


# Plagiarism Awareness among Students: Assessing Integration of Ethics Theory into Library Instruction

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The library literature on plagiarism instruction focuses on students' understanding of what plagiarism is and is not. This study evaluates the effect of library instruction from a broader perspective by examining the pre- and posttest (instruction) levels of students' perceptions toward plagiarism ethics. Eighty-six students completed a pre- and posttest survey that measured their ethical perceptions of plagiarism scenarios. The survey used the multidimensional ethics scale (MES) developed by Reidenbach and Robin that is used commonly in business ethics research. The study found that the MES is a reliable tool to measure changes in ethical perceptions of plagiarism. Further, results indicate that students had higher posttest perceptions of plagiarism ethics than they did prior to library instruction. These results suggest that library instruction was effective and had a meaningful impact on students' perceptions toward plagiarism ethics.

lagiarism among students is a prevalent topic that crosses many disciplines including business, science, engineering, and education. Several studies have explored which disciplines are more likely to behave unethically, students' perceptions, attitudes and decision-making processes, and attempts to combat unethical behavior.<sup>1</sup> The implications of students' plagiarism extend further than just academic dishonesty. Several instances of plagiarism by well-known writers and journalists have been reported in recent years. Most recently, Fareed Zakaria, a reporter for CNN, *Time*, and *The Washington Post*, admitted to plagiarizing portions of a column and passages in a book he wrote.<sup>2</sup> Kaavya Viswanathan's debut novel, *How Opal Mehta Got Kissed, Got Wild, and Got a Life* was pulled from shelves and ultimately destroyed when she was accused of plagiarizing portions of the book.<sup>3</sup> In addition, research suggests that students who behave unethically in an academic setting will exhibit unethical behaviors in the workplace.<sup>4</sup> Given the questionable ethical behavior exhibited in recent years by the financial, real estate, and banking industries, university curricula have given more credence to discipline-based ethics education. Another avenue that can support the development of ethical practices in professional settings is increased emphasis on academic ethics.

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Librarians play a role in developing students' ethical attitudes toward academic integrity. This role is clearly outlined in ACRL Information Literacy Competency Standards for Higher Education. Standard 5 states, "The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally."<sup>5</sup> One of the performance indicator outcomes specifies that students will understand what plagiarism is and the need to attribute work. The library literature provides insight on practices and strategies to incorporate information on plagiarism into library instruction, much of which is based on informing students about what constitutes plagiarism. However, library instruction can go a step further by helping educate students on the unethical implications of plagiarism—by portraying plagiarism as an unethical behavior in an academic context. In other words, librarians can play a role in academic ethics education by presenting their instruction through the wider lens of ethics theory. Instruction sessions can use case-based scenarios that identify the stakeholders affected by an individual's action (such as plagiarizing a paper) and apply ethical theories (moral equity, relativism, and contractualism) to a scenario to identify whether the action is indeed unethical. Library instruction sessions that combine the practical information related to plagiarism and a theoretical approach to ethics of plagiarism can enrich the instruction and educate students on academic ethics at a broader level. Trussell expressed this point well when she wrote,

Given the pervasive problem with plagiarism and academic dishonesty, librarians need to specifically highlight and emphasize the components of information literacy training focused on ethics. Clearly labeling these components as "ethical" choices communicates to the students that these issues are ethical issues, not just something that is a custom or a literary preference. Coupled with continuing specificity within each classroom environment, successful ethics training can occur.<sup>6</sup>

To date, virtually no empirical research in the library literature has explored the effectiveness of applying theoretical ethics approaches to education on academic integrity.

This study addresses this gap in the library literature by providing empirical evidence that demonstrates the effectiveness and application of library instruction that embodies a theoretical approach in academic ethics education. In answer to the call by Ercegovac and Richardson, this research links pedagogical instruction design to empirical plagiarism and academic ethics research.<sup>7</sup> The curriculum design draws on research suggesting that shorter standardized programs using case-based learning to focus on basic rules and principles as well as cognitive strategies will more likely affect attitudes toward ethical issues than other pedagogical approaches.<sup>8</sup> To assess effectiveness of the library instruction session, pre- and posttest surveys were issued to students that measured changes in their ethical perceptions of plagiarism. This study also addresses Ercegovac and Richardson's recommendation<sup>9</sup> to give greater attention to plagiarism diagnostic and assessment tools through the use of the multidimensional ethics scale (MES), a survey instrument developed by Reidenbach and Robin, which is widely used in business ethics education.<sup>10</sup> Using Cronbach's Alpha test for reliability, this study also investigates the reliability of the MES as an effective scale for plagiarism ethics.

