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A mixed-method triangular approach to best practices in combating plagiarism and impersonation in online bachelor's degree programs

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A MIXED-METHOD TRIANGULAR APPROACH TO BEST PRACTICES IN COMBATING PLAGIARISM AND IMPERSONATION IN ONLINE BACHELOR'S DEGREE PROGRAMS

A dissertation submitted to
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Alice Elizabeth Johnson Stephens
Approved by
Dr. Tom Hisiro, Committee Chairperson
Dr. Jacob Messer
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Approval of Dissertation

We, the faculty supervising the work of **Alice Elizabeth Johnson Stephens**, affirm that the dissertation, ***A Mixed-Method Triangular Approach To Best Practices In Combating Plagiarism and Impersonation In Online Bachelor's Degree Programs,*** meets the high academic standards for original scholarship and creative work established by the EdD Program in Leadership Studies and the College of Education and Professional Development. The work also conforms to the requirements and formatting guidelines of Marshall University. With our signatures, we approve the manuscript for publication.
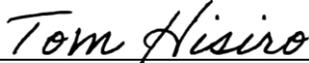
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Dedication

I dedicate my dissertation research study to my wonderful family. To my father Larry (Mike) Johnson who lost his battle with pancreatic cancer in the final semester of my coursework. I wish you were here to commemorate this honor bestowed upon me. You were my inspiration. When I was discouraged about how difficult this doctoral program was proving to be, I would see you fighting for your life. Your prognosis was a year, yet you made it two and a half years. I would tell myself that if you can battle this horrific disease, then I most certainly can endure this program. You may not be here in the flesh; however, I feel your presence in spirit.

To my mother, you have always believed in me and encouraged me to reach for the stars. I look daily at the snow globe you bought me in the middle of this program that states "She believed she could, so she did." Well, mom, we did! Thanks for all of your support. To my boys, thanks for your unconditional love and support. I have tried to live my life as someone you could look up to. The truth is, you both have lived your life as young men I look up to. I love you both forever and always. To my friends, your love, confidence, and support will never go unnoticed. I love every one of you.

Last but not least, to my wonderful husband. I thank you for putting up with me over the last few years. I have been in school most of our married life. Thanks for your encouragement and patience. Your love and belief in me helped me to persevere. I will now have more time for our wonderful adventures. I want you all to know how much I love and appreciate the sacrifices you have made for me to accomplish my goal.

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Abstract

This study examines the phenomenon of plagiarism and impersonation in online course assignments. Technological advancements, coupled with lower costs and accessibility, have made online courses and programs a practical option for higher education students. Unfortunately, the increasing online enrollment and advancing technology have allowed an increase in the opportunity for students to commit the act of plagiarism and impersonation in online course assignments, thus potentially compromising the academic integrity of online degree programs. This study examines the various practices and approaches of plagiarism and impersonation made available to students. Utilizing the systemic review of literature, the researcher compiles a list of 20 best practices in combating plagiarism and impersonation in online course assignments. A Delphi method approach is employed, utilizing the expertise of professors who teach in fully online bachelor's degree programs. The 20 best practices established through the literature review will be narrowed down to ten best practices via an ordinal ranking questionnaire using a two-round format. The questionnaire distribution occurs via e-mails. Researching professors that teach in fully online bachelor's degree programs is how the researcher will obtain the e-mails. The first-round e-mail consists of the consent form and the original set of 20 best practices. In addition, a link to the Qualtrics ranking survey will be included in the e-mail. The second-round e-mail consists of the updated 15 best practices ranked from the initial e-mail and a link to the ranking survey. After completing the second round, the establishment of the ten best practices for reducing plagiarism and impersonation in online assignments will emerge. To further validate the 10 best practices, the researcher interviews 10 professors that participated in the original Delphi study. The original consent form includes a link for the participants to access if they select to participate in the interview. After verifying the

professors' intent to participate, a consent form will be obtained. The interviews will be

conducted and recorded virtually through zoom. The recordings will be deleted once they are

transcribed. This study potentially benefits all online degree programs by establishing the ten

best practices for reducing plagiarism and impersonation in online assignments.

Chapter 1

Introduction

Online degree programs increase the potential for academic misconduct, specifically in the realm of online plagiarism and impersonation. The surge of online growth exacerbates the need for practices that will reduce instances of online plagiarism and impersonation. Online plagiarism is seen in the testing realm by communicating and exchanging ideas with someone else to acquire and search for answers online or even obtain the solutions in course resources. Impersonation online comes in such behaviors as hiring someone to take exams or quizzes and even to take the entire course. A term known as collusion describes the act of a student inviting a third-party collaborator to impersonate or aid them in an online test (Ullah et al., 2016). Plagiarism and impersonation are not new to the academic environment; however, online education has increased. The increase is forcing online faculty to seek solutions to combat these practices. Therefore, it is essential to review the literature and employ best practices to reduce the number of online plagiarism and impersonation instances. Thus, bringing credibility to online bachelor's degree programs.

Background of Study

Technological advancements, lower costs, and accessibility has made online courses and programs a practical option for students and higher education. The literature predicts an increase in online degree programs and indicates fewer on-campus students (Seaman et al., 2018; Wood, 2023). The advancement in technology has expanded cheating opportunities as well. A study of students in the field of criminal justice revealed that 51% of distance education students used information such as notes and books to assist them with their examinations (Burgason et al., 2019).

Colleges and universities have long had policies on academic misconduct. Two practices studied from a different perspective and more in-depth since the surge of online education are plagiarism and impersonation. Literature has referenced numerous causes and potential strategies for minimizing both practices (Garg & Goel, 2022; The Wiley Network, 2020; Ullah et al., 2019). Asynchronous programs seem to be an easy target for plagiarism and impersonation in online programs. Literature has shown that non-proctored settings, such as those in the asynchronous environment, contribute to difficulty identifying test takers and offer easy access to unauthorized resources during assessments (Dendir & Maxwell, 2020; Kraglund-Gauthier & Young, 2012). A wide range of sites that could potentially be used to provide students with unauthorized exam assistance was identified by Lancaster and Clarke (2017). Remote proctoring services that use cameras have been suggested as potential solutions (Lancaster & Cotarlan, 2021).

Furthermore, studies that have evaluated students' perceptions of online cheating indicate varying degrees of what they believe to be academic misconduct (Burgason et al., 2019). Moreover, many literature reviews show a need for practices to combat academic misconduct, such as plagiarism and impersonation (Alexander, 2017; Pell, 2018; The Wiley Network, 2020).

Problem Statement

Distance education is not a new phenomenon. It has become an ever-evolving process from the mid-20th century to the present. As of 2019, more than 7.3 million students were enrolled in at least one distance education or online course at degree-granting postsecondary institutions (National Center for Education Statistics, 2015). The upward trend of online enrollment increases the need for fully online degree programs. A transition that allows colleges and universities to expand and not rely so heavily on local or regional students (Wood, 2023).

While the surge of online growth benefits universities, it raises an important question in addressing and ensuring the academic integrity of online degree programs. How can the institution ensure that requirements are being completed by the students who submitted them? Two potential practices that continue to require investigation are plagiarism and impersonation. Plagiarism is defined as using someone else's intellectual or artistic creations without obtaining permission, bestowing acknowledgment, or credit (Satija & Martínez-Ávila, 2019). Plagiarism can take on several forms online: communicating and exchanging ideas with someone else to acquire and search for answers online or obtain the solutions in course resources (Wang, 2021). Impersonation in online education also encompasses several types, from hiring someone to take an exam or quiz or, in some situations hiring someone to take an entire class (Writers, 2020). There have even been situations where students' spouses have completed assessments or several courses.

Asynchronous programs, in particular, seem to invite plagiarism and impersonation since they allow students to perform their work at their own pace and in their own spaces, giving them almost complete control over how they navigate the course. Although this has proved beneficial to many students, it has made it more difficult for instructors to ensure the identities of their students.

To further exacerbate the problem of plagiarism and impersonation, students' perceptions of cheating and academic misconduct are quite flexible. For example, many students believe that looking at notes for an online test is not considered cheating. Burgason et al. (2019), for example, found that 71% of distance learning students believed behavior such as using notes or PowerPoint images during exams is not cheating compared to 46% of in-person students (Burgason et al., 2019). The same study revealed that 39% of the in-person students viewed

working on online tests or assessments with other students as low-level cheating, while 9% did not regard it as cheating. Only 6% of distance learning students viewed the behavior as low-level cheating. Surprisingly, none of the distance learning students ranked collaboration on tests or assessments as violating academic misconduct.

Ensuring academic integrity in online degree programs is challenging if the legitimacy of students' assignments and identities is questionable. In a traditional in-person setting, it is challenging enough to distinguish the legitimacy of students' assignments (specifically assignments not completed within the classroom) and becomes even more challenging online.

An examination of current practices to combat online plagiarism and impersonation is needed.

Purpose Statement

This study examines how plagiarism and impersonation can compromise the academic integrity of online courses.

Students' knowledge, skills, and dispositions are assessed numerous times throughout their academic lives in traditional in-person classes and online environments. The problem that arises in the online realm is the legitimacy of online submissions. Is the assessment being completed by the intended student? A recent survey revealed that 93% of instructors surveyed believed students are more prone to cheating online than in person. Kessler International (2017) revealed some equally alarming data on how students frequently cheat, particularly in online schools. An astonishing 86% surveyed acknowledged they cheated in some way in school, 76% copied someone else's assignment word for word, 79% confessed to plagiarizing their assignments from the internet or citing sources when appropriate, 42% admitted to purchasing custom term papers, essays, and theses online, 28% admitted to having a service take their online

classes for them, and 72% admitted to using their phones, tablets, or computers to cheat. The data are not limited to online. However, combating the issues in an in-person environment is more easily afforded. The online environment has multiple opportunities for plagiarism and impersonation.

As indicated by the aforementioned studies, it is apparent that a best practice approach must be employed in order to combat and reduce plagiarism and impersonation, thus ensuring the credibility of online degree programs is not compromised.

Research Questions

This mixed-method study examines problems of plagiarism and impersonation in online courses via a triangulation technique. Data is collected through the literature review, the Delphi study, and an interview process.

1. What practices do online faculty believe can reduce plagiarism in online course assignments?

2. What practices do online faculty believe can reduce impersonation in online course assignments?

3. What current practices do online faculty believe universities have employed to reduce plagiarism and impersonation in online course assignments?

4. In what ways do the survey and interview data align with one another?

Projected Sample or Population

The population for the study will be a purposeful sample of 125 professors who potentially teach in fully online bachelor's degree programs at multiple institutions. E-mails will be sent to these professors asking for their participation. In addition, to further validate the study, 10 professors will be invited to participate in interviews regarding the results from the Delphi

Study. Further questioning regarding their universities' practices to reduce plagiarism and impersonation in online course assignments will be discussed.

Methods

The triangulation mixed-method research utilizes a phenomenological approach that seeks to describe the essence of a phenomenon by exploring it from the perspectives of those who have experienced it (Neubauer et al., 2019). The study will incorporate that approach by gathering expert data that can contribute to the increasing academic integrity of online bachelor's degree programs by compiling a list of 20 best practices for reducing online plagiarism and impersonation. In addition, a purposeful sampling technique will allow the researcher to identify a population that affords in-depth and detailed information about the phenomenon under investigation (Statistics Solutions, 2021). Ten professors who participated in the Delphi study will be randomly chosen to participate in an interview to disclose their perceptions of the study's results and to reveal practices their universities currently employ to combat online plagiarism and impersonation. The best practice list converged with the faculty interview process will align the study.

A list of professors who teach in a fully online bachelor's degree program will be compiled from a thorough search of online degree programs offered in the United States. A Delphi method approach will be employed upon completing the list of professors. The Delphi method utilizes the collective expertise of groups within their field of study and employs a six-step process (Miller et al., 2020). First, the identification of the research problem, followed by an extensive literature review, and then the questionnaire development. Next, the experts will complete the questionnaire in a two-round format. The final compilation of the ten best practices for reducing online plagiarism and impersonation will be produced.

After the literature review and the list of the 20 best practices are completed, a measurement scale will be created using an ordinal ranking system questionnaire to analyze the degree of agreement related to the identified order of variables. Next, the professors will be asked to rank the 20 best practices from most effective to least effective regarding their potential to reduce online plagiarism and impersonation. A completion period of two weeks will be communicated in the e-mail, along with directions on how to complete the survey. Once the first round's results are calculated, the researcher will analyze the data and compile a new list of the top 15 best practices for combating plagiarism and impersonation ranked from the professors' expert opinions. The second round will be e-mailed in the same format as the initial round. After receiving all the participant's responses from the second round of the ranking scale questionnaire study, the researcher will compile the final list of the ten best practices that reduce plagiarism and impersonation. To further validate the study, the researcher will interview 10 randomly selected professors that participated in the completed Delphi study. The researcher will invite all the Delphi study participants to participate in the interview. The first 10 participants to respond and agree to the interview will be chosen.

Limitations/Delimitations

This study involves an extensive literature review that seeks to gather relevant information in establishing the top ten best practices for reducing online plagiarism and impersonation, and it does have some limitations. The first limitation is that of potential researcher bias in the creation of an ordinal ranking questionnaire.

As the initial sample size is only 125 participants, the extent to which results can be generalized to other populations is another limitation. Additionally, there is a chance that the participants may return the questionnaire in the first round but fail to continue in the second

round, consequently causing the second-round questionnaire sample size to be smaller and further compromising the generalizability of the results to a wider population due to sample size. Issues of anonymity and confidentiality could be problematic, particularly if the participants feel their behaviors, choices, or beliefs may be under scrutiny. The study is limited to 50 fully online bachelor's degree programs. The last potential limitation is the number of faculty interviewed. The 10 interviewees are randomly selected and could potentially introduce a population external validity; the results and conclusions could be limited to individuals with similar or even the same characteristics.

