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Academic integrity graphic novel mini-cases

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Abstract

Academic integrity is a crucial aspect of the educational process, often receiving insufficient attention until a violation occurs. Researchers emphasize the importance of students comprehending academic integrity to foster ethical professionalism. However, there is a lack of resources available to effectively support these conversations. This study aims to assess academic integrity efficacy and the multi-dimensional ethical scale (MES) through the use of a graphic novel mini-case study. The analysis reveals a significant relationship between academic integrity efficacy, MES dimensions (moral equity, relativism and contractualism), and the case studies among undergraduate participants. The combination of quantitative and qualitative findings provides valuable insights into how graphic novel mini-cases can engage in academic integrity discussions with undergraduate students. The graphic novel mini-cases, along with their limitations and potential for future research, are provided.

Keywords: Academic integrity, Ethical efficacy, Graphic novel, Case study, Higher education

Academic integrity

Promoting academic integrity holds significant importance in the educational journey, fostering a collaborative learning environment for both students and faculty. It is essentially a moral compass embedded in the ethos of academia, embodying values such as honesty, trust, fairness, respect, responsibility, and courage (McCabe 2016; ICAI 2022). The concept of self-concept control underscores individuals' ability to regulate their own honesty, acknowledging the persistence of instances of dishonesty in societies (Mazar et al. 2008). Teaching academic integrity has become even more important in recent years due to the rapid transition to online learning and assessment in the midst of the global COVID-19 pandemic. The global pandemic heightened concerns regarding violations in academic integrity due to its perceived influence on the rising rate of such violations (Monico 2021; Goff et al. 2020, Reich & OMN 2020). Students report a lack of interest in academic integrity concerns and resistance to the academic integrity guidelines that are supported by their university (Anohina-Naumeca et al. 2020).

Teaching and upholding academic integrity have become even more crucial in the face of the accelerated shift to online learning during the global COVID-19 pandemic. The transition to digital platforms has heightened concerns about potential violations, with students expressing resistance to university-supported academic integrity guidelines

(Anohina-Naumeca et al. 2020). Addressing these concerns involves experts in the field striving to navigate implicated practices, guided by a shared understanding of academic integrity that transcends disciplines (Kahn et al., 2020). These platforms give students the "easy way out," especially college students that are insufficiently prepared. Additionally, concerns about the impact of commercial cheating sites on students and the challenges posed by changing student perceptions in a shared economy context have surfaced (Peters, 2019). Shared economy is also referred to as *collaborative consumption,* which highlights preferences to rent or borrow rather than take ownership. For example, the implementation of the academic integrity survey conducted by the International Center for Academic Integrity are continue efforts to explore the effects of academic integrity on higher education (ICAI 2022).

Over the past few years, numerous developments have aimed to shift the attitude away from the 'us' versus 'them' mindset between faculty and students, instead fostering a shared expectation regarding academic behavior (Manly et al. 2015). Manly et al. (2015) also addresses the concerns of the change in the digital environment and the ease of use with the internet questions ethical standards in higher education. Browdowsky et al (2020) found that there is a relationship between academic dishonesty and unethical business behavior. The proactive approach to academic integrity may be seen as a more Western-focused notion of integrity. As students deliberately ignore, skim or scoff at academic integrity clauses provided by universities as a required statement in class syllabi, there is value to providing a more engaging way to communicate the importance of the academic integrity message. Students and faculty rarely discuss, in-depth, issues related to academic integrity until there is a violation. Academic dishonesty in the college setting contributes to unethical behavior post college. Exploration of academic dishonesty within clinical education has the potential to have devastating consequences for patients and the wider health community (Maoz et al. 2022). Addressing this issue now may prevent future misbehaviors.

