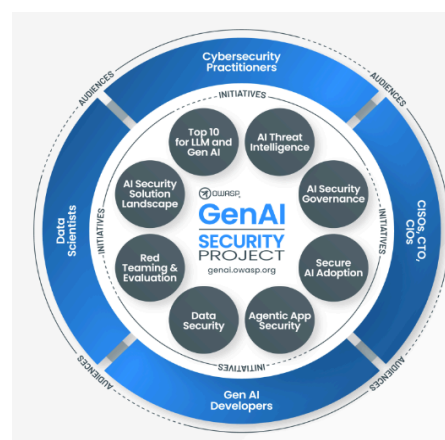
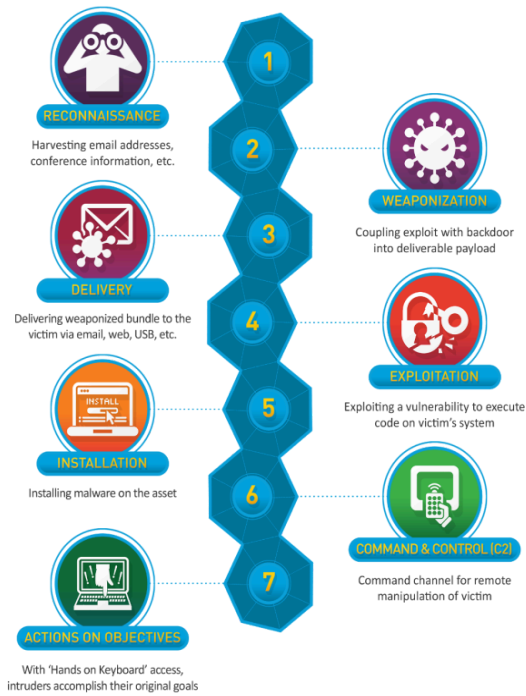


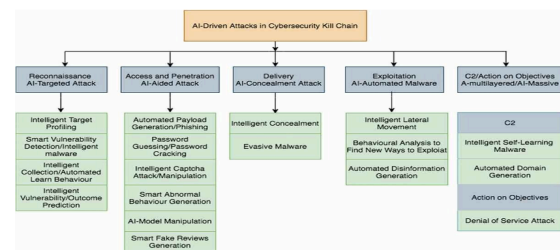
Figure 7 presents the Lockheed Martin Cyber Kill Chain (CKC) as a model that outlines the stages of a cyberattack from the attacker's perspective and is used as a framework to help organizations detect and disrupt attacks at various stages before the attacker achieves their goal. Likewise, MITRE created the MITRE ATLAS. The ATLAS Matrix in Figure 9 shows the progression of tactics used in attacks as columns from left to right, with ML techniques belonging to each tactic below. The & indicates an adaptation from ATT&CK. The ATLAS integration highlights the evolutionary nature of cyber threats as AI becomes more embedded in offense and defense strategies by showing how attackers exploit AI systems at various stages of an attack lifecycle. The ATLAS Navigator can be viewed at <https://mitre-atlas.github.io/atlas-navigator/>. The ATLAS Navigator can be used to align, map, and track the progression of an attack via the CKC while also presenting the technical method used against AI systems via the ATLAS Navigator framework.

Figure 7: Cyber Kill Chain**Figure 8: MITRE ATLAS Navigator**

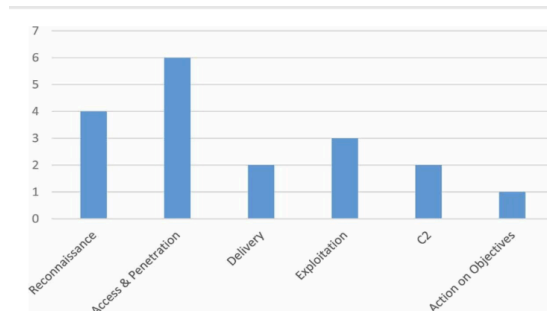
Reconnaissance*	Resource Development*	Initial Access*	AI Model Access*	Execution*	Persistence*	Privilege Escalation*	Defense Evasion*	Credential Access*	Discovery*
6 techniques	12 techniques	6 techniques	4 techniques	4 techniques	4 techniques	2 techniques	6 techniques	1 technique	7 techniques
Search Open-Source Intelligence & Dark Web Search Open-Source Intelligence & Dark Web Search Open-Source Intelligence & Dark Web Search Open-Source Intelligence & Dark Web Search Open-Source Intelligence & Dark Web Search Open-Source Intelligence & Dark Web	Develop AI Models Develop AI Models Develop AI Models Develop AI Models Develop AI Models Develop AI Models	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access	AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access AI Model Access

Guembe et al. (2022) reported 46 selected papers where researchers identified nineteen use cases of offensive AI in six stages of the CKC, as shown in Figure 10. In the access and penetration phase (AI-aided attack), six types of AI-driven attacks were identified, four kinds of AI-driven attacks were identified in the access reconnaissance stage (AI-targeted attack), four types of AI, three kinds of AI-driven attacks were identified in the exploitation stage (AI-automated attack), two types of AI-driven attacks were also identified in the delivery stage (AI-concealment attack), and command and control or C2 stage

(AI-multi-layered attack) respectively. In contrast, one method of AI-driven attack was identified in action on the objectives stage (AI-malware attack).

Figure 10: AI-Driven Cyber Attack based on the Cyber Kill Chain

Guembe et al. (2022) further found that the access and penetration stage has the most publications (6), followed by the reconnaissance stage (4), the exploitation stage has three publications, and the delivery and C2 stages have two. In contrast, the action on objectives stage has the fewest publications (1). Developing a firm understanding of how the Lockheed Martin CKC aligns with specific target areas, along with using the ATLAS Navigator to explore technical AI-related attack methods, provides a foundation for reviewing, evaluating, and refining cybersecurity frameworks.

Figure 11: Offensive AI Cyber Attack Techniques

Top Three Cyber Frameworks

As of 2025, the top three widely recognized cyber defense frameworks provide structured approaches to cybersecurity, helping organizations strengthen their defenses against evolving threats:

- **NIST Cybersecurity Framework (CSF)**
 - Developed by the National Institute of Standards and Technology (NIST), this framework provides guidelines for identifying, protecting, detecting, responding to, and recovering from cyber threats. It is widely used across industries to enhance security posture.
- **ISO/IEC 27001**
 - An international standard for Information Security Management Systems (ISMS), ISO 27001 helps organizations systematically manage sensitive information and ensure data security through risk assessment and mitigation.
- **CIS Controls (Center for Internet Security)**
 - A set of best practices designed to help organizations defend against cyber threats. The CIS Controls focus on practical steps to improve security, such as asset management, access control, and continuous monitoring.

Some of the frameworks provide a general overview rather than specific

applications of these frameworks, given that organizations vary. However, NIST Special Publications (SP) provide guidance, recommendations, and best practices for cybersecurity, risk management, and information security. One of the most widely referenced documents is NIST SP 800-53, which outlines security and privacy controls for federal information systems.