### Literature Review

Librarians play an important role in conjunction with both faculty and students in combatting plagiarism.<sup>11</sup> Librarians often collaborate with faculty to develop research assignments less prone to plagiarism. The assignments can include papers with more

focused topics or ones that require critical thinking and analysis by comparing two events or figures to identify differences and similarities.<sup>12</sup> Strategies for designing effective assignments can include the use of specific topics, specific types of resources that must be included in the reference list, annotation of sources, and submission of portions of the assignment throughout the course.<sup>13</sup> To increase student awareness of what constitutes plagiarism, tutorials, webpages, and handouts are often created.<sup>14</sup> In addition, some librarians incorporate plagiarism information into their library instruction sessions with tactics such as creating a research log, reviewing university policies related to plagiarism, or identifying examples of plagiarism.<sup>15</sup>

In a recent survey of librarians, 46 percent indicated that they had worked with at least one instructor to design an effective assignment during the course of an academic year, while approximately 75 percent incorporated plagiarism information into library instruction sessions.<sup>16</sup> However, the survey did not examine the amount of time spent discussing plagiarism during those instruction sessions. Given that nearly 50 percent of respondents indicated that time pressure was the greatest challenge they faced, one may question whether sufficient time was dedicated to the topic.

The majority of librarians do offer some type of plagiarism instruction, and the efficacy of the instruction is beginning to receive treatment in the library literature. Pre- and posttests were often used to assess effectiveness of the instruction on plagiarism. For example, when librarians at Long Island University incorporated plagiarism instruction into the library instruction program, students took a pre- and posttest survey to evaluate the effectiveness of the plagiarism instruction. The posttest survey found that students were better informed about what plagiarism is (49% vs. 89%), were better able to identify when plagiarism occurred (73% vs. 97%), were better able to cite Internet sources (31% vs. 44%), and had a better understanding of the seriousness and penalties associated with plagiarism (26% vs. 88%).<sup>17</sup> Workshops have also helped students, specifically international students, develop research topics and understand proper ways to acknowledge sources by paraphrasing, quoting, and citing sources.<sup>18</sup> When this method was employed by librarians at University of Albany, the increase in scores between the pre- and posttests was found to be statistically significant. This study also conducted follow-up interviews several months later and found that students continued to incorporate the techniques and skills learned in the workshop. Plagiarism instruction has also moved into the digital realm. Jackson explored the effectiveness of online plagiarism tutorials as a mechanism to educate students on plagiarism-related issues.<sup>19</sup> Pre- and post-tutorial quiz scores were analyzed to determine whether students' comprehension of plagiarism and their knowledge on how to avoid it were impacted by watching the tutorial. Quiz scores increased by 6 percent as a result of watching the tutorial.

To evaluate whether the format of instruction (in-person or digital) altered students' understanding of plagiarism, Moniz, Fine, and Bliss compared pre- and posttest scores for students who received PowerPoint presentations on plagiarism to those who received direct instruction. The in-person sessions involved discussion and application to student-centered learning through the use of role-play and group exercises. The authors analyzed which method of instruction increased students' contextual and theoretical understanding of plagiarism. The results showed that there was no statistical difference in the method of delivery upon students' understanding of plagiarism.<sup>20</sup>

While these studies provide statistical analysis on students' ability to recognize plagiarism, little research has been conducted to explore the extent to which instruction can impact students' ethical perceptions of plagiarism. The research in this area conducted to date falls into the business ethics discipline. Cloninger and Selvarajan incorporated ethics education into a core business class and surveyed students with a

pre- and posttest to determine whether students completing the course demonstrated more ethical judgments than those who did not complete the course.<sup>21</sup> They found that ethics education can change one's ability to reason ethically, suggesting that incorporating ethics instruction into a course can impact resulting ethical judgments that a student makes. Bloodgood, Turnley, and Mudrack, however, observed different results when they tested whether completion of an ethics course altered students' attitudes toward the acceptability of cheating.<sup>22</sup> In general, they found that mere completion of an ethics course did not affect students' attitudes toward academic integrity.