Proactively addressing academic integrity involves moving beyond a Western-focused notion and finding engaging ways to communicate its importance, as students often overlook or dismiss integrity clauses in syllabi until a violation occurs (Manly et al. 2015). Delving into the reasons behind academic dishonesty is essential, and research suggests that appealing to student morality and discussing cheating behaviors can help create a zero-tolerance understanding (Browdowsky et al. 2020). Research suggests the need to help professors take proactive measures to prevent cheating and unethical behavior before it occurs, rather than reacting to these behaviors after they occur (Browdowsky et al. 2020). Post-COVID, the need to innovate traditional methods to enhance learning experiences is evident, with a focus on preventing unethical behavior rather than reacting to it (Reich 2020). Understanding the root causes of integrity violations is paramount, and the research presented here offers a valuable tool to foster student engagement and ethical awareness in the realm of academic integrity.

novel in higher education

O'Sullivan and Kuznets (2020) state that the graphic novel form is an innovative approach to explore consumer behavior changes as it is accessible, inspires a high degree of reader engagement, and permits for the integration of difficult concepts (Short & Reeves 2009). Literary scholars have shown interest in graphic novels (e.g. Maus and

Persepolis) given that they discuss the historical, political, religious, and social contexts that shape perspectives and inform students on issues of diversity (Moran 2007). Chutes and DeKoven (2006) note that there is no need to argue the worthiness and literary potential of the medium of graphic novels and only a limited number of research studies has been devoted to understanding the use of graphic novels as a training tool for higher education. Atlas Black (Short & Reeves 2009) is one example of a graphic novel in higher education where characters play out the application of management skills and concepts. One application involves the utilization of graphic novels to educate sales professionals about the repercussions of bribery within the workplace (Fischbach 2015). More recently, graphic novels have been used to understand empathy with respect to issues of diversity, equity, inclusion and social justice (Carlson et al. 2022). Applying this medium to academic integrity, we have developed several mini graphic novel cases to stimulate conversation between faculty and undergraduate students about academic integrity in higher education.

Academic integrity graphic novel mini-cases

Over a period of 20 years, we have conducted interviews with a diverse group of faculty and staff members encompassing various disciplines from two universities located in Southern California. The insights and narratives gathered from these interviews served as the foundation for the creation of the academic integrity graphic novel mini-cases. The compiled narratives centered around two main themes (1) college hurdles and (2) student learning outcomes. In the graphic novel mini case studies, the college hurdles are depicted along the "x-axis," while the student learning outcomes (SLO) are represented along the "y-axis" (refer to Fig. 1). The themes for the college hurdles included starting college, college challenges, career advancement, and post college graduation. SLO included measurement tools that are often used in the classroom such as educational goals, competence and knowledge, developing expertise and several more common learning themes as listed in Table 1.

The graphic novel mini cases are two pages each in length. Each of the graphic novel mini cases describes a scenario that occurs when students are faced with common academic integrity dilemmas. The cases show two common narratives found in undergraduate students the *Learner* and *Hurdler.* The *Learner* includes such student traits as keep promises, provide factual evidence and model good behavior which may include good time management, sense of commitment, and responsible (ICAI 2020). Traits that may be considered as the *Hurdler* include: unreliable friend, cheating on exams, making excuses for avoiding exams (Blankenship & Whitely 2000, Guerrero-Dib et al. 2020). The cases are written to explore how students experience these dilemmas in the higher education setting. In our research, and modeled in the mini-case studies, that students may switch roles between a Hurdler and Learner and do not need to be classified as one or the other per the case study narratives explain. The case studies serve as a tool to examine the challenges students encounter, aiming to understand the coping mechanisms employed. Research indicates that when confronted with change, students may resort to both positive and maladaptive coping strategies (Co et al. 2023). For instance, stressors perceived as external motivators, such as the pursuit of grants, could potentially lead to increased instances of academic misconduct (Anderman & Midgley 2004). Additionally,