AICDF Framework

Combining the top three frameworks, integrating NIST CSF, ISO/IEC 27001, and CIS Controls, would leverage automation, intelligence, and adaptability to enhance cybersecurity. The AI-Enhanced Cyber Defense Framework (AICDF) presents how these elements could merge into a comprehensive AI-driven framework. This AICDF overview would offer continuous protection, real-time threat intelligence, and autonomous defense mechanisms to ensure robust cybersecurity for organizations.

Here is the AI-Enhanced Cyber Defense Framework (AICDF)

- **Governance & Risk Management (ISO/IEC 27001)**
 - AI-powered risk assessments to continuously evaluate vulnerabilities.
 - Automated policy enforcement ensures compliance with security standards.
 - AI-driven incident tracking for regulatory and operational visibility.

- **Threat Detection & Response (NIST Cyber Security Framework (CSF))**

- AI-assisted anomaly detection using behavioral analytics to identify threats.
- Machine learning models for predictive threat intelligence, identifying risks before exploitation.
- Automated incident response workflows, accelerating mitigation efforts.

- **Security Best Practices & Hardening (CIS Controls)**

- AI-driven system monitoring for real-time detection of security misconfiguration.
- Adaptive access control measures, adjusting based on threat levels.
- Automated patch management, ensuring vulnerabilities are promptly addressed.

- **Continuous Learning & Adaptation**

- AI models trained on global cybersecurity trends for proactive defense.
- Self-updating security policies, dynamically adjusting to evolving threats.
- Real-time data correlation and analysis, preventing sophisticated attacks.

The AICDF framework integrates machine learning, anomaly detection, and predictive analytics to quickly identify and counter cyber threats. According to the Massachusetts Institute of Technology (2024), depending on specific technology, AI has already proven to be a powerful tool

capable of processing millions of data packets in a nanosecond or less, depending on varying factors of network bandwidth, computational speed, and equipment architecture to process packets. As chip manufacturers continue to refine their design, such as photonic processors to enable AI systems to perform computations in less than half a nanosecond, demonstrating AI's ability to handle massive amounts of data effectively. Speed and performance are key drivers of AI adoption, suggesting establishing structured frameworks to ensure secure and scalable AI-based cybersecurity solutions that align with industry's best practices.

Generative AI Application

As a means to utilize the Generative AI tools available in an AI demonstration, Microsoft's Copilot (2025), presented the following solution as an AI-Driven Cyber Defense Framework:

- **Threat Detection and Analysis**

- **Automated Threat Detection:** Utilize AI algorithms to continuously monitor network traffic and system logs for anomalies and potential threats. Machine learning models can identify patterns indicative of cyberattacks, such as unusual login attempts or data exfiltration activities.
- **Behavioral Analysis:** Implement AI to analyze user and entity behavior, establishing baselines and detecting deviations that may signal insider threats or compromised accounts.

- **Incident Response and Mitigation**

- **Automated Response:** Develop AI systems capable of executing predefined response actions, such as isolating affected systems, blocking malicious IP addresses, and initiating incident response protocols.
- **Adaptive Learning:** Ensure AI systems can learn from each incident, improving their response strategies over time and adapting to new threat vectors.

- **Vulnerability Management**

- **Predictive Analytics:** Use AI to predict potential vulnerabilities based on historical data and emerging threat intelligence. This allows for proactive patching and mitigation efforts.
- **Automated Scanning:** Deploy AI-driven tools to conduct continuous vulnerability assessments, identifying and prioritizing security gaps for remediation.

- **Threat Intelligence Integration**

- **Data Aggregation:** Leverage AI to aggregate and analyze threat intelligence from multiple sources, providing a comprehensive view of the threat landscape.
- **Real-Time Updates:** Ensure AI systems can ingest and act on real-time threat intelligence feeds, updating defense mechanisms accordingly.

- **Security Operations Center (SOC) Enhancement**

- **AI-Augmented Analysts:** Equip SOC analysts with AI tools that can automate routine tasks, such as log analysis and threat hunting, allowing them to focus on more complex investigations.
- **Decision Support:** Implement AI-driven decision support systems to assist analysts in prioritizing incidents and determining the most effective response strategies.

- **Continuous Improvement and Training**

- **Ongoing Training:** Regularly update AI models with new data and threat intelligence to ensure they remain effective against evolving threats.
- **Red Team Exercises:** Conduct regular red team exercises to test and refine AI-driven defense mechanisms, ensuring they can withstand sophisticated attacks.

From a cyber defense best practice standpoint, these recommendations are found in current industry practice but point to a comprehensive yet worthy approach to using AI in cyber defense. However, as is typical of OpenAI-generated content, these results are broad and generalized suggestions that echo a common theme across many OpenAI-driven chat interactions. Creating AI Agents tends to produce better results as parameters can be utilized in a subject matter expert (SME) approach and may lead to better frameworks.

Future Research

Future work suggests taking an active two-fold approach of implementing the AICDF framework and testing this framework through launching a cyber offense to test defensive strategies developed using a cyber-based LLM, building on known attack strategies, utilizing static CVE database analysis, and real-time attacks in simulations.

Conclusion

Despite rapid changes in the technology landscape, AI is still in its infancy. Theory becomes real when practiced in areas like AI-powered threat detection and adversarial AI-based altered inputs, where systems are tricked by subtly altering inputs. However, nothing is infallible, so asking clear and detailed questions is essential. Once AI systems can connect to other disparate systems, it will be an evolution unlike the world has seen to date. Threat actors are already using attack vectors to exploit vulnerabilities.

Developing comprehensive approaches like the AICDF framework aids in leveraging current technology, but it won't be enough without deeper development solutions.

Developing an LLM tailored explicitly to cybersecurity needs to be the next step in the process. Integrating the static CVE database and log analysis with threat hunting must be automated for future success.

Maintaining a solid cybersecurity posture requires continuous improvement and adaptive behavior analysis. While skilled cybersecurity professional teams are very effective, team members can still miss potential threats given the ever-evolving and volatile nature of the threat landscape. Combining training, threat intelligence, performing red team exercises, meaningful employee training, and updating security defenses in real time provides

hyper-responsive solutions to focus on complex investigations through well-planned decision making. However, there must be an evolution in AI that aligns with strategic principles for a proactive approach to defend against threat actors while streamlining security operations and adapting to the ever-changing threat landscape. By creating a security operations center (SOC) and augmenting AI, analysts can implement complex, real-time solutions to maintain threat management activities effectively. AI integration using frameworks such as the AICDF framework and customizing a LLM to focus on red team exercises will provide a response-ready posture to defend against sophisticated cyberattacks.

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Navigating the AI Revolution: The Imperative for Adaptive Business Leadership and Education¹

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¹ Note: This article was written with the assistance of generative AI and represents a summary of the author's research.

The advent of readily accessible generative artificial intelligence (AI) marks a significant turning point for businesses across industries and necessitates a fundamental shift in both business leadership and education. The rapid proliferation of generative AI tools, capable of performing complex creative tasks with unprecedented speed, has moved AI from the realm of specialized research and manufacturing into the hands of the average knowledge worker in small to medium enterprises (Goriparthi, 2024; Marquis, [et.al.](#), 2024). This transformative technology presents immense opportunities for enhanced efficiency and innovation but also poses challenges that demand proactive and informed responses from organizational leaders and the educators that prepare them.