<div align="center">Significance of the Study</div>

The significance of this study stems from the need to maintain academic integrity within the online environment. Academic integrity has long been a concern for educators, and the online setting has only increased those concerns. The growth of online degree programs, while beneficial, does generate significant issues that could potentially harm the academic integrity of online education. Two potential practices requiring investigation in this study were plagiarism and impersonation. Developing a compilation of best practices to combat plagiarism and impersonation from expert online professors could prove beneficial in reducing both practices.

The data collected in this research study can contribute significantly to methods and practices that will potentially reduce plagiarism and impersonation in online education. Furthermore, online educators can adopt some or all of the 10 best practices established in this study to help maintain academic integrity in their online classes or degree programs. Additionally, this study will benefit students who want to attend online programs that ensure academic integrity. Last, by establishing best practices, higher education online benefits from recruiting and retaining students and faculty.

Chapter 2

Review of Literature

Chapter 2 comprises a review of the literature that supports this study. The expansion of online degree programs and technological advances have increased cheating opportunities in the online realm. This chapter provides valuable information and background on two particular areas of cheating, plagiarism and impersonation. Moreover, the chapter affords details on how the academic integrity of online courses can be compromised because of plagiarism and impersonation.

This chapter is divided into five sections. The first section highlights the phenomenon of plagiarism. Specifically, this section discusses plagiarism, and the methods and instruments students use to plagiarize. The second section focuses on aspects of impersonation, such as what is regarded as impersonation in online programs and how students engage in the practice. The following section focuses on why students feel compelled to plagiarize and commit or uphold impersonation, the statistical occurrences, and the increased usage of plagiarism and impersonation online. The fourth section examines methods for reducing plagiarism and impersonation regarding online course assignments while ensuring the academic integrity of online courses. The concluding section encapsulates the literature review by establishing the 20 best practices for reducing plagiarism and impersonation. The best practice list will be further researched and narrowed down through the Delphi Study. After completing the Delphi Study, a final list of the ten best practices for reducing plagiarism and impersonation will emerge.

Plagiarism Phenomenon

Traditional plagiarism involves representing another's writings, thoughts, or ideas as their own. One typically thinks of plagiarism strictly in the field of writing. However, enhanced

technology has heightened the use and expanded the types of plagiarism, affording students more opportunities to cheat. Students who may have previously never contemplated plagiarism are now being pursued by e-cheating companies online. A study conducted by Amigud (2020) examined engagement approaches of contract cheating services targeting students on Twitter. The study demonstrated that contractors were triggered to engage and compete in an attempt to gain a contract within minutes of posting a social media message offering payment for the completion of academic work.

The forms of plagiarism discussed in this study include the previously mentioned e-cheating, contract cheating, collusion, utilizing course resources, and all forms of online plagiarism. Researchers have defined e-cheating, also known as digital or cyber cheating, in many ways. However, the definition coined by Philip Dawson in his book, Defending Assessment in Security in a Digital World, will be the preferred definition for this study. Dawson defined e-cheating as cheating that uses or is enabled by digital technology (Dawson, 2021, p. 10). Digital technology includes an array of things; hardware such as computers, smartphones, smartwatches, calculators, and earpieces. Additionally, software that enables automated homework help to auto-paraphrasing tools is used. Several of these technologies can be used interchangeably for all the aforementioned types of plagiarism discussed in this study.

Devices used for cheating are becoming so prevalent that they can be purchased from online stores. For example, if a person Googles cheating calculators, various sites surface. The first one listed on the google search was the Exam Cheat -Text Messaging Calculator-Ruby Calculator Ultimate Edition. It is reportedly capable of storing up to 300,000 words and 30 separate files, texting to both iOS and Android devices, exchanging text messages with other Ruby Calculators, exchanging text messages with PCs and Macs, and even searching the internet

(Amazon, 2022). In addition, Googling earpieces used for cheating brings up a site called monorean which markets high-tech cheating gadgets aimed exclusively at cheating on exams without getting caught (Monorean, 2022). While these devices are not necessarily new, Lathrop and Foss named many of the same devices in their book Student cheating and plagiarism in the internet era back in 2000 and even stated how they have become the new *cheat sheets* for tests (Lathrop & Foss, 2000). Still, technological advances have made such devices increasingly more complex to detect. Most of these devices can be utilized in traditional face-to-face settings, albeit it is easier to detect such devices in person.

Raines et al. (2011) surveyed students' definitions of cheating in the online learning environment. The survey answers established three themes. The themes were breaking the rules, dishonesty, and not using your own brain. The response that pertained to e-cheating specified the use of a memory calculator. The study also had several responses regarding contract cheating, which will be discussed next. The contract cheating responses included using someone else's work to get a better grade, using unconventional means like buying answers or assignments, and utilizing information from non-ethical standards to pass a course, test, or assignment.

Contract Cheating regarding plagiarism involves the purchasing of assignments from a third-party source. The concept of paying someone to do your work is not a new phenomenon, although technological advancement has heightened access to contract cheating. Contract cheating has become a billion-dollar industry affording students multiple options for payment while providing anonymity. Dawson (2021) explicitly mentioned cryptocurrencies and privacy-enhancing technologies like encryption (pp. 47-48). According to an article in cybernews, cryptocurrencies are among the most widely used anonymous payment methods online

(Mikalauskas, 2020). Several other options are mentioned in the article that indicates the ease of anonymity in online purchasing.

A simple Google search for paper writing services reveals numerous opportunities for students to engage in contract cheating. After researching ten websites listed in the book *Student Cheating and Plagiarism in the Internet Era*, written in 2000, six are still used today, even after being revealed in a book about cheating and plagiarism. In addition, Research in the Higher Education Journal article disclosed that a Facebook site called Moe's Coursework Completion Services was grossing up to $21,000 per month for writing assignments for high school through post-graduate students (Norris, 2019).

Furthermore, an investigation prompted by homework help sites requiring the student to sign a terms-of-service agreement and honor code forbidding academic cheating revealed that agreements were rarely enforced (Pang, 2021). The failure in enforcing agreements appeared to be the case with the honor code from Chegg, a popular contract cheating site. A study conducted by Lancaster and Cotarlan (2021) targeting Chegg revealed a growth in student cheating during the pandemic with a coinciding increase in the market value of their company. Ironically, an article published Inside Higher Ed about Chegg being accused of cheating investors revealed a class-action lawsuit alleging the company's executives misled investors about the growth during the pandemic. As a result, stock prices fell by half following the third-quarter earnings release on November 1, 2021 (Redden, 2022).

An article published by *Inside Higher Ed* detailed the account of an assistant professor of business at Chapman University suing John Doe students for copyright infringement. The professor initially contacted Course Hero, requesting that they remove the exam questions. However, Course Hero refused to remove any information without a subpoena (Flaherty, 2022).

The article stated that the only way to get a subpoena was to have a case pending. Professors own the copyrights to their original class material. Course Hero states they comply with takedown requests; however, the professor stated several test questions were still listed on Course Hero when the article was released. Course Hero had yet to get the subpoena but claimed they always follow the law and will do so in this case.

Most professors welcome collaboration among students, even assigning group projects. Nevertheless, they do not uphold passing another's work as their own. A study about collaboration, collusion, and plagiarism in computer science coursework defines collusion as an unpermitted group activity (Fraser, 2014). This unpermitted group activity is evident in the 2012 Harvard cheating scandal. An article written by Engel and Gerben (2013) detailed the account of the scandal and the fine line between collaboration and a take-home test. The test was intended to be an open book, note, and internet friendly, yet they were not permitted to discuss the exam with writing centers and resident tutors. The scandal was unveiled when a professor discovered several essay responses shared the exact phrase. While the scandal resulted in 70 students being forced to withdraw, the scandal did compel schools to evaluate methods to reduce the number of students who may unintentionally break from ethical collaboration to collusion. Consequently, students encounter new technologies that make the fine line from collaborating to collusion harder to ascertain.

It is evident in a traditional classroom setting when and if students utilize course resources such as PowerPoints, notes, books, or computers to find answers to their assignments. It is not as easy to detect the use of course resources in an asynchronous online environment. The aforementioned survey conducted by Raines et al. (2011) had several responses relevant to utilizing course resources. The responses that exclusively pertained to course resources were

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using materials that the professor prohibited in completing assignments, completing coursework, or taking a test in a way not defined by the professor, getting answers in advance, and the previously mentioned storing them in a memory calculator.

Aspects of Impersonation

Impersonation involves a student hiring a company or individual to complete an assignment, take a quiz, test, or even in some cases, take the entire course. A review of the literature revealed how Apampa et al. (2010) classified impersonation threats into three types. The three types were type A, B, and C. Kinoti (2015) expanded upon the three types by adding a fourth classification, known as type D. Kinoti (2015) detailed the following types: Type A impersonation threat occurs when an invigilator colludes with fraudulent students allowing the fraudulent act. Type B impersonation threat ask the question "is the student really whom they say they are?" Type C impersonation threat occurs when the correct student logs in allowing the fraudster to continue with the test or assignment on their behalf. Type D occurs when there is lack of user information such as their biometrics.

A literature review from Ullah et al. (2019) identified howstudents shared their access credentials. Credential sharing using cell phones, instant messaging, and desktop sharing were three mentioned. Ullah et al. (2016) discussed several types of impersonation intrusion and non-intrusion attacks. The intrusive attack types listed included students impersonated by intruders and tutors impersonated by intruders/students. The non-intrusive were categorized as non-collusion and collusion. Actions like copying from the internet, books, notes, and general plagiarism were identified as non-collusion planned cheating. A collusion attack was further categorized as impersonation and abetting. The study stated that impersonation attacks occur when a third-party impersonator takes on an online examination. Abetting was described as a

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legitimate student taking the examination; however, the student receives help from a third party. The third party can be sitting next to the student, specifically in the absence of invigilation. Students may even solicit help from third parties via smartphones, instant messaging, e-mails, and high-tech earpieces. Jain (2021) described two instances of impersonation that occur: impersonation before and during the exam. It is relatively common to attain authenticity before taking the test, though it is less common in the middle of the exam. Consequently, allowing the impersonator to complete and submit the exam.

Norris (2019) mentioned an online site called Takemyonlinclassnow.com that assists students in finding and negotiating services to complete a class on behalf of the student. The site guarantees an A or B is achieved depending on what the student conveys. The money is held in escrow until the grade the student was promised is attained. There were ten providers listed with customer satisfaction ratings. Of the ten listed, six were in the United States.

Why Students Plagiarize and Commit or Engage in Impersonation

A qualitative study by Malik et al. (2021) investigated the determinants of academic plagiarism. The study involved 267 online university students and revealed assorted reasons students plagiarize. The study established five categories: a lack of awareness and poor understanding of plagiarism, weak management of the education system and institutional issues, academic pressures and barriers, personal and psychological reasons, and plagiarism becoming a trend. Another study involving why students plagiarize conducted by Šprajc et al. (2017) revealed that information and communication technology are the most apparent cause of plagiarism. Factors mentioned in the study included social factors such as living in the digital age, daily internet exposure, and internet inclusion in the academic environment (Šprajc et al., 2017). Additionally, Garg and Goel (2022) revealed the copy-and-paste culture of the internet,

lack of knowledge regarding plagiarism, and poor writing skills among the primary motives for plagiarism.

According to Garg and Goel (2022), students engage in impersonation due to weak identity controls, the anonymity of online users, and the lack of invigilation. Additionally, a study conducted by Verhoef and Coetser (2021) pertaining to data generated by a student forum on the pandemic and emergency remote learning indicated several reasons for dishonesty during an online assessment. The reasons included the availability of online content, students feeling overwhelmed and stressed, lack of monitoring, lack of time management, the recycling of assessments year after year, academic inexperience, and the struggle with technology.

Jurčić et al. (2020) studied 104 Zagreb School of Economics and Management students to link the Fraud Triangle concept to cheating habits in an accounting course. As described in the study, the fraud triangle, developed by Donald Cressey, is a theory that explains why people act in an unethical way. Three factors comprise the fraud triangle: Opportunity, Pressure, and Rationalization, all of which were present in the study. The results concluded that every fourth student made unethical choices in the accounting class resulting from pressures for enrollment eligibility for a higher year, satisfying grade average, and parental pressure to attain higher grades or finish college. The lack of control in online tasks, inadequate control during examinations, and opportunities from using new technologies were mentioned. The students rationalized their behavior by stating how the educational system or/and professors had too much learning material, they were not confident in their knowledge, and they did not have enough time to prepare.

Statistical Occurrences of Plagiarism and Impersonation Online

A study involving cheating was conducted by McCabe (2005) involving 63,700 undergraduate students and 9,250 graduate students from 2002 to 2005. The survey required the student participants to self-report. The results revealed that one in ten students admitted to one or more instances of copying, using crib notes, and helping someone else cheat on a test. The reported electronic or digital device use as an unauthorized aid during a test was relatively low. However, an updated version of the McCabe survey with 840 students across multiple college campuses was conducted in March 2020, marking a 20% increase in the use of electronic resources (International Center for Academic Integrity, 2020). McCabe's original research and follow-up studies indicate that more than 60% of university students freely admit to some form of cheating, with plagiarism and impersonation comprising many ways.

A survey conducted by Kessler International (2017) revealed some staggering statistics regarding plagiarism and impersonation.

1. Seventy-six percent admitted to copying someone else's assignments word for word.

2. Seventy-nine percent of the students admitted to plagiarizing their online assignments or citing sources when appropriate.