Fig. 1 Learning Outcome and Student Hurdles

Table 1 Graphic novel mini case themes

Cases and Themes	Characters in the Case and Student Learning Outcomes
Case 1: Citation and Competence	Hurdler "Bella" and Learner "Jose"
Time Management and Ghost Writing	(y axis) learning, knowledge and competence (x axis) assignments
Case 2: Exams Fall Prey to Cases of Academic Misconduct	Hurdler "Kenji" and Learning "Taya"
Time Management and False Excuses	(y axis) learning and competence (x axis) exams, punctual, reliable
Case 3: Borrowing work from friends	Hurdler "Raja" and Learner "David"
Improv Night and Preparation	(y axis) success after college (x axis) tests, reading, time management
Case 4: Future Success	Hurdler " Raja" and Learner "Kenji"
Academic Integrity violations are not always easy to catch	(y axis) Opportunities within the University (x axis) term papers
Case 5: Career Preparation Success/Failure	Hurdler "Bella" and Learner "Taya"
Academic Integrity Outside the Classroom	(y axis) career advancement (x axis) years after college

Characteristics of Learners: Respectful, Reliable, Responsible, Focused, and Goal Oriented

Characteristics of Hurdlers: Stressed, Disengaged, Poor Time Management, and Disrespectful

studies suggest that higher levels of self-efficacy concerning academic integrity are associated with reduced rates of cheating (Nora & Zhang 2010). It is not the students that have the lists of traits consistently, rather the traits are a circumstance of their situation. The graphic novel cases explore the following academic integrity scenarios, which include citation and competence, future success and borrowing work from fields. A full copy of the five mini-cases and characters can be found in the Appendix. The entire case contents are open access and available for use in the classroom.

Each mini case concludes with a coordinated grid line graph showing the relationship between student learning outcomes (y-axis) and that which hurdlers need to overcome (x axis). For example, in the first page the (y) axis is "learning and knowledge/competence" and the (x) axis is "assignments". The visual image shows the hurdler tripping over the hurdle assignments whereas the learner is climbing the line graph with courage and ease. See Fig. 1 as an example of the student learning outcome graph from the case introduction.

Academic integrity and ethical analysis

In order to assess the effectiveness of the mini-cases the use of academic integrity efficacy was applied as a measure of analysis. Self-efficacy pertains to an individual's belief in their ability to exert control over their own actions or behaviors (Bandura 1997). Bandura's concept of self-efficacy offers a framework for influencing cognitive self-evaluations, including those related to discussions on academic integrity. Academic efficacy is ultimately derived from ethical efficacy (Ferrell 1996) as it addresses the individual's ability to make ethical decisions when encountering an ethical dilemma. Ethical efficacy, which centers around self-efficacy, has been used as measure of ethics learning and training (i.e. Jensen & Richert 2005); and in several other contexts, has been associated with an individual's capacity to act upon a situation (i.e. Tipton & Worthington, 1984). Research in social cognitive theory has found that self-efficacy varies as a function of the ethical climate in a particular situation (Shacklock, Manning, & Hort 2011). For example, studies that detail the experiences of a student confronted with an academic integrity violation situation, show that the student's level of self-efficacy may increase or decrease according to the specific situation they are encountering. Research shows that students with high self-efficacy results in lower rates of cheating (Murdock et al. 2001; Nora and Zhang 2010). Therefore, ethical-efficacy, or the students' level of confidence on how to ethically address the academic integrity situation may be influenced by they perceive themselves in situations of cheating. Ethical efficacy includes all three of these measures: (1) self-efficacy, (2) involvement and (3) principle-based ethics in order to calculate the ability to face the academic situation. Previously, ethical efficacy has been incorporated into ethics education using a graphic novel approach. This method aims to enhance motivation, awareness, and the value of ethical efficacy among employees, particularly those with limited experience in the field (Fischbach 2015). This discovery aligns with the experience of undergraduate students undergoing training in their respective fields of study. In order to tackle challenges associated with academic integrity, the ethical efficacy scale has been adapted to encompass academic integrity efficacy.

From this perspective, the application of academic integrity efficacy assessments determines the students' capacity to actively involve themselves in academic integrity scenarios discussed. By engaging in academic integrity mini-cases presented in a graphic novel format, students have the opportunity to enhance their academic integrity efficacy, thereby bolstering their confidence in decision-making.