Looking again to the business ethics literature, we can identify an empirical scale shown to be reliable and then apply it to academic integrity ethics scenarios. Reidenbach and Robin's multidimensional ethics scale (MES)<sup>23</sup> has been used extensively to evaluate ethical perceptions in the management and marketing literature and has extended into other areas such as information technology ethics, tourism, and tax accounting as well.<sup>24</sup> In the MES, respondents are presented with a scenario (typically of a business ethics nature) and then answer eight questions on a Likert scale. The value of this scale is that it measures responses from multiple ethical theories. Four questions relate to moral equity or the recognition of right versus wrong. Two questions relate to cultural relativism, which is the concept of whether an action is considered ethical within different social groups. The remaining two questions relate to contractualism or whether there is an implicit understanding, contract, or agreement that an action is right or wrong. Although the MES has been used to explore ethical perceptions in multiple contexts, it has been used only twice to evaluate perceptions of ethics in academic integrity. Jung's article on information ethics included scenarios on information piracy, privacy, and Internet plagiarism.<sup>25</sup> Yang used the MES to explore graduate students' perceptions toward ethical academic behavior.<sup>26</sup> These studies, however, did not provide any intervention to investigate whether education or instruction affected perceptions.

Applying the MES to plagiarism and academic integrity dovetails neatly with Granitz and Loewy's research analyzing how students who subscribe to a particular ethical theory would respond to plagiarism education.<sup>27</sup> A content analysis of plagiarism cases was conducted to determine students' rationale for plagiarism. The authors categorized the rationales into one of six ethical theories: Deontology, Utilitarianism, Machiavellianism, Cultural Relativism, Rational Self-Interest (Social Contract Theory), and Situational Ethics. Each of the six ethical theories was employed by at least one student. Deontology was the theory most often cited by students (41.8%). This was followed by Situational Ethics (19.9%), Machiavellianism (18.4%), Cultural Relativism (8.5%), Utilitarianism (5.7%), and Rational Self-Interest (5.7%). The MES addresses three of these six ethical theories. Deontology is comparable to moral equity in that both are about fairness and right versus wrong. Cultural Relativism is addressed directly in the MES. Rational Self-Interest (Social Contract Theory) is related to contractualism in that an implicit agreement exists among groups of people.

### Study Overview and Proposed Hypotheses

The study evaluates the impact of a library instruction session on plagiarism ethics on students' perceptions of plagiarism ethics. Using Reidenbach and Robin's MES, students completed a pre- and posttest survey evaluating their attitudes toward plagiarism ethics scenarios. Given that the MES is an evaluation tool for three ethical theories, we can evaluate changes in perception by ethical theory, which can help identify which ethical tenets students employ when making ethical decisions regarding plagiarism. The study hypothesizes:

- H1: Students will exhibit higher perceptions of multidimensional ethics when evaluating plagiarism scenarios after library plagiarism instruction.

- H2: Students will exhibit higher perceptions of contractual ethics when evaluating plagiarism scenarios after library plagiarism instruction.
- H2a: Students will exhibit higher perceptions of moral equity ethics when evaluating plagiarism scenarios after library plagiarism instruction.
- H2b: Students will exhibit higher perceptions of cultural relativism when evaluating plagiarism scenarios after library plagiarism instruction.

## Methods

As outlined in the study overview, this research is a quasi-experimental field study in which the treatment variable, library plagiarism instruction, was delivered to students across multiple sections of a second-year undergraduate business writing course in fall 2010 and 2011. Because of curriculum instruction requirements, the library plagiarism instruction was not varied in its delivery, and no control groups were used. Pre- and posttest measures of student perceptions of academic ethics were collected and analyzed using paired samples t-tests and the Wilcoxon signed rank tests to supplement these analyses.