3. An astonishing forty-two percent indicated they had purchased custom term papers, essays, and a thesis online.

4. Twenty eight percent of students admitted they had a service to take online classes.

5. Seventy-two percent had used their phone, tablet, or computer to cheat in class.

Goedl and Malla (2020) conducted a study to identify the cause of a noticeable grade discrepancy in the online course versus the traditional in-person section. The study examined the differences between proctored and non-proctored exams in online courses. The significant results

showed substantial inflation when the exams were not proctored. The statistical occurrence in course one for A's was 63% for unproctored and 35% for proctored. Course two also showed a significant difference; the statistical occurrence of A's was 36% for unproctored and 12% for proctored.

<p align="center">**Plagiarism and Impersonation Reduction Methods**</p>

Integrity Policy

Incorporating an integrity policy is a vital first step in reducing online plagiarism and impersonation. Studies have shown that having an integrity policy that universities promote and adhere to reduces the desire of students to cheat and potentially eliminates the students who engage in dishonesty unintentionally (Mellar et al., 2018). The policy should establish a clear academic standard and potential consequences for cheating such as impersonation and plagiarism. Honor Codes, integrity pledges, and stand-alone courses for academic ethics training were discussed in a study by Garg and Goel (2022).

Clear and Concise Definitions

A constructive yet straightforward reduction method worth mentioning is providing a clear and concise definition of plagiarism and impersonation and its importance in maintaining academic integrity. Students must be aware of plagiarism and impersonation and the possible consequences of such acts. Students' perceptions of what they deem acceptable compared to what the professor deems acceptable can be far-reaching. Streamlining the definitions of plagiarism and impersonation can prove beneficial in bridging the gap between students and professors. A Canadian study focusing on how contract cheating is addressed in policy documentation of colleges found several significant findings. A particular finding relating to clear and concise definitions was the lack of specific terms and the use of incomplete definitions

or definitions that overlapped with other categories of academic misconduct, such as plagiarism, inappropriate collaboration, and academic fraud (Stoesz et al., 2019). The lack of clear and concise definitions can confuse students and academic staff, making it difficult to follow best practice recommendations.

E-Tutorial

Benson et al. (2019) developed an Academic Integrity E-Learning tutorial. It was first used as a required tool for students who had violated an academic integrity policy. The new focus was on preventive education. The study aimed to improve the content and design of the academic e-learning tutorial and its effectiveness in terms of students' knowledge about integrity and misconduct. A study conducted by Muhammad et al. (2020) concluded that institutions should clearly define academic integrity. Ethical policies should be implemented so that the stakeholder can strictly adhere to the code of conduct in the e-learning environment. Two experimental studies that measured the baseline rates of cheating found that the rate of cheating decreased by 56% simply by adding a stern warning (Corrigan-Gibbs et al., 2015). Incorporating a required pre-task E-tutorial before starting an e-assignment may prove beneficial in combating online plagiarism and impersonation.

Honor Pledge

Another approach to clarifying plagiarism and impersonation is creating an honor pledge. Norris (2019) stated that a literature review indicated a universally acceptable definition of academic dishonesty does not exist. For instance, a professor from one university teaching online may declare that using outside resources during an exam is cheating. In contrast, another professor at the same university may permit external resources. A review of the literature found that an honor code could be beneficial in reducing academic dishonesty. The study implemented

an honor code coupled with pedagogical strategies. The post honor code questionnaire revealed that nearly 86% found the honor code relevant and more than 92% found it encouraged the five investigated fundamental values of academic integrity (Raman & Ramlogan, 2020). The five fundamental values of academic integrity are honesty, trust, fairness, respect, and responsibility. Norris (2019) provided an example of an honor code established by a southern Christian university. The codes listed included:

• Unauthorized collaboration on any work for the course.

• Using unauthorized aids of any kind.

• Allowing another student to copy any portion of one's work.

• Viewing or copying the work of another student during an examination.

• Receiving or providing information to another person during an examination without the specific approval of the professor.

• Stealing, buying, receiving, selling, or transmitting coursework of any kind

• Submitting without permission of the previous and current faculty members any work previously submitted as part of an academic requirement for any course at any institution.

• Taking the place of another student during an examination or allowing another student to take an examination or complete coursework for another.

• Sabotaging another student's academic work.

• Soliciting another student to complete a course, an individual assignment, or an Examination.

• Facilitating or helping other students to commit any act of academic dishonesty.

Proctoring

As previously stated, plagiarism takes on many forms. The first form mentioned was e-cheating which this study acknowledged is cheating that uses or is enabled by digital technology. Data from an article in *Inside Higher Ed* revealed that more than 30% of all test takers bring an unpermitted resource to their exam (Morgan, 2018). The same article discussed using proctors to monitor the exam and identify permittable and prohibited materials. *Inside Higher Ed's* (2022) Survey of Faculty Attitudes on Technology 2019 revealed that sixty percent of approximately 2,000 respondents believed academic fraud occurs more frequently online than in-person courses. Colleges heightened the usage of proctoring systems and other technology tools during the onset of COVID-19 and the quick move to remote instruction (Lederman, 2020). If proctoring is preferred when the majority is online, then perhaps proctoring should be considered a best practice in all aspects of online learning. A study of high-stakes exams in two online courses with identical structure, content, and assessments found that after proctoring, there was a decline in the average performance in both courses (Dendir & Maxwell, 2020). The results suggested that online proctoring is a valuable tool to mitigate academic dishonesty in online courses. Daffin Jr and Jones (2018) state a justifiable need to proctor at least one online exam during the semester. There are various types of online proctoring available for online education. A literature review from Holden et al. (2021) released a review of current research on academic integrity in higher education. The review identified three general types of online proctoring: live online proctoring, web video recording, and video summarization. Several areas to consider when choosing to proctor are how it integrates with your Learning Management Systems (LMS), third-party integration, the ease of use for faculty and students, and customization factors for faculty (Honorlock, 2020).

Live Proctoring

      Live proctoring can be implemented through Zoom or even LMS with built-in platforms for collaboration. This type of collaboration allows the professors or chosen invigilators to observe the students in real-time via students' webcams and microphones as they complete the test, quiz, or assignment. This particular type of proctoring is the most closely related to an in-person class and would be most beneficial for synchronous settings. However, it would be rather time-consuming and difficult to use in an asynchronous setting unless a proctoring service is used to schedule the exams; however, this can be rather expensive. Western Governors University (WGU) is a fully online university that requires all its students to be proctored while taking their assessment(s). Before 2019, WGU provided webcams for live proctoring online; however, current students must provide their own, but they must meet the external webcam minimum specifications as stated on their website (Western Governors University, 2022). An alternative is to schedule in person at a local proctoring center.

Web Video Recording Proctoring

      The next type of proctoring is web video recording. Web video monitoring records the student throughout the entire exam or assignment and can be observed later by the instructor (Holden et al., 2021). Detection software can be used that signals any questionable activity that can be viewed later. This software allows the instructors to view the entire exam or portions of the exam. Viewing part of the exam is more conceivable with the potential time constraints of instructors and invigilators. This system does not guarantee that all cheating behavior will be detected with this system.

Video Summarization Proctoring

Much like web video monitoring detection software, video summarization uses artificial

intelligence to detect cheating events. The students are recorded via their webcam, and the video

summarization program generates either keyframes (a compilation of images obtained from the

video) or video skims (segments obtained from the video) that detect potential cheating

behaviors (Holden et al., 2021). *Inside Higher Ed* (2022) conducted a live webinar on creating

authentic online assessments that promote academic integrity. Several best practice

recommendations were mentioned in the webinar; however, the one relevant to video

summarization was Honorlock. Honorlock is an online proctoring service that records students'

videos and screens. A scannable QR code from the webinar divulged several resources on

creating authentic online assessments that promote academic integrity. One of the resources

included described Honorlock as using artificial intelligence (AI) to alert proctors to any

behavior requiring them to intervene (Inside Higher Ed, 2022). It should be mentioned that

Honorlock can only be used within the Google Chrome browser. Dadashzadeh (2021) described

a type of automated proctoring known as Proctortrack that could potentially reduce or even

eliminate the labor costs associated with proctoring. Proctortrack is a version of AI-based and

blended live proctoring that continuously verifies the identity of online test-takers via enhanced

detection algorithms in real-time (Proctortrack, 2020).

An article written in December of 2021 detailed how automated proctoring software that

is intended to flag cheating has been known to flag normal test-taking behavior (Kelley, 2021).

Almost 3200 people were flagged during the October 2020 bar examination by ExamSoft, a top

proctoring company. After further human review, only 47 examinees were sanctioned.

Additionally, in December 2020, the United States Senate requested detailed information from

three top proctoring companies. ProctorU, one of the largest online proctoring companies, announced it would no longer sell a system based solely on artificial intelligence; instead, it would be video captured and analyzed by humans (Jaschik, 2021).

Similarly, R. Siddharth (personal communication, July 7, 2022), the co-founder of Proctortrack, explained in a webinar on July 7, 2022, how efficient their AI is in live proctoring. He conveyed their AI as one of the most advanced proctoring solutions available, allowing students to take exams on-demand without scheduling. Proctortrack offers a real-time hybrid model that couples human proctors with AI-enhanced auto proctoring. Furthermore, Proctortrack was described as being fully customizable through the LMS. Siddharth additionally described a new type of proctoring known as Proctor DIY, which allows faculty to Zoom up to 25 students simultaneously.

In-Person Proctoring

Another type of proctoring to mention, though it may prove more difficult for online programs, is in-person proctoring. Many online students pursue degrees that are a significant distance from their homes. Therefore, universities need systems for students to set up on-campus testing or a local proctoring testing center (Dendir & Maxwell, 2020). As previously mentioned, WGU allows for alternative scheduling of in-person proctoring if students choose not to utilize the webcam proctoring system.

Authenticity

The Higher Education Opportunity Act (HEOA) (2008) established that specific requirements be met in accordance with distance education or correspondence education in accordance with the authenticity of the student. The requirements included a secure login and passcode, randomly generated personal questions or proctored examinations, new identification

technologies as they become widely accepted, and clarifying that institutions should not use or rely on technologies that interfere with student privacy (University of St. Francis, 2010). The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) is an accrediting body for degree-granting higher education institutions in southern states with standard requirements (Southern Association of Colleges and Schools Commission on Colleges, 2017). The SACSCOC upholds the HEOA requirements by establishing their related standards/requirements. An institution that offers distance or correspondence education shall (a) ensure that the student registered for the course or program is the same student participating and completing the course or program, resulting in receiving the credit, and (b) has a written protocol set in place for protecting the privacy of students enrolled in the distance and correspondence education courses or programs, and (c) require that students be notified in writing at the time of registration, or enrollment, of any potential additional student charges associated with verification of student identity (Southern Association of Colleges and Schools Commission on Colleges, 2020).

Authenticity Through Passwords and IDs

The basic and most inexpensive authentication process involves using a username and password to access the course content. Still, this process falls short. It does not address impersonation or collusion in online courses (Norris, 2019). Jain (2021) proposes a 3-point candidate authentication process to prevent online test impersonation. The process includes asking for an approved ID card, sending a one-time password on a previously registered mobile number, and matching the person on the screen with the previously shared picture. Another approach to preventing impersonation in online tests is to use random identity authentication via AI-enabled facial recognition. A literature review revealed a study that explored the rationale for

using student authentication and authorship-checking systems. The study conducted by Mellar et al. (2018) investigated the teachers' perspectives on the prevalence of cheating and plagiarism in e-assessment from two universities trialing the Trust-based e-assessment System for Learning (TeSLA). The TeSLA system involves authentication using a variety of instruments (face and voice recognition and keystroke dynamics) and authorship (forensic analysis for writing style and plagiarism detection). The results indicated that assuring effective authentication was seen by many teachers as a barrier to the increased use of e-assessments. In addition, authorship checking, specifically copying and pasting from the web, ghostwriting, and plagiarism were all reported as widely prevalent, thus increasing the need for authorship checking even more.

Biometrics Physiological and Behavioral

Biometrics is an evolving technology that is used for security enhancements in a variety of applications. A study on biometrics terms and definitions identified biometrics as automated methods of recognizing an individual based on measurable biological and behavioral characteristics (Micheli-Tzanakou et al., 2021). The basic concept uses human biological characteristics to manage access to information. Most people use physiological biometric authentication daily when accessing mobile phones through fingerprint or facial recognition. Many studies have used biological characteristics such as facial and fingerprint recognition to validate student identity (Holden et al., 2021; Mellar et al., 2018). For example, a study conducted by Okada et al. (2019) used seven different types of identifiable biological characteristics and four behavioral characteristics. Biological characteristics include face 2D, 3D, fingerprint, hand, eye, skin, and DNA; behavioral characteristics include voice, keystroke, signature, and pulse. While biometrics is a suitable method of authentication, it is not foolproof. Impersonation is still plausible with biometrics. The student can use their biometrics to open the

test, and the impersonator can finish the exam. Also, the use of facial recognition in authenticating students' identities may not always be reliable due to variabilities in lighting, facial hair, and facial features (Holden et al., 2021).

Bimodal Biometrics

As defined by Adetunji et al. (2018), Bimodal Biometrics uses more than one biometric feature in the recognition of a person, such as the combination of fingerprint and face recognition. Using more than one biometric feature can be more effective in opposing all impersonation threats (Kinoti, 2015). A study conducted by Adetunji et al. (2018) revealed that bimodal accuracy was 94.52% compared with keystroke accuracy of 92.025 and facial recognition accuracy of 92.58. The study implied that combining the keystroke and facial recognition outperforms the single models of keystroke and facial recognition.