Hypothesis 1: There is a significant increase in academic integrity efficacy (a) self-efficacy, (b) involvement and (c) principle-based ethics through the graphic novel format mini-cases.

Furthermore, the research utilizes the multidimensional ethics scale (MES) to assess each mini-case across three ethical dimensions, aiming to gauge awareness of academic integrity. The MES has been used to measure individual choices such as respect and responsibility (Shawver and Sennetti 2009) and academic integrity (Manly et al. 2015). In the study developed by Manly et al 2015, it was observed that moral equity, relativism and contractualism exhibited the most significant correlations with ethical awareness concerning academic integrity and technology. Following a similar research approach, this study aims to assess students' awareness of these elements by measuring them in each of the mini-case studies. For further analysis the following dimensions are elaborated on below: Moral equity, relativism and contractualism.

Moral equity pertains to the concepts of what is considered right and wrong and can be seen as a component of Justice Theory (Reidenbach & Robin 1990). It encompasses notions of inherent fairness, justice, goodness, and righteousness. This implies that the foundations of moral equity are established within the household, through early childhood teachings concerning fairness and distinguishing between right and wrong. The evaluation of moral equity can be observed through the examination of mini-case studies, such as the scenarios on "Citations and Competence," and "Borrowing work from Friends."

Relativism examines the guidelines, requirements, and boundaries that are ingrained within the social and cultural systems (Reidenbach & Robin 1990). This concept posits that an individual's ethical beliefs are heavily influenced by society and culture, and there are no universally applicable ethical principles that govern everyone. Relativism finds resonance in the scenario, "Future Success," where the challenge of detecting academic integrity violations is highlighted, emphasizing that such violations are not always easily identifiable.

Contractualism is a component of Deontology theory that explores the notion of a social contract between businesses and society (Reidenbach & Robin 1990). It encompasses the idea of an implicit responsibility, set of rules, obligations, or agreements. Contractualism finds alignment with the scenario, "Career Preparation Success/Failure," where the importance of fulfilling one's responsibilities and adhering to contractual obligations is emphasized in the context of career preparation.

The mini-case studies address elements of the MES Scale as students learn to understand how they would respond to the academic integrity dilemmas. To visualize the analysis tool of the MES Scale, refer to Fig. 2 for a detailed depiction.

The objective of this study is to analyze the influence of academic integrity graphic mini cases on student's perceptions and explore their ethical awareness by utilizing the MES assessment tool. The following hypotheses are formulated to assess the changes in students' viewpoints as a result of utilizing these mini cases.Hypothesis 2: There is a significant increase in principles of the multidimensional ethics scale (MES) (a) moral equity, (b) relativism and (c) contractualism through a graphic novel format mini-cases.

Classroom activity

The graphic novels were introduced to students during the first week of class, typically on the second day of a biweekly class format. This activity typically spans 20-30 minutes, varying based on class size and participation. The methodology involves distributing the

MES Scale - Ethical Awareness (Dependent Variable) -- Is it ethical?
Adapted from Reidenbach and Robin 1990 MES Scale

The action by Academic Integrity is:

Ethical 1   2   3   4   5   6   7 Unethical

MES Scale:
With respect to the action by Academic Integrity, I would consider it:

Moral Equity --
Unjust 1 2 3 4 5 6 7 Just
Unfair 1 2 3 4 5 6 7 Fair
Not morally right 1 2 3 4 5 6 7 Morally right
Not acceptable to my family 1 2 3 4 5 6 7 Acceptable to my family

Relativism
Culturally Unacceptable 1 2 3 4 5 6 7 Culturally Acceptable
Traditionally Unacceptable 1 2 3 4 5 6 7 Traditionally Acceptable

Contractualism
Violates an unwritten contract 1 2 3 4 5 6 7 Does not violate an unwritten contract
Violates an unspoken promise 1 2 3 4 5 6 7 Does not violate an unspoken promise

Fig. 2 Multidimensional ethics scale (MES)

questionnaire to students via the class's online learning management system outside of class hours. Before delving into academic integrity discussions, students are familiarized with the coursework, their peers, and the class expectations. An academic policy, as outlined in the syllabus, is also presented to the students.