### *Library Instruction on Plagiarism Ethics*

Library instruction was delivered during one class session in a required undergraduate business writing class offered at a university in the northwest region of the United States. The library instruction module was developed by the librarian in conjunction with the business writing course instructor and delivered during a class session dedicated to ethical issues related to plagiarism. This curriculum design was based on research that suggests that (1) shorter standardized programs that focus on (2) basic rules and principles through the use of (3) case-based learning as well as (4) cognitive strategies are more likely to produce changes in attitudes toward ethical issues.<sup>28</sup> Accordingly, identical 50-minute sessions [(1) shorter standardized programs] were delivered in 16 sections of the business writing class. Each session began with a review of plagiarism fundamentals [(2) basic rules and principles], which included concepts such as common knowledge, citing ideas, government sources, and interviews as well as potential consequences that may result from plagiarism. Then students were presented with plagiarism scenarios [(3) case-based learning] adapted from a plagiarism manual created by the University of Texas Libraries.<sup>29</sup> In small groups, students discussed the ethics of the situation from three ethical perspectives: contractualism, moral equity, and relativism [(4) cognitive strategies]. Recognizing that students may not have a framework for these ethical theories, the concepts from the MES were framed using the following questions:

- Was the action fair? (moral equity)
- Does the action violate an unspoken promise? (contractualism)
- Was the action culturally acceptable? (relativism)

They explored those questions in relation to the stakeholders in the scenario (who was affected by actions taken in the scenario). After small-group discussions, the class discussed the scenario as a whole. An example of a plagiarism scenario used in class discussion is presented in Appendix A.

### *Data Collection*

Prior to the library instruction session on plagiarism ethics, students were asked to complete a pretest survey that was composed of a plagiarism scenario and the MES.

After the instruction session, students completed another survey that asked them to indicate whether they were present for the library instruction session and included another plagiarism scenario. The posttest was administered four weeks after the instruc-

tion session. The purpose behind waiting four weeks was to increase the likelihood that the students would respond to study intervention, rather than draw upon their knowledge of the pretest in providing responses to the posttest survey. Campbell and Stanley advocate for not issuing the posttest immediately after the treatment because participants' scores may increase as a result of their familiarity with the pretest.<sup>30</sup> A sample of a plagiarism scenario that was used in the surveys is provided in Appendix B.

**TABLE 1**  
**Responses and Mean Grade Point Averages (GPA) on a 4-point Scale for Pre- and Posttest Surveys by Semester**

Semester	Total Enrollment	Mean GPA*	Pretest Responses	Mean GPA of Pretest Responders	Posttest Responses	Mean GPA of Posttest Responders	Matched Pre- and Posttest Responses	Mean GPA of Students with Matched Responses
FALL 2010	313	3.21	115	3.84	104	3.75	47	3.76
FALL 2011	326	3.71	79	3.54	46	3.81	42	3.83
TOTAL	639	3.49	194	3.79	150	3.65	89	3.80

\* Mean GPA for all College of Business sophomores is substituted for Mean GPA of Total Class Enrollment as this statistic was unavailable. In this research, GPA was coded as follows: 1=less than 2.0, 2=2.0–2.49, 3=2.5–2.99, 4=3.0–3.49, and 5=3.5 and higher.

### *Timeline and Sample Size*

Classroom instruction was provided to a total of 639 students for the fall 2010 and fall 2011 semesters. Identical library instruction was delivered across identical course units in both semesters. Neither the researchers nor the instructors examined any data until after the conclusion of data collection in fall 2011. Therefore, the instruction that was delivered across semesters as well as data collection procedures were consistent across both semesters and not influenced by student responses collected throughout the duration of this study. Professors sent an e-mail to students informing them about the purpose of the study, the survey location, and the voluntary nature of their participation in the study. To provide incentive, students completing both the pre- and posttest survey were entered into a drawing for a \$50 gift certificate to the bookstore. The text of the e-mail sent to students is in Appendix C. In total, 194 pretest (pretest survey response rate of 30.4%) and 150 posttest (response rate of 23.4%) surveys were completed. To compare the pre- and posttest perceptions of academic ethics within each student participant, we matched student responses at time 1 (pretest) with student responses at time 2 (posttest). Eighty-nine cases (response rate of 13.9%) were identified in which a student completed both the pre- and posttest surveys. Due to incomplete survey responses, 86 cases (response rate of 13.5%) were used in this analysis. To control for the possibility of response bias altering our data, we calculated mean GPAs for all second-year students in the College of Business, as well as time 1 respondents in fall 2010 and 2011, time 2 respondents in fall 2010 and 2011, and matched respondents in fall 2010 and 2011. These data are presented in table 1. We also conducted a chi-square analysis to determine whether GPA differed among these groups. This analysis yielded no statistically significant difference in GPA across any of these groups,  $\chi^2(25, N = 927) = 29.32, p = .25$ , suggesting that our data are