Lockdown Browsers

Garg and Goel (2022) describe a lockdown browser as a means to lock the online exam window until the online test is submitted. Integrating a third-party tool with the e-learning platform or Learning Management System (LMS) enhances online security by temporarily disabling access to applications such as messaging, screen-sharing, virtual machines, and remote desktops on the same device as the one being used to take the assessment (Holden et al., 2021). Although, students can impede security by sharing their credentials with a third party via e-mail or a mobile phone (Ullah et al., 2019). Additionally, students can use their phones or other handheld devices to search for answers. Respondus Lockdown Browser integrates well with several LMSs, such as Blackboard, Canvas, and Moodle.

Respondus Monitor

A type of automated proctoring device known as Respondus Monitor can be used along with the Lockdown Browser. In addition, students are required to use a webcam to record themselves during the exam. The major advantage of utilizing this lockdown browser and web recording combination is that students do not have to pre-schedule testing and still be proctored (Stevens et al., 2020). Teclehaimanot et al. (2018) compared students' test scores in a Midwest public university using three different testing environments. Respondus Monitor was used for non-proctored recorded online testing, Respondus LockDown Browser was used for the non-proctored lockdown online testing environment, and the non-proctored online testing environment used Blackboard Test and Survey tool. The study concluded by recommending that a technology-based, non-proctored testing tool, such as Respondus Monitor, be used for high-stake exams if human invigilation is impossible.

Anti-plagiarism Tools

There are numerous anti-plagiarism tools in use today. Some standard anti-plagiarism tools used with LMSs are SafeAssign, Turnitin, and CopyCheck. However, what comprises an anti-plagiarism tool? The tools are embedding text-matching software (TMS) used to read an essay or paper, examining the likelihood of plagiarism. A report is generated that reveals exact or similar matches to other documents. In addition, the document has various highlighted sections referencing information about the potential source. Finally, a percentage score is generated, depicting the amount of plagiarism. Typically, the higher the score, the more likely it contains plagiarized material. The need for TMS software has been established in several studies (Awasthi, 2019; Eaton et al., 2020). However, TMS alone is not sufficient in reducing the instances of plagiarism. Implementing TMS complemented by an explicit academic integrity

education and human support for staff and students would deliver the best results (Eaton et al., 2020). Norris (2019) recommends providing feedback to the student who allegedly committed the plagiarized assignment. First, investigate whether the plagiarism was intentional or unintentional; after clarifying the situation, proceed with possible sanctions. It is critical for faculty that students know such actions will have consequences.

Plagiarism can also be combatted through less invasive means such as getting to know students early in the course, requiring up-to-date research, requiring revisions of the work, requiring the students to keep a journal as to how they arrived at their findings, and varying the audience by making students write papers for different audiences (Bart, 2011.) Other approaches worth mentioning in reducing plagiarism are articulating students' prior knowledge expectations, requiring an annotated bibliography before the assignment's due date, and collecting the writing in stages (Moore, 2019).

Online Committee

Another possible solution to reducing plagiarism and impersonation is the development of a committee whose sole purpose is to educate online students on the details of online academic misconduct, such as plagiarism and impersonation. Norris (2019) recommended that instructor mentors (IMs) be assigned a team of adjunct faculty to ensure the academic standards are met. Using an instructor mentor is the type of approach used at WGU. A mentor would call weekly, checking on the student for any possible questions or concerns online education. Malik et al. (2021) established an Awareness, Support & Prevention (AS&P) model for combating plagiarism that could be implemented in an online committee. Specific steps could be established based on the model that could benefit plagiarism and impersonation.

Mandatory Class

Implementing a class that introduces all aspects of online education could prove beneficial. The class would be mandatory for all online classes. It would detail all of the technical aspects of the course coupled with academic integrity, placing a heavy emphasis on impersonation and plagiarism. Authorship and intellectual property law should be integrated into education (Javaid et al., 2021). The class should also cover using the LMS system and any related plagiarism tools. The class should have graded assignments that students must complete and pass like any other higher education class (Javaid et al., 2021).

Stricter Punishment

Academic institutions and faculty members must demonstrate a genuine intolerance for academic misconduct and take the proper actions to address any occurrences. A study conducted by Cerimagic and Hasan (2019) revealed that 96% of exam invigilators found no reason to report an act of cheating because there were no real consequences for the student. The invigilators were required to prove the student was indeed cheating. Moreover, the study found that 91% of exam invigilators in the survey believed cheating is so prevalent because penalties for student cheating are not tough enough.

Stricter Time Limits

Time is a factor in online tests, especially when comparing proctored to non-proctored exams. Daffin Jr and Jones (2018) revealed that students earned higher scores on non-proctored exams and yielded a time that was twice as long as the proctored exams. Additionally, Hylton et al. (2016) found a statistically significant difference in the amount of time for the non-proctored group to complete the online exams versus the proctored group. The difference indicated that students spent more time looking up answers when non-proctored. The proctored group revealed

significantly less time to complete the online exams. Burgason et al. (2019) suggested techniques such as requiring frequent, brief, and time-intensive exams as a best practice in reducing cheating in the online environment. The literature recommends that online test open and close simultaneously (Mate & Weidenhofer, 2022; Verhoef & Coetser, 2021). The reasoning was so that students could not share questions and answers. Adjustments for disabilities based on the individual were recommended.

Assessment Design

Increasing the difficulty of online exams and allowing open notes/books have been suggested in the literature (Daffin Jr & Jones, 2018; Howard, 2019; Norris, 2019; Stowell, 2015). Utilizing permitted sources to discover answers to more complex questions allows for a deeper understanding of the material while decreasing the need to cheat. Another design element mentioned in the literature is designing questions that are difficult to replicate within assessments. The questions should be more scenario and application-based rather than strictly knowledge-based (Verhoef & Coetser, 2021). Methods worth introducing include but are not limited to digital storytelling, online individual or group presentations, videos, wikis, and reflections (Mate & Weidenhofer, 2022; Verhoef & Coetser, 2021).

Practical approaches found in literature worth considering when designing assessments include rebalancing low-stakes vs. high-stakes assessments, providing multiple attempts, creating pools of questions, randomizing questions, and answer choices, setting the exam up to show one question at a time, and limiting feedback until the exam is closed (Budhai, 2020; Stanislaus State, 2021; Verhoef & Coetser, 2021). Also, please do not use the publisher's test banks verbatim; it makes it easier for students to find them in a search. Norris (2019) described that a typical exam containing 25 to 50 questions should have a database collection of hundreds to

thousands, making it doubtful that students will receive the exact exam version. Also, break up high-stakes exams into short and frequent low-stakes ones (Darby, 2020). This method allows students to examine their progress.

Detailed Instructions

Regarding plagiarism, students must be taught how to use sources properly. A simple "do not plagiarize" does not entail all that is involved. Proving detailed examples of summarizing, paraphrasing, and direct quotes could prove beneficial. The syllabus is an essential document in higher education. The syllabus should incorporate all aspects of the course, from assignments to academic integrity. Detailed instructions should be included for assignments, but also academic integrity. Pizzo (2021) provided an example of elements or statements that should be included in a syllabus statement on academic integrity. The statements include a detailed description of unauthorized assistance, communication to another through written, visual, electronic, or oral means, commercial use of educational materials, falsifying or misrepresenting the student's work, plagiarism, multiple submission, and helping another violated academic behavior standards.

Implementation of Group Work

Lieneck and Esparza (2018) implemented a solution for preventing cheating by allocating open-access course sites with folders that students utilize to post resources for sharing. The professor copied the folder each semester, allowing the resource content to grow. The group-type effort was implemented to deter students from using external Web sites Verhoef and Coetser (2021) revealed that group work could potentially reduce dishonesty. The students implied that they learn better when collaborating with others. Group work holds each member accountable,

and many students do not want to let the other group members down; thus, they tend to put forth their best effort.

Plagiarism and Impersonation Best Practices

After the extensive literature review was conducted, the researcher compiled a list of 20 best practices for reducing plagiarism and impersonation in online course assignments. The alphabetized list and a brief description of each best practice are included in Tables 1 and 2. Table 1 contains the first half, and Table 2 contatins the second half. In addition, the complete list will be incorporated in the ordinal ranking questionnaire that will be distributed to the professors participating in the Delphi method approach.

Table 1

Best Practices for Reducing Plagiarism and Impersonation in Online Assignments First Half

Best Practices	Descriptions
Anti-Plagiarism Tools	Software and less invasive approaches
Assessment Design	Designing exams decrease the chances of cheating
Authenticity Through Passwords and IDs	Passwords and IDs to gain course access
Authenticity Via Bimodal Biometrics	The use of more than one biometric feature in recognition of a person
Authenticity Via Biometric Physiological & Behavioral	Human biological characteristics to manage access to information
Clear and Concise Definition	Providing a clear and concise definition of plagiarism and impersonation
Detailed Instruction	Detail instructions of assignments and academic integrity-include in the syllabus
E-Tutorial	Academic Integrity E-tutorial
Honor Pledge	An honor code could be beneficial in reducing academic dishonesty
Implementation of Group Work	Encouraging group work

Table 2

Best practices for Reducing Plagiarism and Impersonation in Online Assignments Second Half

Best Practices	Descriptions
Integrity policy	Establishment of clear academic standards
Lockdown Browsers	Means of locking the online exam window until the online test is submitted
Online Committees	Committee educating on plagiarism and impersonation
Proctoring In-Person	Campus testing or a local proctoring testing center
Proctoring Live	It is implemented through platforms such as Zoom or even LMS with built-in platforms for collaboration
Proctoring Video Summarization	Students are recorded via their webcam, and the video summarization program generates either keyframes or video skims
Proctoring Web Video Recording	The process of recording the student throughout the entire exam or assignment and can be observed later by the instructor
Respondus Monitor	An automated proctoring device that can be used along with the Lockdown Browser
Stricter Punishments	Punishment should be consistent and enforced
Stricter Time Limits	Impose strict limits for exams

Summary

Cheating opportunities have increased due to the expansion of online degree programs and technological advances. An extensive literature review unveiled numerous ways that students potentially engage in plagiarism and impersonation online. Furthermore, the literature review established 20 best practices to reduce plagiarism and impersonation in online course assignments.

This study will further analyze the 20 best practices by obtaining expert opinions. First, the list will be narrowed down via a two-round Delphi method. Then, after completing both rounds of the Delphi study, the complete list of ten best practices will be established. Establishing a best practice approach coupled with expert opinions in this study will prove beneficial in reducing acts of plagiarism and impersonation.

Chapter 3

Methodology

This study aimed to examine how plagiarism and impersonation can compromise the academic integrity of online courses. The intent is to find and establish best practices to reduce plagiarism and impersonation. While some methods are in place to reduce plagiarism and impersonation, the academic integrity of online programs remains a concern for educators. Chapter three encapsulates the extensive literature review by deploying a 20 best practices approach to reducing plagiarism and impersonation in online course assignments. The triangulation mixed-method phenomenological research seeks to explore the perspectives of expert opinions within their field by converging the Delphi method via the best practices ranking questionnaire and faculty interview. This chapter is structured into sections that include the research questions, research design, population and sample, ranking and interview questionnaire development, data collection, data analysis, and limitations.

Research Questions

This mixed-method study examines the problems of plagiarism and impersonation in online courses. The following research questions served as the basis for this study.

1. What practices do online faculty believe can reduce plagiarism in online course assignments?

2. What practices do online faculty believe can reduce impersonation in online course assignments?

3. What current practices do online faculty believe universities have employed to reduce plagiarism and impersonation in online course assignments?

4. In what ways do the survey and interview data align with one another?

Research Design

The design of this study is a mixed method in nature, incorporating a triangulation technique embedded in the participants' views and perspectives. Intending to acquire multiple perspectives, the researcher chose the Delphi method approach. The Delphi method's objective is to facilitate structured group communication for the purpose of gathering the consensus of expert opinions in dealing with complex issues (Grime & Wright, 2016). The Delphi method approach begins in chapter one, first by identifying the research problem, then by an extensive literature review in chapter two, and last by developing the questionnaire. The first round of Delphi commences after study approval from the Marshall University Institutional Review Board (IRB) and the development of the survey. The Delphi method utilizes a two-round format in the delivery of the questionnaires. The questionnaire is an ordinal ranking type requiring the participants to rank the best practices from one to twenty, with one being the best. Once the first-round questionnaire is returned to the researcher, the second-round questionnaire is analyzed, developed, and deployed. After receiving the second and final round of the Delphi process, the data is analyzed, and a list of the ten best practices for reducing plagiarism and impersonation is complete. The last portion of the triangulation embodies the interviewees. The interviewees will share their expert opinions on the Delphi results and divulge the various practices employed by their universities. The purpose of this study is to discover best practices for reducing plagiarism and impersonation in online course assignments, thereby ensuring the academic integrity of online degree programs.

Population and Sample

Purposeful sampling is commonly used in qualitative research. It allows the researcher to choose participants representative of the study (McMillan, 2016). The population of the first part

of this study is a purposeful sample of professors who teach in a fully online bachelor's degree program at multiple institutions across the nation. Adjunct faculty are permitted to teach in fully online programs and therefore were included in the study. The expert opinions of the faculty were essential in providing validity. First, a list of 40 professors who teach in a fully online bachelor's degree program is compiled. Next, the researcher e-mails a letter to each professor (Appendix B) explaining the study in detail. The consent to participate in the study is included in the initial e-mail. Participation consent is expressed before clicking the link to initiate the survey. The e-mail details how the participants will receive a second-round survey to complete after two weeks, allowing everyone sufficient time to take the first-round survey.