The syllabus emphasizes the expectation of academic honesty, explicitly stating the consequences for possessing unauthorized materials during exams or engaging in unauthorized aid. Additionally, it firmly addresses plagiarism, dishonesty, or misrepresentation of someone else's work, emphasizing a zero-tolerance policy and the commitment to report such violations to the University Academic Integrity Committee.

Following this, an examination of the use of graphic novels in higher education expands beyond their initial entertainment value (e.g., Thalheimer 2009 and Tabachnick 2009). Books like Atlas Black (Short et al. 2010), Maus (Spiegelman, 1986), and Cancer Vixen (Marchellto, 2004) are showcased to illustrate how scholars have utilized graphic novels, underscoring their incorporation in academia to offer diverse viewpoints and educate students on various issues.

Subsequently, students are divided into groups to spend approximately 5 minutes perusing the graphic novels. Following this, they engage in group discussions addressing questions provided at the conclusion of the mini-case studies. These questions encompass various topics:

- Addressing the prevalence of academic integrity issues at their university.
- Circumstances under which they might consider deviating from core values.
- Exploring whether ethics can be taught or are inherently ingrained in individuals.
- Examining the correlation between ethics training, codes of ethics, academic integrity, and their relevance in the workplace.

- Analyzing the factors influencing the roles of a student as both a learner and a hurdler, exploring the attitudes associated with each role.

Methodology

The questionnaire was constructed to determine levels of effectiveness among undergraduate students at two private universities in Southern California. Data were collected via an online survey administered to undergraduate students. The research was collected under informed consent approval of the IRB number 20-09-1438 in order to protect anonymity, confidentiality and privacy of the study participants. Participants were asked to read graphic novel mini cases followed by in-class breakout discussion groups. Administration of the graphic novels are given at a later time through the online learning management system. The entire activity can be successfully completed within a 30-minute timeframe, comprising 10 minute classroom discussion on academic integrity and the use of graphic novels in higher education, 5 minutes for reading the graphic novels and 15 minutes allocated for breakout group discussions. The majority of students participating in the study were in either their sophomore or junior year of school. However, the data regarding their academic year was not collected and thus not included in the study results. The participation rate across the sample was 56%. A total of 194 surveys were completed. To conduct the analysis, respondents with missing responses were excluded, leaving a total of 108 usable responses. The sample was closely split between male (44%) and female (56%) students, and the gender breakdown was roughly equal across campuses. Students range in ages between 18 and 25 years, with an average median age of 22 years. Student majors were categorized as Business (58%), Science (19%), Arts (7%), Education (3%) and Other (12%). Others categorized themselves as Undecided (13%).

Measures

The study proposes and tests the relationship between students' understanding of ethics, academic integrity, and engagement with the graphic novel. Given the challenge of how to measure ethics and, in this case, academic integrity we included two scales that have been used to measure behavior and perceptions of that behavior. The ethical efficacy scale derived from Ferrell's (1996) dissertation on Gray Matters was used, which has also been used in the Daniels Fund Initiative survey and applied in the Fischbach (2015) study on bribery cases for sales professionals. The scale items were modified for the present study to address academic integrity. For example, one question states "I feel confident that my ability to make *ethical decisions* equals…." The question modification includes "I feel confident that my ability to make *academic integrity decisions* equals…". For the second scale, the multi-dimensional ethics scale (MES) provides the reasoning that an individual might use to explain behavior by examining five theories (Reidenbach and Robin 1991). In the study we utilize the Shawver and Sennetti (2009) scale termed compositive MES, which consists of 8 items that do not include the theory of egoism and utilitarianism. The three dimensions include: moral equity, relativism, and contractualism.