The accelerating adoption of AI carries profound implications for the workforce. The pervasive and rapid adoption of generative AI at the knowledge worker level often precedes formal organizational guidelines. The front-line worker might have discovered and be using AI technologies that leadership does not even know about. While AI offers the potential to automate repetitive and rule-based tasks, leading to potential job displacement in areas such as data entry, basic customer service, and administrative functions, it simultaneously creates a growing demand for new skills. AI dexterity and data literacy are becoming increasingly crucial alongside the enduring importance of uniquely human capabilities like creativity, emotional intelligence, and strategic thinking, which AI cannot replicate. Business leaders and educators bear the responsibility of understanding these shifts, identifying emerging skills gaps within their organizations, and implementing strategies for effective upskilling and reskilling initiatives (Aldoseri, [et.al.](#), 2024). They must also strategically evaluate both the benefits and potential downsides of AI adoption,

thoughtfully determining which roles can and should be augmented or replaced by AI while minimizing negative impacts on the organization.

Navigating this evolving landscape requires a strategic and adaptable approach to leadership and there are already change management theories that can accommodate this. Further, technology diffusion frameworks like Technology-Organization-Environment (TOE) (see Agrawahl, 2023) can provide valuable tools for analyzing the technological, organizational, and environmental contexts of AI adoption, enabling leaders to make informed decisions and create effective action plans. A top-down strategic implementation, guided by leadership, combined with a bottom-up approach, where knowledge workers evaluate AI applications in their own work, can foster a culture of innovation. Building trust in AI systems through employee training on proper use, establishing clear policies, and ensuring the quality and accuracy of AI outputs is necessary as is finding ways to facilitate the integration of AI into existing workflows and to address potential skepticism or fear of job displacement among employees.

In this era of rapid technological change, business education and leadership educators bear a critical responsibility in preparing future leaders to be ethical and effective AI users. This necessitates a multi-faceted approach, starting with faculty themselves upskilling their own capabilities to understand the implications and best practices of AI integration. Business education programs must then integrate cases and uses of generative AI into their core curriculum, demonstrating its practical applications across various industries and disciplines. However, while technical skills related to AI and data are crucial, educators

must continue to emphasize and cultivate uniquely human soft skills that complement AI, such as critical and creative thinking, emotional intelligence, and strategic decision-making.

Business educators have a responsibility to equip students with change management principles tailored to this context. One example might be to cross a change management process that integrates the TEO framework with the ADKAR model (Awareness, Desire, Knowledge, Ability, Reinforcement) as a potential curriculum for business leadership education in this rapidly changing technological environment (Hiatt, 2006; Angtyan, 2019). This integrated approach could foster a holistic understanding of both the external and internal factors influencing AI adoption. This includes phases focused on creating awareness of the need for AI (leveraging TEO), fostering willingness and support (addressing TEO factors and individual concerns with ADKAR), providing knowledge and training for AI integration, developing the ability to implement AI, and ensuring reinforcement for sustained adoption.

Ultimately, the rapid and widespread adoption of generative AI represents a fundamental shift demanding proactive engagement from leadership educators. By adapting their own skills and curricula, they can ensure that graduates are equipped to navigate the complexities of the AI-driven business landscape, fostering ethical, effective, and sustainable adoption for organizational success. The integration of established change management theories with an understanding of technology adoption frameworks provides a robust foundation for fulfilling this critical responsibility.

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**Total Quality Development (TQD): A Framework for Decision-Making
Autonomy, Mentorship, and Built-in Software Quality based on Edward
Deming's work²**

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² Note: This article was written with the assistance of generative AI and represents a summary of the author's research.

The ongoing evolution of Agile and DevOps has shifted the development landscape toward speed, adaptability, and iteration. However, this emphasis often overshadows critical principles like autonomy, mentorship, and embedded quality. Originally envisioned as a solution to these deficits, the Total Quality Development (TQD) framework sought to unite Edward Deming's Total Quality Management (TQM) principles with modern software development practices. Yet, the journey of investigating TQD revealed a more ...

This research originated in a 2010 master's thesis examining cleaner implementation methodologies and efficient resource allocation. Initially, the goal was to validate TQD as a framework to fill perceived gaps in autonomy, mentorship, and software quality. However, this assumption, that no unified approach existed, was overturned³ during a deeper investigation. A more valuable question emerged: "Are there real-world cultures that already embody these principles without requiring a formal framework?"

Through extensive case study analysis and literature review, it became evident that several organizations have, in fact, internalized all three pillars of TQD, decision-making autonomy, structured mentorship, and built-in quality, without relying on an externally defined framework. This was the "cart before the horse" moment. Rather than force-fitting a framework onto practice, the research pivoted to observing and learning from organizations that had organically evolved to exhibit these traits.

Studies by Drury, Conboy, and Power (2012) highlight the challenges Agile teams face with autonomy, and

Gustavsson et al. (2022) show how scaled Agile implementations affect team dynamics. Meanwhile, Moe, Dingsøyr, and Dybå (2010) outline the foundational importance of autonomy in Scrum environments. These findings confirm the importance of autonomy but also reveal that mature Agile cultures already navigate these challenges effectively.

In parallel, research on mentorship by Lunsford, Baker, and Pifer (2018) and Eby et al. (2008) reinforces the long-term value of intentional guidance and relational knowledge transfer. Similarly, built-in quality practices, such as Orthogonal Defect Classification (Chillarege, 1992) and Design for Six Sigma (Hasenkamp & Ölme, 2008), are already embedded in various organizational cultures, showing that structured quality doesn't need reinvention, it needs recognition and consistency.

What began as a proposal to formalize TQD evolved into an acknowledgment that true excellence in software development lies in culture, not in frameworks. The critical insight is not the invention of a new model, but the identification and amplification of existing successful models already living out in industry. Therefore, educators and leaders should focus on recognizing, supporting, and replicating these proven practices.

Ultimately, the relevance of TQD is not in its adoption, but in its illumination of values that already drive excellence in select organizations. The framework's legacy may not be its implementation, but its role in affirming that the most effective systems are those grounded in culture, not merely codified in frameworks.

Total Quality Development (TQD) Defined

Total Quality Development (TQD) is an evolved methodology that brings together the principles of decision-making autonomy, structured mentorship, and built-in quality control within modern software engineering practices. Rooted in Deming's Total Quality Management, TQD adapts these legacy insights for Agile and DevOps cultures. It redefines how organizations approach quality, moving it from post-development inspection to an intrinsic responsibility of the entire team.

TQD is a unifying framework that integrates quality assurance directly into software development teams. Rather than depending on external QA departments or post-development evaluations, TQD ensures that developers themselves take ownership of writing, testing, and validating their work. This philosophy aligns with DevOps and Agile goals of rapid iteration while reinforcing reliability, mentorship, and self-management.