The population of the second part of this study derives from the original Delphi study. The original consent form includes a link for participants to access if they choose to participate in the interview. Every participant had an equal probability of being selected. The criteria for being chosen were full participation in the Delphi study (completed both rounds) coupled with being one of the first 10 respondents agreeing to participate in the interview process. The sample for the interview is established after receiving confirmation e-mails from the first 10 participants.

Development of Questionnaire(s)

The researcher compiled the survey questionnaire after completing the extensive literature review. The list consisted of 20 best practices. The researcher selected a rating scale that required the participants to place the answers in order of importance from one to twenty, one being the best. The questionnaire is an ordinal ranking system type with the best practices listed alphabetically. The survey design allows the participants to drag and drop the best practices in order from top to bottom, with the top being number one. Qualtrics, an online data collection tool, was used in creating the ordinal ranking questionnaire survey. The survey's setting in

Qualtrics allowed the survey to be completed on a computer or a mobile device. Thus, allowing easier access.

The first-round survey contains three questions prior to the ordinal ranking question. The first question asked if the faculty taught in a fully online degree program. If the participants answer yes, then they proceed to the next question. However, if they choose no, the survey ends—the study requires faculty to teach in a fully online bachelor's degree program. The second question asked about their teaching status in the fully online program; full-time, part-time, or adjunct. The next question asked how long they have been teaching online. The survey is designed not to allow participants to proceed without completing these demographic questions. After completion of the demographic questions, the participants are clear to engage in the ordinal ranking survey. Once the first-round questionnaire is complete, Qualtrics will alert the researcher of the completed survey. Finally, the researcher analyzes the data via Qualtrics, and a second-round questionnaire is compiled in the same format as the first, with the exception of the demographic questions. The second-round questionnaire comprised the top 15 best practices completed similarly to the first round. Appendix C and D include a copy of the surveys.

Interview Questions

The interview questions established by the researcher are as follows:

1. Do you approve of the Delphi results of the 10 best practices for reducing plagiarism and impersonation in online course assignments?

2. What practices would you add to the list/why?

3. What practices would you remove from the list/why?

4. What practice(s) does your current university employ to reduce plagiarism and impersonation in online assignments?

Data Collection

Data collection was multifaceted. First, an extensive literature review was conducted that established a list of the 20 best practices for reducing plagiarism and impersonation. Preceding the survey questionnaire's development, the researcher began a research study approval proposal through the Marshall University Institutional Review Board (IRB). An Exempted approval for study number 1941112-1 was granted on August 10, 2022. The subsequent field of collection involved the researcher selecting the experts in the field. The researcher used a nonrandom purposeful sampling method to attain a sample representative of the study. The purposeful sample was used to identify professors who teach in a fully online bachelor's degree program. A list of the top 50 online bachelor's degree programs was used to obtain a list of professors who teach in a fully online bachelor's degree program. All the potential participants were sent an e-mail inviting them to participate in the study. The initial e-mail contained a description of the study and the consent to participate in the study. A link to the survey is in the initial e-mail with a two-week expected completion time. Following the end of the survey, participants are asked if they would like to participate in a brief interview via Zoom or any other social media platform of their choosing at the completion of the study. After one week, the researcher sent a reminder e-mail to the potential participants. Once the researcher received the ordinal ranking questionnaire from round one and analyzed the data, the 15 best practices second-round questionnaire was employed through e-mail to the participants who returned round one. The researcher sent a reminder e-mail at the end of one week, the same as the first survey. The questionnaire survey ended on October 21, 2022. Upon completing the Delphi study, 10 professors agreed to participate in an interview. The interviews took place from November 15, 2022 through November 29, 2022. The interviewees' answers were compiled and analyzed.

Data Analysis

Combining qualitative and quantitative data through the triangulation mixed method allows the researcher to fully converge and understand the phenomenon (McMillan, 2016, p. 379). In addition, the study serves to acquire the knowledge and perspectives of expert participants in the field of online bachelor's degree programs. An extensive literature review established and organized the data into the 20 best practices for plagiarism and impersonation. The researcher employed and then gathered the Delphi first-round questionnaire from the panel of experts. The researcher analyzed the first round and narrowed it down to the 15 best practices for reducing plagiarism and impersonation. The second-round questionnaire was sent to the same panel of experts that participated in the first round. Upon receiving the second-round questionnaires, an analysis was conducted. The researcher narrowed the list of 15 best practices to ten. After completing two full rounds of the Delphi method, ten best practices for reducing plagiarism and impersonation were established. After the completion of the ten best practices, interviews of the randomly selected professors were conducted, and the data was compiled and analyzed.

Limitations

The qualitative portion of mixed-method studies is more exploratory in nature, thus introducing researcher bias more easily. For instance, this study involved the compilation of 20 best practices. The 20 best practices established from the literature review may contain potential research bias in creating the ordinal ranking questionnaire.

The study focused on faculty who teach in a fully online bachelor's degree program. The extent to which the results can be generalized to other populations is limited due to the number of participants. There is potential for further compromising generalizability if the same number

of respondents fail to return the questionnaire in the second round. Last, the data was collected during the summer, potentially decreasing the number of responses from faculty who may not teach in the summer.

Chapter 4

Findings

The motivation for this study derives from the need to ensure that academic integrity is extant and perpetuated within the online environment. The research questions served as the basis for developing and perpetuating a list of best practices for combating plagiarism and impersonation in online assignments. Utilizing faculty's expert opinions obtained through surveys and interviews was a key factor in obtaining the top 10 best practices for combating plagiarism and impersonation in online assignments.

Chapter four presents the results of the Delphi study and the interviews. The chapter includes data collection, population, and research questions. The subsequent sections focus on the best practices survey results, the interview perspectives, and how the faculty interviews align with the survey. The chapter summary is the concluding section of the findings.

Data Collection

This study was focused on a mixed-method triangulation technique embedded in the participants' views and perspectives. The researcher established the 20 best practices through an extensive literature review in chapter two. First, the researcher investigated online programs. After further investigation, the researcher found a website listing the best bachelor's degree programs online. Then, after an exhaustive exploration of the top 50 online bachelor's degree programs from the US News (2022), the researcher obtained faculty e-mails. The researcher initially intended to use a sample of 40 professors who teach in fully online bachelor's degree programs. However, to increase the opportunity for participation in the study and achieve the desired amount for the sample, the researcher increased the number and obtained 125 e-mails.

An e-mail containing the description of the study, the consent, and the link to the Qualtrics online survey was distributed on September 09, 2022, to the 125 faculty e-mails. A link to participate in a brief interview after the study's completion is included. Of the 125 e-mails, three were sent back undeliverable. Consequently, the researcher sent a reminder e-mail and added three e-mails from local universities on September 22, 2022. An additional week and three e-mails were added to the first-round survey to increase the response rate. The conclusion of the first round of the Delphi study was on September 30, 2022. The results were analyzed, revealing the 15 best practices for reducing plagiarism and impersonation in online assignments. An e-mail containing the second survey link and a statement explaining when to expect communication on the interview for those who agreed to participate was sent on September 30, 2022. The researcher had difficulty getting all participants from round one to complete the round two survey. Therefore, a reminder e-mail was sent one week after the second round e-mail was sent. Similar to the first round of the Delphi study, the researcher extended the completion time by one week. The Delphi study was completed on October 21, 2022. The researcher sent out an e-mail to all interviewees requesting a time and an online platform that would work best for the interview (a copy of the e-mail is included in Appendix B). The final list of the 10 best practices for reducing plagiarism and impersonation in online assignments and the interview questions were included in the e-mail allowing the participants adequate time to prepare for the interview.

Population

A Qualtrics online survey was distributed through e-mail to 125 faculty who teach in a fully online bachelor's degree program throughout the United States. Of the 125 faculty, 22 survey responses were collected and presented a return rate of 18%. The survey demographics of the faculty who teach in a fully online bachelor's degree program consisted of 18 full-time and

one part-time. None of the responses from the survey were provided by adjunct faculty. The amount of time faculty have taught in a fully online bachelor's degree program was categorized in the survey as 0-5 years, 6-10 years,11-15 years, and over 15 years.

A second Qualtrics online survey with the newly compiled 15 best practices for reducing plagiarism and impersonation in online assignments was distributed to the 16 faculty members who previously completed the entire first-round Qualtrics online survey. Of the 16 faculty members who completed the first-round survey, nine completed the second round for a return rate of 56%.

The final part of the mixed method triangulation technique involved the interviewees. Ten faculty participants responded to the first Qualtrics survey to participate in a brief interview following the completion of the Delphi study. Accordingly, the ten faculty respondents were sent an e-mail on October 27, 2022, requesting a time and online platform preference to conduct the interview. A copy of the e-mail is in Appendix B (interview e-mail). Five of the ten faculty that agreed to participate in the interview responded with a time and platform that would work best for them. Five interviews were conducted with a rate of response of 50%.

Research Questions

This mixed-method study examines problems of plagiarism and impersonation in online courses via a triangulation technique. Data is collected through the literature review, the Delphi study, and an interview process.

1. What practices do online faculty believe can reduce plagiarism in online course assignments?

2. What practices do online faculty believe can reduce impersonation in online course assignments?

3. What current practices do online faculty believe universities have employed to reduce plagiarism and impersonation in online course assignments?

4. In what ways do the survey and interview data align with one another?

Survey Results

Faculty Demographics

The majority of faculty in the first survey appeared within the 11-15 years range, accounting for seven (37%). The next level range appeared within the 0-5 years range, accounting for six (32%). Likewise, the next level range appeared within the 6–10-year range accounting for 5 (26%). The final level was the over 15-year range, which accounted for one (5%).

The survey indicated that there were 22 responses in total. However, after further analysis, three respondents had only completed the demographic portion of the survey. The Qualtrics survey response result indicated that the question needed to be displayed to the respondents even though they did teach in a fully online bachelor's degree program. Thus, the failure to complete the ranking portion of the survey provided no useful information for the best practices list. Three additional respondents were listed as completing the survey; however, they did not qualify for the study because they marked no to teaching in a fully online bachelor's degree program, which did not allow them to complete the remaining survey. The Delphi study provided 22 responses, yet only 16 usable responses were viable.

The demographic data were further examined, providing a more detailed breakdown of the full-time and part-time faculty, distinguishing the years of teaching, completion of the entire survey, and completion of the demographic survey. There was only one part-time faculty respondent, 1(100%). The part-time faculty participant was categorized under the 0–5-year range

for teaching and was classified as completing the survey completely (100%). The remaining respondents were full-time. Five (28%) of the full-time faculty were in the 0–5-year range and had a completion rate of 100%. The 6–10-year range contained 5 (28%) participants and had a completion rate of 60%. The 11–15-year range contained 7(39%) and had a completion rate of 86%. The last range was over 15 years, contained 1(6%), and had a completion rate of 100%. The respondents' results of the survey's demographic portion of the first survey are summarized in detail in table 3.

Table 3

Faculty Demographics

Faculty		Full-time		Part-time	
		n	%	n	%
Years Teaching Online	0-5 years	5	28	1	100
	6-10 years	5	28	0	0
	11-15 years	7	39	0	0
	Over 15years	1	6	0	0
Completed Entire Survey	0-5 years	5	33	1	100
	6-10 years	3	20	0	0
	11-15 years	6	40	0	0
	Over 15years	1	7	0	0
Completed Demographics But Not the Survey	0-5 years	0	0	0	0
	6-10 years	2	67	0	0
	11-15 years	1	33	0	0
	Over 15years	0	0	0	0
Completed Survey % by Years Teaching Online	0-5 years		100		100
	6-10 years		60		0
	11-15 years		86		0
	Over 15years		100		0

Survey One

As stated above, 16 participants completed the first-round survey. The researcher

analyzed the survey data actualized through Qualtrics and compiled a list of the 15 best practices

for reducing plagiarism and impersonation in online assignments. The method the researcher

used to analyze the data was a crosstab generated through Qualtrics. The crosstab generated the

best practice survey's mean, median, and standard deviation. The researcher used the mean and

median to determine which best practices would be eliminated from the top 20 list. The higher

the mean and median, the lower the practices were ranked in the ordinal ranking survey. The

mean and median values were remarkably similar in depicting the results. However, there was a

discrepancy with the proctoring web video recording's values. The mean value determined that a

proctoring web video recording should remain on the 15 best practices list, while the median

value determined it should be removed. The standard deviation was high, revealing a higher

variance in the responses. The researcher confirmed the discrepancy via the standard deviation

value and concluded it should remain on the list with further evaluation of the second survey

results. The five best practices the data revealed would be eliminated from the study as the

Delphi study was advanced were: online committees, implementation of group work, stricter

punishments, E-tutorial, and proctoring video summarization. Table 4 depicts the data (mean,

median, and standard deviation) results from the first round Delphi survey.

Table 4

Best Practice Survey Results 1

Best Practices	Mean	Median	Standard Deviation
Anti-Plagiarism Tools	4.9	4.5	3.5
Assessment Design	5.7	6.0	3.5
Authenticity Through Password and IDs	10	10.5	3.4
Authenticity Via Bimodal Biometrics	11.6	12.0	5.3
Authenticity Via Biometrics Physiological and Behavioral	11.3	10.0	4.9
Clear and Concise Definition	7.8	6.5	5.3
Detailed Instruction	7.8	7.5	4.8
E-Tutorial	**12.9**	**14**	4.3
Honor Pledge	11.3	11	6.9
Implementation of Group Work	**14.6**	**15**	3.9
Integrity Policy	10.1	10	6.7
Lockdown Browsers	6.8	5.5	4.1
Online Committees	**15.4**	**16**	3.2
Proctoring In-Person	10.8	13	7.1
Proctoring Live	10.4	11	6.6
Proctoring Video Summarization	**12.9**	**15**	5.1
Proctoring Web Video Recording	11.9	**15.5**	**6.4**
Respondus Monitoring	10.1	8	6.3
Stricter Punishments	**13.2**	**14**	5.7
Stricter Time Limits	10.8	10	5.3

Note. The values confirming which best practices should be eliminated are in bold.