Analysis

The data was analyzed using SPSS statistical software. A total of 194 students participated in the assignment from two private universities in Southern California and 56% completed the Qualtrics questionnaire (*n*=108). There were no prevalent differences across the universities and therefore the data is combined in the final analysis. Students were asked to evaluate their experience with the mini-case studies on academic integrity and participate in the classroom discussion. To assess the validity of the constructs, nomological, convergent, and discriminant validity are addressed. As stated previously, validated scales from extant research were used demonstrating nomological validity. The ethical efficacy scale modified for academic integrity has been used in past research demonstrating nomological validity in the classroom. The scale exhibits a high level of reliability and consistency, as evidenced by a Cronbach's Alpha coefficient of 0.862. A one-sample t-test was analyzed to assess the difference with the null (M=4.0; 1-strongly agree to 5-strongly disagree). Results showed a strong degree of academic integrity efficacy growth related to the mini-cases given to the students to read and discuss (M=4.26; SD=.733, t [107] =3.71, *p*<.00). Breaking the academic integrity efficacy school down into its three subscales: (1) Self Efficacy (M=4.68, SD=.45, t[107]=15.83, *p*<.00), (2) Involvement (M=4.16, SD=.83, t[107]=2.04, *p*<.05), (3) Principle Based Ethics and (M=3.96, SD=.91, t[107]=0.46, *p*=.65) we are able to look at the areas of academic integrity efficacy that have the most significant impact. Overall results suggest that the mini-case studies on academic integrity were successful in improving students' level of self-efficacy and involvement when encountering an academic integrity dilemma. Therefore, Hypothesis 1 (a-b) is supported.

Students were asked to evaluate the action of the hurdlers in the mini-case studies by answering Likert-scaled questions in the multidimensional ethics scale (MES), which measures ethical awareness. The scale demonstrates high reliability and consistency, indicated by a Cronbach's Alpha coefficient of 0.971. In this study, the MES multidimensional scale, morality is measured with the following scale questions: unjust-just; unfair-fair; not morally right- morally right; not acceptable to my family to acceptable to my family. Relativism is measured by addressing culturally unacceptable to culturally acceptable and traditionally unacceptable to traditionally acceptable. Contractualism is measured with two scale questions: violates an unwritten contract – does not violate an unwritten contract; violates an unspoken promise and does not violate an unspoken promise. For a comprehensive overview of the scale employed in the study, please refer back to Appendix. A one-sample t-test was analyzed to assess the differences with the null for Moral Equity (M=5.69, SD=.87), Relativism (M=7.41, SD=1.07) and Contractualism (M=6.41 SD =1.07). To conduct the t-test for the MES, it was observed that students perceived the academic integrity as higher in moral equity (t[107]=*p*<.01) and contractualism (t[107]=4.09, *p*<.001) (test mean=2). On the other hand, Relativism was found to be higher and regarded as more culturally acceptable (t [107] =2.24, *p*<.05) (test mean=6). For detailed results please refer to Table 2. Due to the substantial impact of the findings, the result obtained from the MES scale could not be aggregated into a single mean score. The outcomes indicated that the MES was associated with students' perceptions of academic integrity through the mini-cases. As a results, Hypothesis 2 (a and c) is supported.

Table 2 Graphic novel mini case results

One Sample T-Test	Mean (SD)	t value	Results
Academic Integrity Efficacy	M=4.26 (.74)	3.71 ***	supported
Self-Efficacy (a)	M=4.68 (.45)	15.83 ***	supported
Involvement (b)	M=4.16 (.83)	2.04 *	supported
Principle Based Ethics (c)	M=3.96 (.91)	0.46	not supported
Multi-Dimensional Ethics Scale	Mean (SD)	t value	Results
Moral Equity (a)	M=5.69 (.87)	4.21**	supported
Relativism (b)	M=7.41(1.07)	2.24*	supported
Contractualism (c)	M=6.41(1.07)	4.09***	supported