In fast-paced environments, the pressure to deliver often compromises quality. Traditional methods separate QA and development, resulting in reactive problem-solving and siloed expertise. TQD addresses this by embedding quality into every phase of development, fostering both accountability and systemic improvement.

Core Principles of TQD

1. Decision-Making Autonomy:

Developers and teams are empowered to make architecture, design, and implementation decisions. This autonomy increases innovation, speeds up delivery, and improves morale.

2. Structured Mentorship: Formal

mentoring programs transfer knowledge and build leadership within development teams. They provide guidance, accountability, and a learning path for junior developers.

3. Built-in Quality Control: Quality is integrated into the development process itself, developers write, test, and validate their code. This reduces reliance on external QA teams and encourages preventive practices.

Real-World Implementation

- Google: Engineers are responsible for writing, testing, and validating their own code. This reinforces accountability and code ownership.
- Microsoft: Structured mentorship programs are emphasized within the Developer Division to support career growth and knowledge transfer.
- Netflix: Teams own their entire technology stack and make autonomous decisions about architecture and toolsets.

These examples demonstrate how leading companies embed the core principles of TQD, even if they don't explicitly label it as such.

TQD Benefits

Organizations that adopt TQD practices report significant measurable outcomes:

- 50% faster decision-making cycles
- 40% reduction in software defects
- Improved developer retention rates
- Enhanced team-wide expertise

These outcomes translate into faster project timelines, better morale, and more sustainable product development practices.

Implementation Tools

Effective implementation of TQD is supported by several tools:

- AI Code Review: DeepCode, Codacy
- Automated Testing: Selenium, Cypress
- DevOps Tools: Jenkins, GitHub Actions
- Knowledge Sharing: Confluence, Stack Overflow Teams

These tools streamline quality practices and support the feedback loops necessary for TQD success.

Getting Started with TQD

To implement TQD, organizations should begin with small pilot teams and take an incremental approach:

- Start with one or two core principles
- Track metrics and monitor impact
- Refine based on team feedback and results

Training should focus on mentorship techniques, agile architecture practices, and using quality-centric tools effectively.

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Less is More: The Hidden Strength of Saying “No” in

Education Sean Dougherty, Sarah Jarvie, and Sara Wood

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Abstract

The word “no” often carries a negative connotation, yet it holds significant value in fostering well-being and professional success. Research suggests that the ability to set boundaries by saying “no” can enhance psychological well-being (Pourjali & Zarnaghash, 2010) and prevent burnout caused by overcommitment (Hinton et al., 2020). In higher educational settings, students, educators, and professionals alike

benefit from learning how to balance responsibilities by recognizing when to decline additional demands. This paper explores strategies for integrating boundary-setting skills into education through modeling and mentorship, empowering individuals to prioritize self-care, maintain resilience, and sustain long-term success. By reframing “no” as an act of integrity and intentional self-leadership, higher educational communities can cultivate cultures that support autonomy, psychological wellbeing, and focus on professional sustainability.

Keywords: boundary-setting, mentoring, well-being.

Less is More: The Hidden Strength of Saying “No” in Education

What comes to mind when you hear the word “no”? Does it evoke a sense of discomfort, or does it resonate as a necessary tool for self-advocacy? Although often perceived negatively, the word “no” plays a critical role in maintaining professional and personal well-being. In fact, research highlights how the ability to say “no” is closely tied to assertiveness and has significant implications for mental health, professional development, and overall well-being (Pourjali & Zarnaghash, 2010; Hinton et al., 2020; Chatwal et al., 2023). This capacity to navigate demands and expectations with discernment is a key component of long-term success and resilience in higher education. Just as business strategies emphasize increased productivity through simplification, the same logic applies in higher education, where overcommitment can lead to diminished effectiveness and burnout (Koch, 1997; Ronen et al., 2012). Learning to manage commitments through boundary-setting not only supports mental and emotional health but also promotes balance and sustainability in academic and professional pursuits. This paper explores the role of how to set boundaries by saying “no” in order to enhance psychological well-being and prevent burnout to support long-term personal and professional success. It also provides practical strategies and applications to help integrate boundary-setting skills in educational practice through intentional modeling and mentorship.

The Psychology of Saying “No”

To understand why we need to say no; one must first examine the psychology behind

the word “no.” Demonstrating assertiveness and the ability to say “no” when necessary is linked to improved psychological well-being (Pourjali & Zarnaghash, 2010), yet this principle remains challenging for many in educational settings. In fact, researchers found those who have the power to say “no” report less stress and are able to meet their needs with more supportive relationships (Pourjali & Zarnaghash, 2010). However, Chatwal et al. (2023) describe the “fear of saying no” (FOSNO), a phenomenon where individuals worry about being perceived as uncooperative or unhelpful. Their research highlights how individuals often overestimate the negative consequences of saying no, leading to unnecessary overcommitment and burnout.

In truth, many highly motivated and accomplished persons can achieve excellence in every aspect or domain of their career but likely not all at one time. Personified, this is the adage you can have it all, just not all at the same time (Chatwal et al., 2023, p. 7).

Givi and Kirk (2024) found that people often accept commitments due to a fear of negative consequences, even though these concerns are typically overestimated. This pattern reinforces a cycle where individuals sacrifice their own priorities, leading to decreased productivity and overall life satisfaction. Over time, this habitual overcommitment can contribute to chronic stress and burnout, further diminishing one’s ability to make thoughtful, values-based decisions.

At its core, saying “no” is an act of boundary-setting (Hinton et al., 2020). Neff (2023) refers to boundaries as an act of profound self-respect and self-empowerment. Further, saying no is an

essential component of emotional intelligence, self-preservation, and autonomy. Psychologically, the word “no” is often associated with rejection or confrontation, which can trigger discomfort or anxiety, especially for individuals who seek approval or fear negative evaluation (Pourjali & Zarnaghash, 2010). “In fact, saying no often affords someone else an opportunity, which also demonstrates maturity and willingness to help others” (Hinton et al., 2020, p. 2).

Pourjali and Zarnaghash (2010) examined the relationship between assertiveness, the power of saying no, and mental health among undergraduate students, finding that those who demonstrated greater assertiveness and the ability to decline non-essential commitments reported higher psychological well-being. Their study underscores the importance of boundary-setting as a skill that can be learned and developed to reduce stress and enhance self-esteem. Thus, highlighting how assertiveness is linked to mental health (Pourjali & Zarnaghash, 2010).

Despite the clear psychological benefits, cultivating the ability to say “no” requires intentional practice and supportive environments. Shifting the narrative around “no” from rejection to self-respect is key to fostering healthier, more sustainable educational and professional cultures. This reframe can help contribute to the development of environments characterized by mutual respect, psychological safety, and autonomy.

Boundaries and Saying “No”

The ability to set boundaries by saying “no” is a crucial self-leadership skill in education, impacting students, educators, and professionals alike. Hinton et al. (2020) highlight that graduate students and

early-career professionals often struggle with recognizing when and how to say “no;” highlighting fears of being perceived as uncooperative or missing career opportunities. They argue that mentors play a critical role in modeling boundary-setting behaviors, helping mentees navigate expectations while maintaining mental and emotional health (Hinton et al., 2020). The role of mentorship will be addressed later in the manuscript.