Survey Two

The second-round survey concluded the Delphi portion of the study with nine participants responding. The researcher analyzed the survey data and compiled a list of the 10 best practices for reducing plagiarism and impersonation in online assignments. The data in the second survey was analyzed correspondingly to the first survey. Hence, the researcher utilized the mean, median, and standard deviation from a crosstab analysis generated from Qualtrics to determine which best practices would be eliminated from the top 15 list. Survey two data vindicated the researcher leaving the web video recording best practice on the top 15 list. It fared well on the second survey. The five practices the crosstab analysis revealed would be eliminated were a clear

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and concise definition, detailed instruction, honor pledge, integrity policy, and stricter time limits. The top 10 best practices for reducing plagiarism and impersonation in online assignments were actualized, and a copy was sent to all interviewees. However, after configuring table five below, it was apparent to the researcher that a clear and concise definition was erroneously left off the top 10 list. Contrastingly, Respondus Monitoring was erroneously left on the top 10 list. The interviews had already occurred when the error was determined. Details on how this error impacted the interviews are discussed in the Interviewee Perspective session. Table 5 depicts the results of the second survey.

Table 5

Best Practice Survey Results 2

Best Practices	Mean	Median	Standard Deviation
Anti-Plagiarism Tools	4.7	6.0	3.2
Assessment Design	6.8	8.5	3.6
Authenticity Through Password and IDs	8.0	8.0	4.2
Authenticity Via Bimodal Biometrics	8.6	8.0	3.3
Authenticity Via Biometrics Physiological and Behavioral	8.4	9.5	3.8
Clear and Concise Definition	8.6	8.5	4.6
Detailed Instruction	**8.9**	9.0	4.8
Honor Pledge	**11.9**	14.0	4.1
Integrity Policy	**11.4**	12.5	3.7
Lockdown Browsers	5.9	5.5	2.3
Proctoring-In-Person	5.4	5.0	4.4
Proctoring Live	5.5	4.0	4.7
Proctoring Web Video Recording	6.4	6.0	3.7
Respondus Monitoring	**8.9**	8.5	5.0
Stricter Time Limits	**10.6**	10.0	2.8

Note. The values confirming which best practices should be eliminated are in bold.

Table 6 depicts the top 10 best practices distributed to the five interviewees. Accordingly, the order is displayed by how they were initially ranked in the second-round survey from highest (best) to lowest.

Table 6

Top 10 Best Practices for Reducing Plagiarism and Impersonation in Online Assignments Ranked in Order of Survey Results

Anti-Plagiarism Tools
Proctoring-in-Person
Proctoring Live
Lockdown Browser
Proctoring Web Video Recording
Assessment Design
Authenticity Through Password and IDs
Authenticity Via Biometrics Physiological and Behavioral
Authenticity Via Bimodal Biometrics
Respondus Monitoring

Faculty Interview Perspective

The final portion of this mixed-method triangulation study included five faculty members from various universities nationwide participating in brief interviews. The interviews took place on the virtual platform Zoom. The interviews ranged from 20-30 minutes each. The interviewees were asked the following list of questions:

1. Do you approve of the Delphi results of the10 best practices for reducing plagiarism

2. What practices would you add to the list/why?

3. What practices would you remove from form the list/why?

4. What practice(s) does your current university employ to reduce plagiarism and impersonation in online assignments?

Interview question one was unanimous in that everyone approved of the 10 best practices for reducing plagiarism. Although, two respondents disclosed how the cost could be an issue, specifically in biometrics and specific monitoring practices. One of the respondents expounded upon the cost issue by asserting how they used Proctor U for their online program exams prior to the pandemic. Consequently, the increased usage campus-wide was not financially feasible, thus

prompting them to quit using the proctoring service. In addition to cost, two respondents believed the inclusiveness of the top ten list was acceptable but did not agree with the ordering. One respondent declared that the order was dependent on several factors. For instance, was it a high or low stake exam, a graduate or undergraduate degree program, or what was the class type? Anyone of these could change the significance of each best practice within the ranking order.

Most respondents in question two affirmed that they would not add any practices to the list, declaring that it was comprehensive for methods currently available. However, one suggested that threads for discussion boards should be incorporated into the list. The respondent substantiated that online course discussions allow student interaction and that discussion forums are used routinely in online courses. Thus, incorporating a system to reduce copying is vital. Therefore, formatting the discussion forums in a manner that requires participants to create a thread to view other threads deters the students from being tempted to copy other students' work.

Question three's respondents were unanimous; all believed that there should not be any practices removed from the list. As mentioned, two respondents indicated that biometrics could be costly but should remain on the list. Also, specific monitoring practices could be an issue with reference to cost and access. Furthermore, some respondents needed clarification about what live proctoring entailed. After clarifying that live proctoring could be achieved through platforms like Zoom or a built-in learning management system, the respondents deemed it should remain on the list. Of course, this could only be accomplished through synchronous learning.

Question four revealed numerous practices the respondents' universities used to reduce plagiarism and impersonation in online assignments. All respondents indicated that anti-plagiarism tools were offered and several expressed using them. Several respondents utilize lockdown browsers, including Respondus Monitoring, and stated how they are typically used for

low-stake exams. Proctor U and Examity were two proctoring services mentioned and typically used for higher stake exams. One respondent indicated that their university is looking at other proctoring services besides Examity and may change in the future due to issues. A couple of the respondents utilized an assessment design involving two different test versions. In another example of assessment design, one respondent includes question pools with up to 150 questions for the multiple-choice question and 30 pools of questions for the five essay questions. Randomization of the test questions, stricter time limits, and password student ID authenticity were a few other practices mentioned as reduction methods employed at their campus.

Most respondents acknowledged that cost could be an issue with the list of best practices. Yet, all agreed that the costlier practices should remain. One professor prefers in-person proctoring but realizes there are more feasible options. Another professor pointed out how the ranking order can depend on the class, the degree (graduate or undergraduate), and if the assessments are high or low stakes. A couple of comments from one respondent stated that it is called long-distance learning because, like a long-distance relationship, it takes work. Also, it is intended to be easy access, not easy work.

None of the respondents indicated any mandatory practice established by their universities—most facilities gave the faculty a choice of what practices to implement.

Table 7 and 8 depicts a summary of the interviewees' responses.

Table 7

Interview Summary Questions 1-3

Interview Questions 1-3	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Do you approve of the Delphi results of the 10 best practices for reducing plagiarism?	Yes, the top ten are fine if cost is not an issue.	Yes-overall, but I do not agree with the order.	Yes	Yes	Yes-but may reorder some.
What practices would you add to the list/why?	None	None	None	Creating threads for discussion boards. This way, students are not tempted to copy.	None, it seems comprehensive for the best methods currently available.
What practices would you remove from the list/why?	Biometrics cost can be an issue but do not take it off the list.	Proctoring-in-person didn't understand how that could be achieved online. After explaining going to a proctoring service's physical location, Interviewee 2 opted for it to stay.	Live proctoring is hard to do. However, after I explained utilizing a platform like Zoom or even some built the LMS, interviewee 3 decided it should stay on the list.	Proctoring in person, this defeats online. Agrees a proctoring service could work but still takes away from the benefits of online.	Would not exclude any, but would consider the cost for some, like biometrics and specific monitoring practices. The cost could make it out of reach for some educational facilities.

Table 8

Interview Summary Question 4 and Additional Comments

Interview Questions 4 and Additional Comments	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
What practice(s) does your current university employ to reduce plagiarism and impersonation in online assignments?	Used Proctor U in the online program prior to the pandemic; however, increased demand made it too costly for the university. Use the Turnitin plagiarism tool. Use Respondus Monitoring. Uses two versions of the same test.	Respondus Monitoring is used for low stake exams. Examity is used for high stake exams. Potentially switching in the future due to problems. Other practices are time limits, randomization, test pool questions, and the Safe Assign anti-plagiarism tool.	Turnitin, lockdown browser, time limits, word count on an essay, assessment design to include large question pools (at least150 questions) Five essay questions will have 30 test bank questions.	There is no university system; individual professors handle it. Use the creating threads for discussion boards and the Safe Assign-anti-plagiarism tool.	Currently, proctoring is available with live-time and anti-plagiarism tools, lockdown browsers, and password and student ID authenticity. All are available and are in the instructor's choice as to implementation.
Additional Comments	Long-distance learning, like a long-distance relationship, takes work. But unfortunately, students associate online with easy access, not easy work.	Ranking order can depend on the class, degree (graduate or undergraduate), high or low stake assessments, and availability of online proctoring services for online.	No additional comments.	No additional comments	Prefer in-person proctoring as the best method but realize there are more feasible options.

An aforementioned error in the top ten list failed to list a clear and concise definition and erroneously included Respondus Monitoring on the top ten list. After analyzing the interviewees' answers, the researcher determined that nobody mentioned a clear and concise definition in any of their practices, yet lockdown browsers, specifically Respondus Monitoring, were mentioned. Therefore, the researcher further studied Respondus Monitoring and determined that since it is a type of software that records both video and audio, it could be combined with proctoring web video recording. However, it needs to be acknowledged that Respondus Monitoring requires the Respondus LockDown Browser application. The researcher compiled a new top 10 best practices to ensure the study's legitimacy and the interviewees' perspectives were accounted for within the convergent research.

Table 9 depicts the updated top 10 best practices for reducing plagiarism and impersonation in online assignments.

Table 9

Updated Top 10 Best Practices for Reducing Plagiarism and Impersonation in Online Assignments Alphabetically

Anti-Plagiarism Tools
Assessment Design
Authenticity Through Password and IDs
Authenticity Via Bimodal Biometrics
Authenticity Via Biometrics Physiological and Behavioral
Clear and Concise Definition
Lockdown Browsers
Proctoring-In-Person
Proctoring Live
Proctoring Web Video Recording/Respondus Monitoring- (must be used with Respondus LockDown Browser application)

Faculty Interview and Survey Alignment

The faculty interviews overall aligned well with the survey. All the faculty agreed with the list and indicated they would not remove any listed practices. However, one mentioned creating threads for the discussion boards to deter students from being tempted to copy. Creating discussion threads was the only practice the respondents mentioned that was missing from the top ten list. Creating discussion threads could fall under assessment design. A detailed description of the assessment design was expressed, including the number of questions in the test pools and even one faculty member discussing how they use two different versions of the same test. Furthermore, the respondents did express practices in more detail. For example, two specific proctoring services identified were Proctor U and Examity. Although, problems with Examity were stated, along with possibly switching in the future. Specific antiplagiarism tools discussed were Turnitin and Safe Assign.

After revealing an erroneous error, the interview process helped reestablish the top 10 best practices. Obtaining and analyzing the respondents' viewpoints were key in configuring and recompiling the list. Their responses to the current practices their university employed reiterated the top 10 best practices for reducing plagiarism and impersonation in online assignments. Thus, correlating the information collected from the research and the interview. In addition, the interview process disclosed to the researcher how a description of the best practices should have been included in the survey. For example, some respondents needed clarification on what live proctoring meant. A detailed description of each best practice could have better aligned the interview with the survey.

Summary

The motivation of this study was to establish best practices for ensuring that academic integrity is extant and perpetuated within the online environment. The research questions served as the basis for developing the best practices for combatting plagiarism and impersonation in online assignments. Data was collected via a triangulation technique embedded in the participants' views and perspectives. Two Delphi surveys were implemented to acquire the top 10 best practices for reducing plagiarism and impersonation in online assignments.

Upon analyzing the results, an erroneous error was uncovered. The interview process enabled the researcher to analyze the data further, correlate the faculty's viewpoints, and recompile a top 10 best practice list, thus aligning the survey and interview. However, aligning the survey and the interview process could have streamlined even more efficiently if the researcher had incorporated the best practice descriptions into the survey.

Chapter 5

Conclusions and Recommendations

Chapter five presents the conclusions and recommendations based on the study's findings. The chapter comprises a summary of the problem statement, research questions, methods summary, findings, conclusions, discussions and implications, and recommendations for further research.

Problem Statement and Summary

Distance education is not a new phenomenon. However, it is an ever-evolving process. As of 2019, more than 7.3 million students were enrolled in distance education or online courses at degree-granting postsecondary institutions (National Center for Education Statistics, 2015). The upward trend of online enrollment increases the need for fully online degree programs. The online growth surge is beneficial to universities. However, it also raises an important question in addressing and ensuring the academic integrity of online degree programs. For instance, how can institutions ensure assignments are completed by the students who submitted them? Two potential practices requiring investigation are plagiarism and impersonation.

Asynchronous programs allow students to perform their work at their own pace in their own spaces, giving them complete control of navigating the courses. Though beneficial to students, it does invite opportunities for plagiarism and impersonation. In addition, students' perceptions of cheating and academic misconduct further exacerbate the problem of plagiarism and impersonation.

Ensuring academic integrity in online degree programs is challenging if the legitimacy of students' assignments and identities is questionable. Therefore, an examination of current practices to combat online plagiarism and impersonation is needed.

Research Questions

The following questions served as the guide for this study:

1. What practices do online faculty believe can reduce plagiarism in online course assignments?

2. What practices do online faculty believe can reduce impersonation in online course assignments?

3. What current practices do online faculty believe universities have employed to reduce plagiarism and impersonation in online course assignments?