* p<.05, **p<.01, ***p<.001

The academic integrity efficacy and multi-dimensional scale provide encouraging results in terms of augmenting academic integrity efficacy and promoting a comprehensive understanding of ethical principles across multiple dimensions. Similar to Manly et al (2015), students had significant correlations with ethical awareness concerning academic integrity and, in this study, the use of the graphic novel mini-cases. Moral equity and contractualism are concepts to address right and wrong (Reidenbach and Robin 1990) and both scored high in the students' findings. In this study, moral equity and contractualism had significant results. Therefore, this may also pave the way for students to express how they found the cases "just" and "fair" and "does not violate an unwritten contract." As that was seen in the scenarios on borrowing work from friends, students in the study may see this as moral equity that which is considered right and wrong in determining their academic integrity decision making. In addition, the scenario on career preparing looks at contractualism, which represents the students' contract with business and society (Reidenbach & Robin 1990). The significance of measuring contractualism in the MES could indicate students' responsibility in upholding the rules and obligations established by academic integrity. This, in turn, prompts classroom discussions on academic integrity, fostering conversations among students and faculty. Conversely, the lack of significance in relativism suggests that students may not strongly associate ethical beliefs with what they have learned about societal and cultural influences. Despite efforts to be inclusive in the case study, it is challenging to address all cultural biases comprehensively. Future exploration of the MES dimension of relativism could focus on societal influences that emerge later in students' college experiences (Manly et al. 2015). Further studies are needed to delve into this dimension of relativism.

Self-efficacy provides a measure of learning and training centered around self-efficacy (Jensen & Richert 2005). Regarding academic integrity efficacy, which stems from self-efficacy, the graphic novel mini cases could serve as a valuable platform for both faculty and students to collectively address these concerns. The utilization of graphic novels, as demonstrated by this study, facilitates a comprehensive exploration of efficacy and ethics-driven principles. Additionally, it offers students a conducive environment to actively engage with faculty on this vital topic within higher education. Classes where implementation of the academic integrity graphic novel may be most effective include research focused classes such as quantitative research,

qualitative research, communication research, marketing research and other degree-specific research courses. This new research may help minimize the impact of new technologies and the academic integrity challenges students may face giving them a tool to explore before entering into the dilemma in the workplace. However, a qualitative examination of the questions will provide further insights into the depth of these results.

Qualitative feedback from the 108 students who completed the survey provided additional data that enabled us to better understand how students engaged in learning about academic integrity violations and student learning outcomes. Participants were tasked with providing responses to questions discussed in the classroom. The use of the Qualtrics survey platform afforded students the opportunity to elaborate further on their thoughts pertaining to these questions. Utilizing an emerging theme rooted in grounded theory enables the application of a range of analytical approaches, characterized by reading in-depth text and interrupting the data based on past experiences. This is an iterative process involving theoretical sampling and continuous comparison of data across both emergent categories and within them (Williams 2008). The emergent themes center around the concept of academic integrity within the university student population, encompassing advancements in technology (facilitating cheating) and external influences (such as upbringing, parental guidance, sibling dynamics, and environmental factors) as coping mechanisms for students in higher education.

Advances in technology

One of the main themes to emerge from participants' feedback was the influence of technology on academic integrity. Researchers asked the following question: "Is Academic Integrity a problem at your university?" Three students highlighted here suggest that technology makes it easier for students to be dishonest especially during COVID and online learning.

> *"Yes, I think students break the academic integrity policy because it's become so much easier to cheat and find assignments online, from friends, etc." (Student A)*

> *"I think academic integrity is a problem at our university especially after spending a year and a half in an online learning environment. I believe that students have learned to work the system to their advantage." (Student B)*

> *"Yes, because it is fairly easy to cheat. I feel that some professors honestly don't check sources most of the time." (Student C)*

External factors

A majority of participants noted external factors that influence academic integrity. When asked if they "believe that ethics can be learned, or is it something an individual has internally", three students made the connection that life circumstances may contribute to students' ethical or unethical behaviors.