not biased by a larger proportion of students with high GPAs responding to our surveys at any stage of the data collection.

**Results**

*Reliability of Scales*

Given that the MES has not been used frequently to measure students’ perception of academic ethics, the scale needed to be tested for reliability. Cronbach’s Alpha is a test commonly used to examine the internal consistency of the reliability of a set of questions. A score of 0.7 or above is considered to indicate acceptable internal consistency. Researchers strive for 0.9 or above, which is excellent internal consistency.<sup>31</sup> This study investigates not just the overall MES but also scales for each of the three types of ethics measured: moral equity, contractualism, and cultural relativism. The MES consists of eight questions. Of those eight questions, the contractualism subscale consists of two questions: The action violates an unspoken promise, and the action did not violate an unwritten contract (reverse-coded). The moral equity subscale contains four questions: The action was fair (reverse-coded), the action was not morally right, the action was unjust, and the action would be unacceptable to my family. The cultural relativism subscale has two questions: The action was culturally acceptable (reverse-coded), and the action is traditionally unacceptable. Table 2 lists Cronbach’s Alpha for each of the scenario ethics scales and subscales. The moral equity, relativism, and contractualism subscales for the pre- and posttest plagiarism scenarios were found to be consistently reliable, as was the MES in its entirety.

**TABLE 2**  
**Means, Standard Deviations (SD) and Cronbach’s Alpha for Key Variables**  
**(N = 70)**

	N	Mean	SD	Cronbach’s Alpha
Time 1 Pretest MES	70	2.2467	.59361	.89
Time 2 Posttest MES	70	2.6340	.78707	.94
Time 1 Pretest Contractualism	70	2.2311	.66427	.77
Time 2 Posttest Contractualism	70	2.6505	.89414	.86
Time 1 Pretest Moral Equity	70	2.2269	.65599	.81
Time 2 Posttest Moral Equity	70	2.5832	.77892	.79
Time 1 Pretest Relativism	70	2.3019	.65117	.71
Time 2 Posttest Relativism	70	2.7192	.81056	.80

*Impact of Library Instruction Sessions*

To determine whether our sample size was statistically acceptable, a power analysis test was conducted. The results indicated that the sample size (students who received instruction: N = 70; students who did not receive instruction: N = 16) was sufficient to power this analysis. As a result, paired samples t-tests were conducted to evaluate the difference between the pre- and posttest perceptions of multidimensional ethics among students who received library instruction and among students who did not receive this instruction. The paired samples t-test was also used to compare pre- and posttest subscale scores for students who received library instruction (N = 70), as this sample was large enough to power this analysis. The paired samples t-test is used to

assess the mean difference among two populations.<sup>32</sup> Further, this method of statistical analysis has been frequently employed to illustrate the impact of instruction on student learning (see, for example, Chen and Van Ullen<sup>33</sup>).

Though the sample size of students who were not present for library instruction ( $N = 16$ ) was sufficient to power the paired samples t-tests comparison of pre- and posttest MES, power analyses revealed that the t-tests for the MES subscales were inadequately powered. Thus, additional analyses were required to confirm these results. Therefore, Wilcoxon signed rank tests were run to supplement the analysis of pretest and posttest scores for students who did and did not receive library instruction. Study participants completed one pretest and one posttest scenario, and t-tests were conducted for pre- and posttest MES as well as its three subscales.