4. In what ways do the survey and interview data align with one another?

Method Summary

The research design was a triangulation mixed-method technique embedded in the participants' views and perspectives. First, the researcher conducted an extensive literature review and revealed the top 20 best practices for reducing plagiarism and impersonation in online assignments. Next, a list of 125 professors who potentially teach in a fully online bachelor's degree program, along with their e-mails, was compiled from an exhaustive exploration of the top 50 online bachelor's degree programs from the US News (2022). A Delphi method approach that utilizes the collective expertise of groups within their field of study was employed upon completing the list of professors and the survey. The researcher developed the survey through Qualtrics. The survey (Appendix B) contained the 20 Best Practices for reducing plagiarism and impersonation in online assignments in alphabetical order. The survey design allowed the participants to drag and drop the list in their desired order. Finally, an e-mail containing the study's description, the consent, the link to the Qualtrics online survey, and a link for interview participation was distributed to 125 faculty. The results from the first survey were

collected three weeks later, analyzed, and a list of the 15 best practices for reducing plagiarism and impersonation in online assignments was established. A second survey was developed in Qualtrics, similar to the first. The second survey link containing the 15 best practices for reducing plagiarism and impersonation in online assignments was distributed via another e-mail. A statement of when to expect communication on the interview for those agreeing to participate was also included in the e-mail. The results were collected three weeks later, and the 10 Best Practices for Reducing Plagiarism and Impersonation in online Assignments was established. The last part of the triangulation mixed-method research involved interviewing the faculty. The researcher sent an individual e-mail to those faculty that had previously agreed to an interview. Once the responses were obtained, the researcher set up a day and time that the respondents had indicated and then sent an individual e-mail containing a Zoom link, the interview questions, and a list of the top ten best practices to the interview respondents.

Summary of Findings

Most of the faculty responses in the first survey were full-time (18); only one part-time faculty responded. One faculty taught for over 15 years, and the majority taught in the 11-15 years range (39%). The remaining faculty (28%) had taught in the 6-10 years range and (28%) in the 0-5 years range. The only part-time faculty taught in the 0-5 years range. Three completed the demographics portion of the first survey but failed to complete the entire survey. Two faculty were in the 6-10 years range, and the other was in the 11-15 years range. The 0-5 years range and the over 15 years had a completion rate of 100%. The 11-15 years range had a completion rate of 86%, while the 6-10 years range had the lowest at 60%.

Utilizing a crosstab generated through Qualtrics, the mean, median, and standard deviation were used to determine which best practice would be eliminated. The higher the mean

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and median, the lower the practices were ranked in the ordinal ranking survey. The standard deviation was used to validate any mean and median discrepancy. The following best practices were determined to be eliminated from the 20 best practice list: online committees, implementation of group work, stricter punishments, E-tutorial, and proctoring video summarization.

The second survey was analyzed correspondingly using the crosstab generated through Qualtrics. The five practices revealed by crosstab analysis that would be eliminated were: a clear and concise definition, detailed instruction, honor pledge, integrity policy, and stricter time limits. In addition, the top 10 list for reducing plagiarism and impersonation in online assignments was actualized and given to the faculty participating in the interview. The top 10 Best Practices for Reducing Plagiarism and Impersonation in Online Assignments ranked in order are Lockdown Browser, Anti-Plagiarism Tools, Proctoring-in-person, Proctoring Live, Proctoring Web Video Recording, Assessment Design, Authenticity Through Password and IDs, Respondus Monitoring, Authenticity Via Biometrics Physiological and Behavioral, authenticity Via Bimodal Biometrics, and Respondus Monitoring.

Consequently, after configuring table five results, the researcher discovered an erroneous error. A clear and concise definition should have remained on the best practice list, while Respondus Monitoring should have been removed. The interviews had already been conducted when the error was discovered. Ten participants agreed to participate; however, only five responded and completed the interview. Thus, the researcher analyzed the interview data of the five respondents before addressing the error issue. After further analyzing the interviewees' responses, it was determined that a clear and concise definition was not mentioned in any of the faculty's practices. Yet, lockdown browsers were mentioned in four out of the five interviews,

with Respondus Monitoring being mentioned two times. After further evaluation of Respondus Monitoring, the researcher determined that it is a type of software that records both video and audio. Therefore, it could be combined with proctoring web video recordings. Still, it should be acknowledged that Respondus Monitoring requires the Respondus LockDown Browser application.

In order to ensure the legitimacy of the study was intact, the researcher compiled a new top 10 best practices list incorporating the initial surveys coupled with the interviewees' perspectives. The updated list of the Top 10 Best Practices for reducing Plagiarism and Impersonation in Online Assignments, listed in alphabetical order, are: Anti-Plagiarism Tools, Assessment Design, Authenticity Through Password and IDs, Authenticity Via Bimodal Biometrics, Clear and Concise Definition, Lockdown Browsers, Proctoring-In-Person, Proctoring Live, Proctoring Web Video Recording/Respondus Monitoring (must be used with Respondus LockDown Browser application)

Conclusions

The data collected throughout this study are adequate to support the following research-driven conclusions.

Research Question 1-What practices do online faculty believe can be employed to reduce plagiarism in online course assignments?

The literature review determined Plagiarism is representing another's writings, thoughts, or ideas as their own. Specific forms mentioned in the study were e-cheating, contract cheating, collusion, utilizing course resources, and all forms of online plagiarism. Additionally, several devices used for cheating were discussed as well as instances of plagiarism. The first step of the analysis involved an extensive literature review to establish a list of the 20 best practices for

reducing plagiarism and impersonation in online assignments. The second step involved a two-round Delphi study that narrowed the 20 best practices list to 10.

Many practices on the 20 best practices list are used interchangeably with plagiarism and impersonation. Additionally, many aspects of plagiarism and impersonation, such as why students plagiarize and commit or engage in impersonation, the statistical occurrences, and ways to reduce plagiarism and impersonation, were studied simultaneously. For this reason, the remaining conclusions will be continued in Research Question 2.

Research Question 2-What practices do online faculty believe can reduce impersonation in online course assignments?

The literature review determined impersonation as a student hiring a company or individual to complete an assignment, take a quiz, a test, or even in some cases, the entire course. Impersonation was further classified into four types by threats. Type A impersonation threat occurs when an invigilator colludes with fraudulent students allowing the fraudulent act. Type B impersonation threat asks, "is the student really whom they say they are?" Type C impersonation threat occurs when the correct student logs in, allowing the fraudster to continue with the test or assignment on their behalf. Finally, Type D occurs when there is a lack of user information, such as biometrics.

Once the 20 best practices for reducing plagiarism and impersonation in online courses were conceptualized, the first survey was developed and distributed to the faculty. The results were collected and tabulated via a crosstab generated through Qualtrics. The following list of the 15 best practices for reducing plagiarism and impersonation in online assignments was revealed from the first survey's results. The alphabetical list included: Anti-Plagiarism tools, Assessment Design, Authenticity Through Passwords and IDs, Authenticity Via Bimodal Biometrics,

Authenticity Via Biometrics and Physiological and Behavioral, Clear and Concise Definition, Detailed Instruction, Honor Pledge, Integrity Policy, Lockdown Browsers, Proctoring-In-Person, Proctoring Live, Proctoring Web Video Recording, Respondus Monitoring, and Stricter Time Limits. Next, a new survey was developed from the 15 best practices and distributed to the participants. The results were collected and tabulated again via a crosstab generated through Qualtrics. The 10 best practices for reducing plagiarism and impersonation in online course assignments were revealed. They are listed alphabetically: Anti-Plagiarism, Assessment Design, Authenticity Through Password and IDs, Authenticity Via Bimodal Biometrics, Authenticity Via Biometrics Physiological and Behavioral, Lockdown Browser, Proctoring In-Person, Proctoring Live, Proctoring Web Video Recording, and Respondus Monitoring. After further analysis, an erroneous error disclosed that a clear and concise definition was removed while Respondus Monitoring remained on the best practices list. As a result, the ten best practices faculty believed could reduce impersonation in online course assignments were re-established. The updated list and how it came to fruition is found under Research Question 4 conclusion.

Research Question 3-What current practices do online faculty believe universities have employed to reduce plagiarism and impersonation in online course assignments?

Five interviews were conducted with faculty who teach in a fully online program. The respondents shared several practices their university employed to reduce plagiarism and impersonation in online course assignments. The only practice stated as being used that was missing from the best practices list was utilizing discussion threads. The respondents indicated using anti-plagiarism tools such as Safe Assign and Turnitin. Lockdown browsers and Respondus Monitoring were suggested as being used for low-stake exams. Proctor U and Examity were proctoring services mentioned for high-stake exams. Several respondents used

assessment design, which was detailed in various ways, from multiple choice with large question pools, randomization of the question, and even two versions of the same test. Stricter time limits, word counts on essays, and password student ID authenticity were indicated as being used.

Research Question 4-In what ways do the survey and interview data align with one another?

The interview aligned with the survey in several ways. First, the interview respondents agreed with the inclusiveness of the list compiled from the survey results. They indicated that none of the practices should be removed, though they would consider the order. The faculty mentioned adding only one practice to the list: creating discussion threads to deter students from being tempted to copy. Finally, the interview respondents specified current practices they or their university used to reduce plagiarism and impersonation in online assignments. Most of the best practices listed in the top 10 were used at their universities. The ones that were not utilized were biometrics, previously mentioned as costly.

The most notable alignment between the interviews and the survey became evident when configuring table 5. A researcher error resulted in a clear and concise definition being removed from the top ten list while Respondus Monitoring erroneously remained. The interviews were already completed with the erroneous top 10 best practice list. The researcher analyzed the interview responses further. It was determined that a clear and concise definition was not mentioned in any of their practices, yet Respondus Monitoring was mentioned several times. Respondus Monitoring was further studied, and it concluded that since it is a type of software that records both video and audio, it would be best combined with proctoring web video recording. It does need to be acknowledged that Respondus Monitoring requires the Respondus LockDown Browser application. A clear and concise definition could have easily replaced

Respondus Monitoring in the top 10 list. However, it would not have aligned the interview respondents' perspectives with the study.

Discussions and Applications

This study aimed to examine how plagiarism and impersonation can compromise the academic integrity of online courses. A mixed-method triangulation approach to gathering expert data was employed to compile a list of the 10 Best Practices for Reducing Plagiarism and Impersonation in Online Assignments. First, the extensive literature review provided the 20 best practices for reducing plagiarism and impersonation in online assignments. Then, the list was narrowed down via the Delphi method, and the final list was aligned with the interview respondents' perspectives.

The results of this study support previous research. Previous research revealed how and why students commit plagiarism and impersonation online. In addition, studies showed Plagiarism and impersonation reduction methods in place. However, the increase in online programs, coupled with advancing technology, has exacerbated the need for establishing a best-practice approach. The study revealed that universities lack a protocol for reducing plagiarism and impersonation in online assignments. Most stated that it was at the discretion of the universities.

The study established several implications expressing the need to reduce plagiarism and impersonation in online assignments. First, results showed that faculty who teach in a fully online bachelor's degree program utilizes several research-based best practices even though their universities do not require them. Universities should set protocols for reducing plagiarism and impersonation in online assignments for all online degrees. Faculty should have available resources to assist them in reducing plagiarism and impersonation and ensuring the academic

integrity of online degrees. The established best practice list embodies a diversity of practices faculty can use even if cost is an issue. Incorporating a best-practice approach could enhance faculty in reducing plagiarism and impersonation, thus ensuring the academic integrity of online courses.

Recommendations for Further Research

This study aimed to establish a best practice approach to reducing plagiarism and impersonation in online assignments, thus ensuring the academic integrity of fully online bachelor's degree programs. Additional research utilizing the 20 best practices survey and incorporating a description of the best practices may result in differing viewpoints on the ordering. A detailed description of the practices may also increase the survey response rate and encourage more faculty to participate in the interviews. Furthermore, conducting the survey in the fall or spring of the academic year could increase the survey and the interview participation rate.

The research was designed to collect data from faculty teaching in a fully online bachelor's degree program, limiting the current study to bachelor's degree programs. Therefore, a future study could include graduate degree programs. Likewise, a prospective study could investigate bests practice differences between bachelor's and graduate degree programs. Further research investigating which universities have a best practice protocol for online degree programs and what practices they incorporate could be an appreciated addition to the 10 best practices for reducing plagiarism and impersonation in online assignments.

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Appendix A Marshall University: IRB Letter of Approval

MARSHALL UNIVERSITY®
www.marshall.edu

Office of Research Integrity
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704

IRB1 #00002205
IRB2 #00003206

August 10, 2022

Thomas Hisiro, Ed.D.
Leadership Studies, COEPD

RE: IRBNet ID# 1941112-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Hisiro:

Protocol Title:	[1941112-1] A MIXED-METHOD TRIANGULAR APPROACH TO BEST PRACTICES IN COMBATING PLAGIARISM AND IMPERSONATION IN ONLINE BACHELOR'S DEGREE PROGRAMS
Site Location:	MUGC
Submission Type:	New Project APPROVED
Review Type:	Exempt Review

In accordance with 45CFR46.104(d)(2), the above study was granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee. No further submission (or closure) is required for an Exempt study **unless** there is an amendment to the study. All amendments must be submitted and approved by the IRB Chair/Designee.