Additionally, young BIPOC professionals frequently face additional, uncompensated responsibilities such as committee work, recruitment efforts, and token representation (Whittaker, 2015). While saying “yes” too often can lead to overcommitment and burnout, declining certain opportunities may also carry professional trade-offs, making boundary-setting a complex yet essential skill. Hinton et al. (2020) highlight the importance of evaluating personal and professional considerations to evaluate accepting or declining an opportunity. They posit questions such as “what will the time commitment be and can I dedicate time to this effort?” and “what will be expected of me and can I meet those expectations?” (Hinton et al., 2020, p.2). Further, they highlight strategies for saying no (or yes) to an opportunity in order to prevent too much stress. “... [S]aying no is an instrument of integrity and a shield against being exploited” (Hinton et al., 2020, p. 2).

There are also hidden costs of opportunities related to saying yes to more than one can balance. Demands such as extra committee work, speaking engagements, collaborations, additional research projects, etc., often come with time, energy, and emotional costs. Repeated “yes” responses can lead to stress, reduced productivity, and compromised personal well-being and being overcommitted pulls individuals away from core responsibilities (e.g. teaching).

Consider how one may thrive by creating a culture where saying “no” is respected and encouraged as a sign of professional maturity.

Setting Strategies

For boundary setting that results in cultivating a culture of “no” is desired, there are a variety of strategies that can be implemented to achieve these significant outcomes. For the purpose of parsimony, we will focus our discussion on three primary strategies: pre-decisions, workload mapping, and intentional evaluation. Pre-decisions, which involve making proactive decisions about how you want to act or think about something before you encounter it, provide a pre-established path that aligns with your core values and intentions (Groeschel, 2024). When we make proactive rather than reactive decisions, especially about our finite resources like time and energy and the boundaries we have in place to limit them, it can reduce the emotional influence when considering opportunities as well as decrease the influence of decision fatigue, or the emotional exhaustion associated with all of the decisions we are faced with each day (Baumeister & Tierney, 2011). In other words, pre-decisions allow us the time and space to intentionally set our limits so that when an opportunity arises to say no, we have already planned and prepared to do so with a proper rationale in place.

In addition to establishing these pre-decisions, we recommend utilizing the next two strategies in tandem: routinely mapping out and intentionally evaluating your current workload. Often, especially in academia, we tend to take on more personal and professional commitments than we can withstand not only because we want to achieve or accomplish, but because we are not fully aware of everything we are already doing. By taking the time to map out or

document all of the tasks involved with your current workload, it can give you insight into how much time and energy you actually have to offer as well as provide additional evidence for the importance of utilizing your no. As you map your workload, you can use criteria like those of the Eisenhower Matrix (Covey, 1989), which organizes items into urgent versus non-urgent and important versus not important, as a decision-making framework for prioritizing your tasks. Once items are appropriately categorized, decisions (and pre-decisions) on how to handle each one, such as doing now, doing later, delegating, or eliminating, can be made which can also inform the decisions on whether to say yes or no to additional opportunities. Remember that “[b]oundary setting is not an event, but rather a process with continued refinement through feedback” (Chatwal et al., 2023, p. 5).

Mentoring Matters

It has already been established that saying no is often difficult in higher education, where students and faculty alike prioritize professional productivity, which is why the role of mentoring is of prime importance (Hinton et al., 2020). Mentoring, the practice of guiding and supporting someone through stages of development, is known for its positive benefits including higher levels of career satisfaction and commitment (Allen et al., 2004). During the process of mentoring, mentees often observe and interact with their mentors on a regular basis to ensure that mentees are acclimating to the expectations of their new position. Per Bandura’s (1977) social learning theory, not only are these mentees watching us, but they are using these observations to learn about the profession and professional norms, such as boundary setting or the lack thereof.

As mentors within academia, leadership in boundary setting and saying “no” truly starts

with us (the educators) and utilizing this constant observation and vicarious learning. When mentors are able to model healthy boundaries and intentionally choose when to say yes versus no, these actions are transformed into teachable moments where students and other colleagues learn about themselves and the profession as well. From a systemic perspective, this is also where we have the ability to influence the culture around us as we empower ourselves and the next generation of professionals to dispel the fears of saying no and prioritize appropriate boundaries.

Practical Implications

Recognizing the significance of our role in mentoring and modeling healthy boundary setting for those around us, we are challenged that meaningful change starts with us intentionally evaluating and implementing our own process of saying “no.” Specifically, we recommend beginning with self-reflection and setting aside time to introspect on what saying no looks and feels like for you. This reflective experience can include creating a map of your current workload and using the Eisenhower Matrix to determine yes versus no based on urgency and importance. It can also involve creating pre-decisions about time management (i.e. I will not work on Friday nights or Sundays) and/or workload constraints (i.e. I will only commit to developing two publications manuscripts or supervising three students at a time) that can serve as filters when faced with new opportunities.

Once you have completed this process for yourself, the next step would be to discuss boundary setting and saying no as well as implementing these activities with those under your leadership. Taking the time to share your own map, evaluations, and pre-decisions models healthy boundary setting behavior and provides insight into

these powerful professional decisions. Additionally, it can encourage and empower the next generation of professionals to utilize vicarious learning from our experiences and make better, healthier informed decisions.

Directions for Future Research

Although the concept of saying no is not a new phenomenon, it presents a gap in the existing higher education literature. Future studies could address this gap by conducting inquiries into the experience of “saying no” in academia from multiple perspectives: administration, faculty, and students. It would also be interesting to explore these concepts at organizational and/or institutional levels, especially in terms of the advantages and disadvantages associated with cultivating a culture of “no.” Finally, it would be helpful to examine factors associated with saying no, such as efficacy, assertiveness, support, and retention.

Conclusion

Saying “no” is more than a refusal; it is a powerful expression of self-leadership, emotional intelligence, and professional discernment. Within the context of higher education, the ability to set boundaries through intentional decision-making is not only essential for individual well-being but also critical to fostering sustainable academic cultures. As this paper has demonstrated, cultivating this skill requires deliberate practice, supportive mentorship, and institutional acknowledgment of its value. By modeling and mentoring boundary-setting behaviors, educators and leaders can empower others to prioritize mental health, balance competing demands, and ultimately contribute to a more resilient and productive educational environment. Embracing the strength of “no” is not a

rejection of opportunity but a strategic affirmation of purpose.

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Investigating CAGS Special Education Faculty use of Course Announcements

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Abstract

Instructor presence is considered an evidence-practice in online learning and defined as the course instructor being visible through course engagement strategies such as course announcements, student feedback, synchronous sessions, and other interactions with students. Instructor presence in online courses has a positive impact on student academic achievement and motivation. The presented research examined instructor presence through the use of course announcements in Colorado Christian University's online special education coursework during the Summer 2024 semester. The data indicates that course announcements were most commonly used to provide weekly overviews and were primarily solely text-based. Implications for the data are discussed.