Hypothesis 1 proposed that students' perception of multidimensional ethics would be higher after the library instruction session. Table 3 shows the results of the paired samples t-test comparing the pre- and posttest scores for students who received library instruction, and table 4 shows the results of the t-tests for students who were not present for library instruction. A p-value of less than 0.05 is considered statistically significant and suggests that the difference in mean is not a statistical artifact. Our analysis reveals the posttest MES scores yielded higher mean values for students who received library instruction (see table 3) and the p-values were less than 0.05, indicating statistical significance. In contrast, the mean scores for students who did not receive library instruction were not statistically significant (see table 4). Although the sample size for students not receiving library instruction was quite small ( $N = 16$ ), power analysis revealed that this sample was sufficient to support the paired samples t-test for the full MES.<sup>34</sup> As a result, Hypothesis 1 was supported. Students exhibited higher perceptions of ethics as a result of the library instruction session.

Hypothesis 2, that students' perceptions of contractual ethics when evaluating plagiarism ethics scenarios would be higher after the library instruction session, was supported. As shown in table 3, the paired samples t-test yielded higher posttest than

**TABLE 3**  
**Paired Sample T-Tests Results for Students Who Received Library Instruction (N=70)**

	Mean	Mean Difference	Std. Deviation	Std. Error Mean	P-value
Pretest MES	2.2467	-.38742	.86504	.10339	< .001
Posttest MES	2.6340				
Pretest Contractualism	2.2311	-.41937	.92437	.11048	< .001
Posttest Constructualism	2.6505				
Pretest Moral Equity	2.2269	-.35631	.98707	.11798	.004
Posttest Moral Equity	2.5832				
Pretest Relativism	2.3019	-.41730	.85425	.10210	< .001
Posttest Relativism	2.7192				

Test used: Two-tailed paired samples t-test. Results are significant if  $p < 0.05$ .



**TABLE 4**  
**Paired Sample T-Tests Results for Students Who Did Not Receive Library Instruction (N=16)**

	Mean	Mean Difference	Std. Deviation	Std. Error Mean	P-value
Pretest MES	2.2405	-.36884	.92968	.23242	.133
Posttest MES	2.6094				
Pretest Contractualism	2.2215	-.37222	.88639	.22160	.114
Posttest Contractualism	2.5938				
Pretest Moral Equity	2.2911	-.27135	1.03337	.25834	.310
Posttest Moral Equity	2.5625				
Pretest Relativism	2.1583	-.56042	1.03202	.25801	.046
Posttest Relativism	2.7188				

Test used: Two-tailed paired samples t-test. Results are significant if  $p < 0.05$

pretest values of contractualism, and the p-value indicated statistical significance for students who received library instruction. Table 4 illustrates that there was no statistical difference between pre- and posttest scores on contractualism for students who were not present for library instruction. However, a post-hoc power analysis indicated that the sample size for students who did not receive library instruction (N = 16) was insufficient to meet the assumption of normality required to run the paired samples t-test on the MES subscales, calling into question the results produced for this student group. According to Kerlinger and Lee, the t-test “and other parametric approaches are robust in the sense that they perform well even when the assumptions behind them are violated. . . . Nonparametric methods [such as the Wilcoxon signed rank test], then are highly useful secondary or complementary techniques that can often be valuable in behavioral research.”<sup>35</sup> Thus, we ran Wilcoxon signed rank tests to supplement the paired samples t-tests for each of the MES subscales for both student groups to compare the posttest scores of those who received instruction with those who did not.<sup>36</sup> As illustrated in table 5, this analysis confirmed that students who received library instruction produced higher posttest scores on the contractualism subscale than they did prior to instruction. Table 6 confirms that there was no statistically significant difference between the pre- and posttest scores on contractualism ( $Z = -1.47, p = .142$ ) for students who did not receive library instruction. Based on these two analyses, Hypothesis 2 was supported.

Hypothesis 2a predicted changes in students’ perception of moral equity toward plagiarism after library instruction. Table 3 indicates that posttest scores on moral equity were higher than pretest scores for students who received library instruction ( $p < .001$ ). Table 4 reveals no difference between pre- and posttest moral equity scores for students who were not present for library instruction ( $p = .310$ ). The supplementary Wilcoxon signed rank analyses in table 5 replicated the higher posttest scores for students that received instruction, and table 6 confirms that there was no statistical difference between pre- and posttreatment scores for students who did not receive library instruction ( $Z = -2.96, p = -.003$ ). Therefore, Hypothesis 2a was supported.