This study is for student Alice Johnson Stephens.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/ Behavioral) Coordinator Lindsey Taylor, at 304-696-6322 or price100@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,

Bruce F. Day, ThD, CIP
Director, Office of Research Integrity

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Generated on IRBNet

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Appendix B: Participation E-Mail/Informed Consent

Survey Consent

Greetings,

You are invited to participate in a research project entitled: *A Mixed-Method Triangular Approach to Best Practices in Combating Plagiarism and Impersonation in Online Bachelor's Degree Programs.* The study analyzes and develops best practices in combating plagiarism and impersonation in online degree programs. The study is being conducted by Dr. Thomas Hisiro and Alice Johnson Stephens from Marshall University and has been approved by the Marshall University Institutional Review Board (IRB). The research is being conducted as part of the Doctor of Education (Ed. D) in Leadership Studies for Alice Johnson Stephens. You received this invitation to participate in the study because you have taught in a fully online bachelor's degree program.

The survey is a ranking questionnaire of twenty best practices for combating plagiarism and impersonation in online bachelor's degree programs. It will take approximately 15 minutes to complete. It will consist of two rounds. In the first round, you will be asked to rank the twenty best practices from the most effective to the least effective. Once the survey is completed, the researcher will reduce the list to 15 best practices. Then, a second survey will be e-mailed asking you to rank the 15 best practices in order from most to least effective in combating plagiarism and impersonation in online bachelor's degree programs. Upon completing the 15 best practices, the researcher will narrow the list down to the top 10 best practices.

Your replies will be anonymous, so please do not type your name anywhere on the form. There are no known risks involved with this study. Participation is completely voluntary, and there will be no penalty or loss of benefits if you choose not to participate in this research study or if you choose to withdraw. Completing the online survey indicates your consent for using the answers you supply. Once you complete the survey, you can delete your browsing history for added security. If you have any questions or concerns about the study, you may contact Dr. Thomas Hisiro by e-mail @ hisiro@marshall.edu or by phone at (304)-746-2516, Alice Johnson Stephens by e-mail @ johnson1606@marshall.edu or by phone at (740)-646-4959.

If you have any questions concerning your rights as a research participant, you may contact the Marshall University Office of Research Integrity at (304)-696-4303

By completing this survey, you are also confirming that you are 18 years of age or older.

Please print this page for your records.

Please complete the survey within two weeks of receiving this e-mail

If you choose to participate in the study, you can access the survey at the following link or by scanning the QR code.
 https://marshall.az1.qualtrics.com/jfe/form/SV_6mT6WqkBhib9Xq6

Upon completing the surveys, I will be conducting interviews regarding the study's results. If you are interested in participating in a short interview, please click yes at the end of the survey. You can also access the interview participation link below or by scanning the QR Code. The link allows you to provide contact information for the researcher to set up an interview time.

https://marshall.az1.qualtrics.com/jfe/form/SV_ePB8I5K3oULkNDM

Sincerely,

Alice Johnson Stephens,
Assistant Professor Shawnee State University
Doctoral Candidate Marshall University
(740)-646-4959
johnson1606@marshall.edu or astephens@shawnee.edu

Participation E-Mail 2

Good evening,

My name is Alice Johnson Stephens. I sent out an e-mail three weeks ago detailing a study I am conducting for my dissertation research. I am profoundly grateful for your participation. The first-round study data has been analyzed, and a new ranking survey has been developed. Like the first survey, your replies are anonymous, so please do not type your name anywhere on the form. If you previously agreed to an interview, you will be contacted upon the completion and analysis of the data from this survey. The following link or QR code can be utilized to take the second and final round of the study.

You can access the survey from the following link:
https://marshall.az1.qualtrics.com/jfe/form/SV_3ItwlxAVHlpkhCK
Or the following QR code.

Sincerely,

Alice Johnson Stephens,
Assistant Professor Shawnee State University
Doctoral Candidate Marshall University
(740)-646-4959 johnson1606@marshall.edu or astephens@shawnee.edu

Interview E-Mail

Good evening,

I hope you are having a wonderful day. The survey of the Best Practices in Reducing Plagiarism and Impersonation in Online Assignments is complete. First, thank you for taking the time to participate in both rounds of the survey. The survey results helped me to compile a list of 10 best practices for reducing plagiarism and impersonation in online assignments. Within the first-round survey, you were asked to read a verbal consent that invited you to participate in a brief 15–30-minute interview. If you are still willing to take part in the interview, please let me know a time and day that works best for you. I can send you a Zoom (or any platform you prefer) link to conduct the interview. I am attaching the 10 Best Practices for Reducing Plagiarism and Impersonation in Online Assignments survey results. The first section is in alphabetical order and the second section depicts the actual ranking results order. I have also attached a list of interview questions for you to have prior to the meeting. Please contact me as soon as possible, I plan to start setting up interviews next week. I want to thank you again for your time.

Thanks

Alice Johnson Stephens,
Assistant Professor Shawnee State University
Doctoral Candidate Marshall University
(740)-646-4959 johnson1606@marshall.edu or astephens@shawnee.edu

Best Practices for reducing plagiarism and impersonation in online assignments.

Q1 Do you teach in a fully online bachelor's degree program?

◯ Yes (1)

◯ No (7)

Skip To: End of Survey If Do you teach in a fully online bachelor's degree program? = No

Q2 Which of the following best describes your teaching status in the fully online bachelor's degree program?

◯ Full-time (1)

◯ Part-time (2)

◯ Adjunct (3)

Q3 How long have you been teaching online?

◯ 0-5 years (1)

◯ 6-10 years (2)

◯ 11-15 years (3)

◯ Over 15 years (4)

Q4 Please rank the following list of the 20 best practices that were compiled from an extensive literature review. Rank the practices from most effective to least effective in reducing plagiarism and impersonation in online assignments. Use the drag and drop feature.

_____ Anti-Plagiarism Tools (1)
_____ Assessment Design (2)
_____ Authenticity Through Passwords and IDs (3)
_____ Authenticity Via Biometric Physiological & Behavioral (4)
_____ Authenticity Via Bimodal Biometrics (5)
_____ Clear and Concise Definition (6)
_____ Detailed Instruction (7)
_____ E-Tutorial (8)
_____ Honor Pledge (9)
_____ Implementation of Group Work (10)
_____ Integrity Policy (11)
_____ Lockdown Browsers (12)
_____ Online Committees (13)
_____ Proctoring In-Person (14)
_____ Proctoring Live (15)
_____ Proctoring Video Summarization (16)
_____ Proctoring Web Video Recording (17)
_____ Respondus Monitoring (18)
_____ Stricter Punishment (19)
_____ Stricter Time Limits (20)

Q5 To further validate this study, I will be conducting interviews. If you would like the

opportunity to participate in a brief interview, please select the yes response below.

○ Yes (1)

○ No (2)

Skip To: End of Survey If To further validate this study, I will be conducting interviews. If you would like the opportunity... = No

Skip To: End of Block If To further validate this study, I will be conducting interviews. If you would like the opportunity... = Yes

End of Block: Default Question Block

Best Practices for reducing plagiarism and impersonation in online assignments top 15.

Q1 Please rank the following Updated list of the 15 best practices that were compiled from an extensive literature review and narrowed down by the first-round survey. Rank the practices from most effective to least effective in reducing plagiarism and impersonation in online assignments. Use the drag and drop feature.

_____ Anti-Plagiarism Tools (1)
_____ Assessment Design (2)
_____ Authenticity Through Password and IDs (3)
_____ Authenticity Via Biometrics Physiological and Behavioral (4)
_____ Authenticity Via Bimodal Biometrics (5)
_____ Clear and Concise Definition (6)
_____ Detailed Instruction (7)
_____ Honor Pledge (8)
_____ Integrity Policy (9)
_____ Lockdown Browsers (10)
_____ Proctoring In-Person (11)
_____ Proctoring Live (12)
_____ Proctoring Web Video Recording (13)
_____ Respondus Monitoring (14)
_____ Stricter Time Limits (15)

Appendix E : Vitae

<u>Personal Contact Information</u>
Alice Stephens
Address: 103 Freeman Court
       South Point, OH
       45680
Cell Phone-740-646-4959
Office Phone-740-351-3019
E-mail: astephens@shawnee.edu

<u>Education</u>
       Marshall University
           Student in the Ed. D Leadership Studies

       Western Governors University
       Master of Business Administration in Healthcare Management
       August 23, 2016

       Florida Hospital College of Health Sciences Bachelor of
Science in Radiologic Sciences
       December 07, 2007

       Shawnee State University
       Associate of Applied Science in Radiologic Technology
       August 1996

       South Point High School Diploma
       May 25, 1991

       <u>National/State Certifications</u>
       American Registry of Radiologic Technologists
       Registered in Radiological Sciences and Computed Tomography
       October 1997-current
       ID Number-313033 Expiration 10/2022
       Department of Health-State of Ohio
       License Number- R2564602 Expiration 10-2023

<u>Professional Work Experience</u>
       08/26/2018 to Present
       Assistant Professor BSHS
       Shawnee State University
- Classes I have taught in the BSHS program:
  - BSHS 3100-The US Healthcare System-on ground and online
  - BSHS4250-Leadership in Healthcare-online

- o   BSHS 4300-Concepts of Healthcare Finance-on ground and online
- o   BSHS 4400-Healthcare Policy and the Aging-on ground and online
- o   BSHS 4600 Survey of Disease/Disabilities-on ground

- I have developed four courses for (Wiley) the E-campus in the BSHS program.
- Advising students in the BSHS program.

02/12/2001 to Present
Staff Radiographer
Southern Ohio Medical Center
- Identifies patient service requirements by establishing a personal relationship with probable and actual patients and others to understand examination requirements.
- Ensures operation of radiology equipment by completing preventive maintenance requirements, following manufacturer's instructions, troubleshooting malfunctions, calling for repairs, maintaining equipment inventories, and evaluating new equipment and techniques.
- Complies with federal, state, and local legal and professional requirements by learning existing and new legislation. Must maintain a safe and clean working environment.
- Maintains technical and professional knowledge by attending educational workshops, reviewing professional publications, and establishing personal networks.
- Prepares patient for radiological procedures by positioning, adjusting immobilization devices, moving equipment into a specific position, and adjusting exposure factors.
- Minimizes radiation to patients and staff by practicing radiation protection techniques, using beam-restrictive devices, patient shielding, and knowledge of exposure factors.
- Protects patients and employees by following infection-control policies and protocols, following drug protocols in case of drug reactions, such as contrast media, administering first aid, and using the emergency cart.
    - We must document patient care services by charting in patient and department records. Contributes to team effort by accomplishing related results as needed.
- Charge duties

01/11/2017 to 08/01/2018
Adjunct College of Health Sciences
Shawnee State University
- Primary duty was teaching Concepts of Healthcare Finance
- Preparing lectures
- Answering student e-mails
- Having office hours prior to class
- Grading

Professional Affiliations
- American Registry of Radiologic Technologists 1997-Present

Professional Development

Quality Matters-Independent Applying the QM Rubric-11/13/2018
The Learning House- Using Video in online courses 03/21/2019
Assessment Workshop 1 09/23/2019
Assessment Workshop 2 10/02/2019
QM A Discussion About Discussions: Increasing Student Interaction in Discussion   Boards-
04/22/2020
AASCU Webinar Series Part 1-Getting Beyond Misinformation and Malformation in
Online Learning 04/16/2020
IPED Regional Teaching Conference Marshall University 05-06-2020
Assessment Workshop 20-21
- NSSE Results presentation 09/24/2020
- Co-Curricular Assessment Basics 10/8/2020
- An Introduction to Institutional Accreditation & the Higher Learning Commission 11/05/2020
- Qualitative Research & Assessment 11/11/2020
Lily Conference online 11/30/2020-12/04/2020
Lily Conference reboot online 2/17/2021-02/18/2021
Learning Outcomes Workshop 10/27/2021
Simplify Your Assessment Plan 10/12/2021
Guide to Building Mobile Content 10/19/2021
Using Groups in Blackboard Learn Ultra 10/28/2021
Voices of Change-Hazing 2/02/2022
How a mix of QM, Analytics, and Data Inform Continuous Improvement 02/15/2022

University Committees

Distance Learning Committee 2019-current
Academic Affairs Committee 2020-current
Master's in Public Health Committee 2021-current
Allied Health Sciences Department Bylaws Committee 2021-current

Service

Shawnee State University
Clinical Instructor-08/2012 to 2019
Instruct students in clinical aspects of performing radiographic examinations.
- Demonstrates positioning techniques.
- Demonstrates use of equipment and safety precautions.
- Evaluates performance.
- Provide additional training as required.
- Supervises students performing radiological procedures.
- Listen to students and co-workers to resolve conflicts and establish good communication.
- Instruct students on SOMC hospital policy.
- Communicate with the program director at Shawnee State University.

Shawnee State University
Volunteering at the Portsmouth ice skating rink-2019
"I am First Gen" Mentor 2020,2021, 2022
Led the Virtual IPE Committee 2020-2021

Scholarship - Additional certification

- How to use "Zoom" SSU-TLC Webinar 11/27/2018
- SSU Online Showcase 1-12/03/2018
- Building Community in the classroom-03/5/2019
- Online Showcase II-04/15/2019
- COVID-19 Awareness and Prevention 09/02/2020
- Shawnee State University: Human Trafficking Awareness 01/22/2020
- A Discussion About Discussions: Increasing student Interaction in Discussion Boards
- Inside Higher ED-Student, Faculty, And Administrator Perspectives on Impactful Digital Learning in The Community College" 11/30/2021
- Title IX for employees-
    - o 09/12/2019
    - o 09/09/2020
    - o 09/02/2021
- Ohio Ethics Commission
    - o 11/03/2020
    - o 12/03/2021
- FERPA
    - o 10-18-2019
- Report from the SSU-Faculty Delegation to the 2020-2021 online Lilly Conference 04-2021