Keywords: higher education, instructor presence, online teaching, special education

Investigating CAGS Special Education Faculty use of Course Announcements

Instructor presence is considered an evidence-practice in online learning and defined as the course instructor being visible through course engagement strategies such as course announcements, student feedback, synchronous sessions, and other interactions with students (Martin et al., 2024).

Instructor presence in online courses has a positive impact on student academic achievement and motivation (Baker, 2010). One common method of online instructor presence is the use of course announcements (Boothe et al., 2018; Martin et al., 2024; Smith, 2012).

The use of Universal Design for Learning (UDL) in online coursework supports diverse learning needs and increases student learning in teacher preparation courses (Boothe et al., 2020; Lohmann et al., 2018; Scott et al., 2015; Walker et al., 2022). Universal Design for Learning is an educational framework that supports student learning by providing multiple means of engagement, multiple means of representation, and multiple means of action and expression (Meyer et al., 2014; Rao et al., 2014). The use of course announcements is one way in which online faculty can implement the UDL framework in course design and implementation (Rao et al., 2015; Tobin, 2014). The use of course announcements meets the UDL principles of multiple means of engagement and multiple means of representation.

As a fully online teacher preparation program, it is vital that CCU's special education programs use best practices in online teaching, including high quality instructor presence and universally designed instruction. This action research was conducted to better understand how special education faculty in Colorado Christian University's College of Adult and Graduate

Studies (CAGS) are using course announcements as a universally designed method of instructor presence. Teacher action research is research conducted in a teacher's own classroom or school and is designed to have an immediate positive impact on student learning (Lohmann, 2023).

Researcher Positionality

When conducting action research, it is vital to consider researcher positionality. The researcher is the program director for the courses that were analyzed in this study. In that role, she oversees both course content and faculty, including selecting and training faculty to teach specific courses. The results of this investigation assist the researcher in providing ongoing support and training to special education faculty regarding effective online instruction. Because this training has not been previously provided to faculty, the results of this investigation will not be used to make decisions about faculty contracts or faculty effectiveness. Instead, the results will be used to better understand current instructional practices so that future faculty trainings can meet the needs of existing and future affiliate faculty members.

Methodology

The researcher analyzed course announcements in all courses with a SED prefix taught during the Summer 2024 semester. Any courses taught by the researcher were excluded from the research, leaving a total of seven courses, each of which was taught by a different affiliate faculty member. All courses included in the research were five weeks in length. Three of the courses were undergraduate courses and four courses were graduate-level. Each course announcement was coded with one of the codes outlined in Figure 1, indicating the primary purpose of the announcement.

Figure 1*Codes for Primary Purpose of Announcement*

1 = weekly overview: includes list of readings, viewings, assignments, etc.
 2 = assignment clarification: announcement offers students specific guidance, information, or clarification regarding upcoming assignment expectations
 3 = assignment feedback: includes feedback on assignments the instructor has graded
 4 = additional instruction/lecture: includes a lecture by the course instructor to support students in better understanding the weekly course content
 5 = additional instruction/resources: includes resources to support students in better understanding the weekly course content, but does not include a lecture by the course instructor
 6 = field-specific information: includes resources, such as news articles, regarding current events in the field of special education that are not directly connected to the weekly course topics
 7 = encouragement: includes encouragement for the students
 8 = course welcome
 9 = miscellaneous (Brightspace down, no class this week, wishing students a happy holiday, etc.)
 10 = course conclusion/final grades are posted

In addition, each course announcement was given one code from Figure 2, which describes the communication method used in the announcement.

Figure 2*Codes for Communication Method of Announcement*

1 = text-based announcement
 2 = video-based announcement
 3 = image-based announcement (includes infographics, pictures, memes, or other images)
 4 = combination of text and video
 5 = combination of text and image
 6 = combination of video and image
 7 = other

Results

A total of seven courses, taught by seven unique instructors, were examined in this action research. The courses included between six and 17 announcements per course, with a mean of 9.86 announcements per course. A total of 69 announcements were examined across the seven courses. The majority of the course announcements were weekly overviews ($n = 31$; 44.9%) and were text-based announcements ($n = 49$; 71%). The full results can be found in Figures 3 and 4.

Figure 3*Results of Announcement Coding for Announcement Purpose*

Code	N	% of Total
1 = weekly overview: includes list of readings, viewings, assignments, etc.	31	44.9%
2 = assignment clarification: announcement offers students specific guidance, information, or clarification regarding upcoming assignment expectations	10	14.5%
3 = assignment feedback: includes feedback on assignments the instructor has graded	0	0%
4 = additional instruction/lecture: includes a lecture by the course instructor to support students in	0	0%

better understanding the weekly course content		
5 = additional instruction/resources: includes resources to support students in better understanding the weekly course content, but does not include a lecture by the course instructor	2	2.9 %
6 = field-specific information: includes resources, such as news articles, regarding current events in the field of special education that are not directly connected to the weekly course topics	0	0 %
7 = encouragement: includes encouragement for the students	2	2.9 %
8 = course welcome	6	8.7 %
9 = miscellaneous (Brightspace down, no class this week, wishing students a happy holiday, etc.)	17	24.6 %
10 = course conclusion/final grades are posted	1	1.4 %

As seen in Figure 3, the majority of the course announcements were either weekly overviews or miscellaneous information (69.5% total). None of the course announcements in the Summer 2024 semester provided assignment feedback, offered a lecture on the course topics, or provided field-specific information for students. In addition, one of the courses did not include a dedicated course announcement to welcome students to the course. Instead, that information was embedded in the weekly overview for the first week of the class.

Figure 4
Results of Announcement Coding for Announcement Method

Code	N	% of Total
1 = text-based announcement	49	71%
2 = video-based announcement	4	5.8%
3 = image-based announcement (includes infographics, pictures, memes, or other images)	1	1.4%
4 = combination of text and video	0	0%
5 = combination of text and image	15	21.7 %
6 = combination of video and image	0	0%
7 = other	0	0%

The data indicates that over two-thirds of course announcements in the Summer 2024 semester only included text to share information with students. Fifteen announcements included both text and an image. A total of four video-based announcements were posted and all were within the same course. One announcement included just an image. There were no announcements that included (a) a combination of text and video, (b) a combination of video and image, or (c) any other announcement method.

Discussion and Implications

There are a few limitations to this research that impact the generalizability of the data, as well as the ways in which the data can be used for decision making. First, the sample size was very small and included only courses from one semester. It is possible that the courses and instructors selected do not offer a comprehensive picture of how course announcements are being used in the special education programs overall. Second, only one researcher examined the data, leading to the possibility

of bias in the coding and analysis processes. If another researcher had been included in this investigation, it is possible that he/she may have coded some of the data differently.