**TABLE 5**  
**Wilcoxon Signed Rank Test Results for Pre- Versus Posttest MES Subscale Scores for Students Who Received Plagiarism Instruction**

<b>N = 70</b>	<b>Pretest Survey</b>	<b>Posttest Survey</b>	<b>P</b>
Contractualism Subscale	Mean = 2.23 (SD = 0.66)	Mean = 2.65 (SD = 0.89)	p < .001
	Median = 2.00	Median = 3.00	
Moral Equity Subscale	Mean = 2.23 (SD = 0.66)	Mean = 2.58 (SD = 0.78)	p = .003
	Median = 2.13	Median = 2.62	
Relativism Subscale	Mean = 2.30 (SD = 0.65)	Mean = 2.72 (SD = 0.81)	p < .001
	Median = 2.50	Median = 2.77	
Test used: Wilcoxon signed rank test. Results are significant if p < 0.05.			

Cultural relativism was the final ethics subscale evaluated. Hypothesis 2b, which predicted that students' perceptions of cultural relativism will be higher after the library instruction session, was found by paired samples t-tests in table 3 to be statistically significant ( $p < .001$ ) for students who received library instruction. However, the t-test in table 4 also found that postinstruction scores on cultural relativism were higher for students who did not receive instruction ( $p = .046$ ). After running confirmatory Wilcoxon signed rank tests displayed in table 5, we corroborated that students who received library instruction yielded higher posttest cultural relativism scores. However, the signed rank test in table 6 indicated that there was no statistically significant difference between pre- and posttest scores for students who did not receive library instruction. Because the small sample size of students who did not receive instruction calls into question the normal distribution of data, we defer to the Wilcoxon signed rank test results in this case and find support for Hypothesis 2b.

**TABLE 6**  
**Wilcoxon Signed Rank Test Results for Pre versus Post-Survey MES Subscale Scores for Students Who Did Not Receive Plagiarism Instruction**

<b>N = 16</b>	<b>Pretest Survey</b>	<b>Posttest Survey</b>	<b>P</b>
Contractualism Subscale	Mean = 2.22 (SD = 0.52)	Mean = 2.59 (SD = 1.00)	p = .142
	Median = 2.00	Median = 2.50	
Moral Equity Subscale	Mean = 2.29 (SD = 0.30)	Mean = 2.56 (SD = 1.01)	p = .378
	Median = 2.25	Median = 2.50	
Relativism Subscale	Mean = 2.16 (SD = 0.40)	Mean = 2.72 (SD = 1.06)	p = .067
	Median = 2.00	Median = 2.50	
Test used: Wilcoxon signed rank test. Results are significant if p < 0.05.			

All of the hypotheses (H1, H2, H2a, and H2b) in this study were fully supported in this analysis. This evidence indicates that students at Time 2 formed more ethical perceptions of plagiarism than at Time 1 and suggests that these changes in student perceptions may be a result of the library instruction provided to student respondents.

## Discussion

This study highlights the potential impact that library plagiarism instruction can have on the ethical perceptions of students in an academic setting. Students who were present for library instruction consistently exhibited higher posttest ethical perceptions than they did in their pretest surveys. Not only did students show higher overall ethics perceptions (as captured by the full 8-item MES measure), students exhibited higher posttest scores in each of the MES subscales (contractual ethics, moral equity ethics, and cultural relativism). After receiving library instruction on the topic of plagiarism, students exhibited heightened perceptions of fairness, contractual obligations, and cultural acceptability. This research underscores the importance of training and the role of library instruction, not only in disseminating information about plagiarism but in positioning plagiarism as an issue of ethics.

Though students who were not present for library instruction exhibited higher posttest scores on the MES and subscales, both paired samples t-tests and supplementary Wilcoxon signed rank tests indicate that none of these differences in scores was statistically significant. It is interesting to note that the paired samples t-test conducted for students who did not receive library instruction showed a statistically significant increase in their mean postsurvey scores on relativism. This significance is likely attributed to the fact that the sample size ( $N = 16$ ) was insufficient to power this analysis and may have resulted in falsely significant results. The follow-up Wilcoxon signed rank test confirms this explanation. However, it may also reflect that the content of cultural relativism is intrinsic and drawn from social and cultural beliefs,<sup>37</sup> which may be largely independent from the type of instruction that was delivered in this study.