> *"We all have it internally but have to be constantly educated and reminded." (Student D)*

"I believe ethics can be learned. People can grow up in all types of situations where some things are deemed normal while others are not. Therefore, what may be considered wrong by one person may not be bad at all of another. A person can learn that something is wrong to do and can things differently." (Student E)

"I believe it's something an individual has internally since we learn right from wrong at a young age. If you're still copying off your best friends' tests in college, you shouldn't be in that college. (Student F)

Other students highlight the importance of academic integrity in their lives, such as the value of academic integrity in the workplace and success in life.

"It's important to ensure that every student understands and values academic integrity." (Student G)

"I think there is a blurred line when it comes to academic integrity, and the graphic novel made it more clear on what academic integrity is and what it means to the student education" (Student H)

"Academic Integrity relates to ethics because if you have no respect for other people, you cannot work together and succeed in life?" (Student I)

The above comments from students point to the critical need of addressing the downside of technology and its effects on academic integrity. The results delve into how the graphic novel format enhances students' perception of academic integrity within the academic setting. Higher education has an increased emphasis on improving student engagement (Carini et al. 2006). Studies explore ways to enhance student engagement by fostering their commitment to the academic integrity culture (Co et al. 2023). Graphic novels, with their unique format, may offer this heightened level of engagement; however, further analysis is required to comprehensively assess the effectiveness of this method. While external factors may initially play a role in how students respond to questions about academic integrity, students can adopt new behaviors as a result from classroom instruction that will yield a more positive academic experience. Graphic novel mini-cases are an innovative tool to address issues of academic integrity by introducing new ways to modify students' unethical behavior and increase academic integrity in higher education.

Limitations and future research

The study provides evidence supporting the utilization of graphic novel mini-cases as a means to facilitate discussions on academic integrity among faculty and students. However, it is important to acknowledge the limitations in the study. The mini-cases encompass a wide range of academic integrity topics, including citations, ghostwriting, lying to professors and lack of faculty control over violations. Furthermore, participants in the study responded to the survey questions only once, both on academic integrity efficacy and the MES. It would be valuable in the future research to assess each topic individually to explore the outcomes in greater depth. Another limitation is the absence of a control sample with a hypothetical control sample being used instead. To ascertain the significance of the

observed changes, it would be valuable in the future studies to compare one group that did not receive the mini-cases against another group that did, in order to measure the impact of the intervention.

Another limitation in this analysis is the absence of a preparatory assessment. Incorporating a pretest in future studies would offer valuable insights into students' initial perspectives and attitudes regarding academic integrity. This pretest could serve as a benchmark to gauge the starting point of students' viewpoints before exposure to the graphic novel mini-case studies. The lack of a pretest makes it difficult to fully state that the survey scales change or develop attitudes and behaviors from the students' interaction with these literary materials. Integrating a pretest would address this limitation, providing a clearer understanding of the influence these graphic novels have on students' perceptions and actions related to academic integrity.

Finally, a limitation in the study is the absence of an analysis related to race or socioeconomic indicators. The study did not go into these factors, which are crucial in understanding the broader sociocultural context. To deepen the study's sociocultural relevance and strengthen connections with the graphic novel mini-case studies, future research should explore and measure socioeconomic elements. Factors such as employment status, income levels, housing stability, and food security (CDC 2024) could significantly contribute to a more comprehensive understanding of how sociocultural aspects intersect with the effects of the graphic novel mini-case studies.

Abbreviations
ICAI   International Center for Academic Integrity
MES   Multi-Dimensional Ethical Scale
SLO   Student Learning Outcomes

Supplementary Information
The online version contains supplementary material available at https://doi.org/10.1007/s40979-024-00152-9.

> **Additional file 1: Appendix.** Academic Integrity Graphic Novel Cases 1-5 including introduction and conclusion.

Declarations

Competing interests
Not applicable.

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