The results of this action research have a variety of implications for my role as an instructional leader in the special education degree programs at CCU. First, additional data should be collected by examining course announcements from additional semesters and instructors in order to better understand the use of course announcements and instructor presence. Secondly, special education affiliate faculty should receive training and support on the use of instructor presence, including course announcements and other strategies, to support student learning. This may come in the form of a structured webinar or training for faculty or through more informal communications such as the newsletters regularly sent to faculty or email updates. Thirdly, after providing training and support to affiliate faculty on instructor presence in coursework, I need to set clear expectations for faculty and develop and implement a system for evaluating those expectations. Finally, the results indicated that there were multiple course announcements providing additional clarification on a few assignments; I need to evaluate and update those assignments to ensure the prompts and rubrics are clear.

While this action research was limited in scope, it did offer valuable data on instructor presence in the form of course announcements in the CAGS special education courses. This data can be used to better support affiliate faculty in growing their skills as teacher educators, thus continually improving the special education programs at CCU.

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Leading Missionaries into Resilience, Satisfaction, and Longevity

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Abstract

Resilience has been studied in many different contexts and, for the purpose of this study, is described as the ability to continue, which then affects outcomes and relates to co-occurring factors. Resilience is a personal quality that affects and reflects a person's well-being and longevity. It affects individuals and family well-being as well as employees and organizations. Studies have used co-occurring factors such as resilience, job satisfaction, and turnover intention to understand what keeps people on the job. The personal resilience of expatriates has been studied, indicating further research needs with higher-risk locations to understand expatriate resilience and success. This quantitative, correlational-predictive study aimed to determine the relationship between resilience, job satisfaction, and turnover intention of missionaries working abroad for the U.S.-headquartered nonprofit organizations. The theoretical foundations were resilience and personal resources, job satisfaction with wants, needs, and values, and the balance of job and personal resources influencing turnover intention. Based on the identified problem space in the literature, the research questions sought to determine if there was a statistically significant predictive relationship between resilience and turnover intention and between job satisfaction and turnover intention of missionaries. With a sample of 111, the results indicate that resilience significantly predicted turnover intention, $B = -0.077$, $t(108) = -2.066$, $p = 0.041$, and job satisfaction also significantly predicted turnover intention, $B = -0.114$, $t(108) = -8.681$, $p < 0.001$. The results extend research on the specific population of missionaries and found that resilience and job satisfaction significantly influenced turnover intention. These findings influence leaders in missionaries' training, preparation, and continued care to recognize the role of resilience and satisfaction in decreasing turnover and increasing longevity.

Keywords: Missionaries, satisfaction, resilience, job satisfaction

Proposal

Introduction

Resilience, or the ability to continue, is increasingly valued in the workplace as a critical quality for managing challenges. In mission organizations that invest heavily in recruiting and training, resilience is essential for reducing turnover rates. Job satisfaction is defined within theory as wants, needs, and values being met or not met (Locke, 1976), as well as the balance of personal resources and job demands that all influence the amount of satisfaction or dissatisfaction (Bakker & Demerouti, 2007). Studies across various fields, such as nursing (Bernard, 2021) and education (Liu et al., 2021), demonstrate the importance of resilience and job satisfaction in employee retention. However, limited research has explored these factors within the missionary context. Khakimova et al. (2020) showed what is known about the personal resilience of expatriates and identified what is unknown, indicating further research needs with higher-risk locations to understand expatriate resilience and success. This study addresses the challenges missionaries face, investigating whether resilience and job satisfaction, as defined above, predict turnover intention. By applying these insights, missions organizations and leaders can improve retention and longevity in challenging assignments abroad.

Research Questions

1. Is there a predictive relationship between resilience and turnover intention among missionaries?
2. Is there a predictive relationship between job satisfaction and turnover intention among missionaries?

Methodology

Research Design and Sample

A quantitative correlational-predictive approach was chosen to assess correlations. Multiple linear regression was used with SPSS (Laerd Statistics, 2020) to test whether resilience and job satisfaction predicted turnover intention. The target population, with the inclusion criteria of missionaries over 18 working abroad and based out of a U.S.-headquartered nonprofit organization, ensures homogeneity for meaningful application. Data was collected by sending a Survey Monkey link with the informed consent and survey questions to the missions directors for the four organizations where site authorization was granted. The mission's directors sent the link to their missionaries, and anonymous data was collected through Survey Monkey results.

The survey instruments included the Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003), the Job Satisfaction Survey (Spector, 1985), and Roodt's (2004) Turnover Intention Scale-6. The Connor-Davidson Resilience Scale relates to Richardson's (2002) Metatheory of Resilience and Resiliency, which measures factors that influence resilience and can give insight into personal resources. Locke's (1976) Range of Affect theory identifies factors relating to job satisfaction with wants, needs, and values. Spector (1985) created the Job Satisfaction Survey to remain shortened to focus on needs, wants, and values. Roodt's (2004) scale significantly relates to the Job Demand-Resources theory developed by Bakker and Demerouti (2007) to describe

how job and personal resources interact to increase work engagement and lower turnover intention.

Demographic data was collected to provide a profile of the sample. Data was collected from 111 missionaries.

Demographics included gender, age, years on the field, married or single, organization, and geographical region (see Table 1).

Table 1

Demographic Data Descriptive Statistics

Demo graphi c		N	%
Gende r	Male	57	51.4%
	Female	54	48.6%
	Total	111	100%
Age	<35	41	37.3%
	35-49	47	42.7%
	50+	22	20%
	Total	110	100%
Years on the Field	<3	24	21.6%
	3-5.99	23	20.7%
	6-8.99	17	15.4%
	9-14.99	20	18%
	15+	27	24.3%
	Total	111	100%
Marita l Status	Married	87	79.1%
	Single	23	20.9%
	Total	110	100%
Organi zation	1	101	95.3%
	2	2	1.9%
	3	2	1.9%
	4	1	.9%
	Total	106	100%

Geogr aphica l Area	Asia	19	17.6%
	Europe	19	17.6%
	Latin America	2	1.9%
	Middle East/Africa	37	34.3%
	South East Asia	31	28.7%
	Total	108	100%

Findings

Descriptive Statistics

The descriptive statistics for the variables are listed in Table 2. The number of participants and the range, mean, and standard deviation are listed for each variable. The mean for resilience is 75.46. Connor and Davidson (2003) found a mean of 80.4 for a random sample population in the U.S. The mean for job satisfaction was 160.18. Spector (1985) found a mean of 142.9 as an American norm. The mean for turnover intention is 13.92. Bothma and Roodt (2013) stated that a score above 18 indicates a desire to leave. Overall, the descriptive statistics show resilience levels are lower than the average American, job satisfaction is higher than the American norm, and turnover intention levels do not indicate a desire to leave.

Table 2

Variable Descriptive statistics

Variables	N	Rang e	Mea n	Std Deviati on
Resilience	111	36	75.46	7.960
Job Satisfaction	111	113	160.18	22.619
Turnover Intention	111	19	13.92	4.084

The reliability of the variables was found by determining Cronbach's alpha for each scale (see Table 3). Individually, the reliability of resilience provided a Cronbach's alpha of 0.823 for the 25 items. Connor and Davidson (2003) had a Cronbach's alpha of 0.87, while Bernard (2021) found Cronbach's alpha to be 0.77. Job satisfaction had a Cronbach's alpha of 0.911 for the 36 items. Spector (1985) also found Cronbach's alpha to be 0.91, while Bernard (2021) found Cronbach's alpha for job satisfaction to be 0.94. Turnover intention had a Cronbach's alpha of 0.708 for the six items. Bothma and Roodt (2013) found a Cronbach's alpha of 0.80, and Suárez-Albanchez et al. (2021) found a Cronbach's alpha of 0.765. Overall, the study met the minimum standards for reliability.

Table 3

Reliability

Variable	Cronbach's Alpha	N of items
Resilience	0.823	25
Job Satisfaction	0.911	36
Turnover Intention	0.708	6

Presenting the Results

A multiple linear regression was completed to test the hypotheses for RQ1 and RQ2. The dependent variable was turnover intention, with resilience and job satisfaction as the independent variables. It was found that the variables together explained a significant amount of the variance in turnover intention ($F(2, 108) = 40.853, p < 0.001, R^2 = 0.431, R^2_{Adjusted} = 0.420$) (see Tables 4 & 5). Considering the unique contribution of each variable in the

model when holding the other variable constant, resilience did significantly predict turnover intention ($B = -0.077, t(108) = -2.066, p = 0.041$), and job satisfaction also significantly predicted turnover intention ($B = -0.114, t(108) = -8.681, p < 0.001$) (see Tables 5, 6, and 7).

Table 4

Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.656 ^a	0.431	0.420	3.109	2.235

Note. ^a Predictors: (Constant), Total Job Satisfaction, Total Resilience.

Table 5

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	790.021	2	395.011	40.853	<0.001 ^a
	Residual	1044.249	108	9.669		
	Total	1834.270	110			

Note. Dependent Variable: Turnover Intention; ^a Predictors: (Constant), Resilience, Job Satisfaction.

Table 6

Coefficients

Model	Unstandardized B	Coefficient Std. Error	Standardized Coefficient	t	Sig.
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				Coefficients Beta	
1	(Constant)	37.985	3.437	11.05	<0.01
	Resilience	-0.077	0.037	-0.150	-2.06
	Job Satisfaction	-0.114	0.013	-0.631	-8.68

Note. Dependent Variable: Turnover Intention.

Table 7

Coefficients Continued

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Partial	Tolerance	VIF
1	(Constant)					
	Resilience	-0.183	-0.195	-0.150	0.997	1.003
	Job Satisfaction	-0.639	-0.641	-0.630	0.997	1.003

Note. Dependent Variable: Turnover Intention.

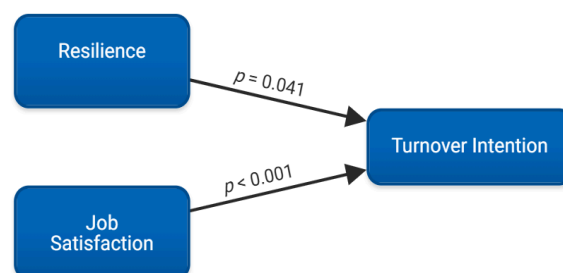
Because the regression coefficient for resilience exhibits a p -value less than 0.05, the null hypothesis for RQ1 is rejected, signifying a statistically significant predictive relationship between resilience and turnover intention. Similarly, because the regression coefficient for job satisfaction yielded a p -value less than 0.05, the null hypothesis for RQ2 is rejected, indicating a significant predictive relationship between job satisfaction and turnover intention. An equation that can be used to describe the

relationship is $\text{Turnover (y)} = 37.985 - 0.077(\text{Resilience}) - 0.114(\text{Job Satisfaction})$. Both RQ1 and RQ2 reject the null hypotheses.

In summary, resilience significantly predicted turnover intention ($p = 0.041$), indicating that higher resilience is associated with a lower likelihood of turnover among missionaries. Similarly, job satisfaction was a significant predictor ($p < 0.001$), showing that increased job satisfaction correlates with reduced turnover intention (see Figure 1). Thus, overall, the study showed that increasing resilience and satisfaction will lower turnover and increase longevity.

Figure 1

Statistical Variable Relationship with Analysis Results



Practical Implications for Missionary Leaders and Organizations

The results underscore the independent roles of resilience and job satisfaction in mitigating turnover intention among missionaries. Enhancing resilience could improve retention. In satisfaction, determining a missionary's wants, needs, and values can help the organization pair the individual with a team, location, or resources that increase fulfillment and provide support to mitigate the wants, needs, and values. The organization can also recognize personal resources and job demands in that location to determine how to strengthen the balance and ensure sufficient resources are available. This

increase in fulfillment and balance will increase satisfaction significantly, which is related to decreased turnover intention.

Contributions to Theory

The findings supported Richardson's (2002) Metatheory of Resilience and Resiliency and recognized that personal resilience resources are vital to sustaining employees in high-stress environments. Job satisfaction results align with Locke's (1976) Range of Affect theory, which states that individual wants, needs, and values are significant to an individual's remaining and decreasing levels of turnover intention. Findings also supported the Job Demands-Resources theory that Bakker and Demerouti (2007) developed, which showed that job and personal resources increase work engagement and lower turnover intention. Theoretical implications show that personal resources, wants, needs, values, and the balance between job and personal resources have value.

Relevance

When looking at leadership in action, understanding what will increase the ability of employees, students, athletes, patients, clients, or volunteers to continue despite difficulty is crucial. The theories supported in this study propose that resilience as a personal resource is vital to sustaining employees in high-stress environments. Satisfaction through the lens of wants, needs, and values showed an individual being able to describe what they want in terms of physical, mental, emotional, social, or cultural areas, then being able to determine at a deeper level what they need gives practical aspects to what brings satisfaction. Understanding the value they place on these different lists, whether high or low, allows the leader to help recognize if something cannot be met but is a lower value, which may still allow for high satisfaction. These aspects give the leader

questions to ask, steps to take, and things to implement to facilitate increased satisfaction. Leaders can also help individuals know if personal resources can balance the demands required for the situation. The organization may not be able to move that person; however, by increasing satisfaction with other coworkers, better communication, or regular supervision meetings to adjust the nature of work, this satisfaction may grow, lowering turnover intention. Leaders can adjust if there is an imbalance and find ways to increase resilience and satisfaction to decrease turnover and increase longevity. When leaders understand the job demands and know the resources, they can lead in a way that fits people into places of satisfaction.

Conclusion

This study demonstrates that resilience and job satisfaction play crucial yet independent roles in predicting turnover intention among missionaries. For organizations, this finding suggests that a dual focus on resilience training and satisfaction enhancement could support missionary retention and increase longevity.

By leadership investing in resilience-building and aligning missionaries' roles, organizations can improve satisfaction and reduce the intention to leave. Growing in the understanding of job and personal resources, along with specific job demands, gives insight for missions organizations and missionaries on ways to strengthen the ability to complete the work before them. This study, therefore, provides a roadmap for missionary organization leadership to strengthen workforce stability by focusing on these critical factors. Expanding from this population of missionaries, leaders in other fields can recognize the need to increase resilience and satisfaction to increase longevity.

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