### *An Ethics Approach to Library Instruction*

This research underscores the importance of the role of library instruction, not only in disseminating information about plagiarism, but in positioning plagiarism as an issue of ethics. Library instruction on plagiarism can go beyond a pragmatic approach of instructing students on the mechanics of plagiarism, the implications and potential penalties associated with plagiarism, and how to avoid it. With library instruction informed by ethical theories, we can answer the call by Trussell to instill in students an understanding that plagiarism is an ethical issue rather than merely an issue of proper form and function. Further, by incorporating into plagiarism instruction a focus on ethical theory, librarians may fulfill more effectively the ACRL Information Literacy mandate to help develop an "information literate student [who] understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally."<sup>38</sup> The use of compelling case-based scenarios encourages students to think critically about the multiple stakeholders affected by the action both on micro and macro levels. This requires students to go beyond the pragmatic and begin to think critically about plagiarism in an ethical context.

The results of our study show that incorporating ethical theory into library instruction on plagiarism positively impacts students' perceptions of plagiarism ethics. The benefits to this are twofold. First, students may exercise better ethical judgments when confronted with issues of academic integrity. Though research has highlighted that cheating is widespread among college students overall and business students in particular,<sup>39</sup> this study shows that adopting a critical-thinking approach to ethics

and plagiarism education may improve ethical sensitivity among students as well as ethical decisions and behavior. Students would be armed with not just a pragmatic understanding of why plagiarism is unacceptable, but they can also employ ethical theory when making decisions. Second, students who are more ethical in regard to the academic decisions may incorporate those practices into their professional work lives after graduation. Research has indicated that there is a positive relationship between unethical behaviors in academic and workplace settings.<sup>40</sup> The increasingly frequent incidents of ethically suspect behavior in corporate America have shown a spotlight on the role of educators in training more ethical employees.

### *Usefulness of MES in Library and Plagiarism Research*

Incorporating ethical theory into library instruction session is a first step in creating a holistic approach to plagiarism instruction. A second step is identifying a tool that will assess whether students' perceptions of academic ethics change as a result of the instruction. For the past 20 years, Robin and Reidenbach's MES has been used widely and effectively within the business ethics literature to investigate workplace practices. Applying this scale to issues related to academic integrity is a logical step in the path to more robust ethics programs in library instruction. The MES provides another tool in the arsenal for librarians to use as they assess the effectiveness of plagiarism instruction. Because the MES provides an avenue for assessment to go beyond the pre- and posttest scores that evaluate a student's knowledge and understanding of the topic, the scale explores a deeper level of knowledge and critical thinking to help assess changes in students' ethical perceptions of plagiarism. This study is one of an emerging body of literature that has evaluated the reliability of the MES and its subscales in relation to plagiarism ethics scenarios.<sup>41</sup>

### *Limitations, Strengths, and Research Implications*

While this research highlights the role of librarians in providing ethics education for issues related to academic integrity, there were limitations to this study. Other than a chi-square analysis of GPA among respondents, this study did not control for the potential impact of demographic factors on ethical perceptions. Factors such as major area of study, class rank, work experience, or personality characteristics may influence students' perceptions of ethical behavior. We recommend that follow-up studies incorporate and control for some of these factors into their investigation. For example, research has suggested that business students tend to be less ethical than students from other disciplines across the university.<sup>42</sup> It would be interesting to examine if major area of study changes the impact of library instruction on ethics perceptions.

Another possible limitation of the study was the time lapse between the instruction session and the postsurvey administration. As mentioned in the data collection section above, the researchers designed the study to evaluate students' response to library instruction, and this time lapse was deliberately used to decrease the likelihood that familiarity with the pretest would bias student responses on the posttest. By not implementing the postsurvey immediately, it is possible that other course-related content may have impacted the results. The library instruction session was the only ethics instruction that students received in the course. So, although the researchers cannot completely discount the possibility that additional course content affected survey results, they do feel that the possibility is minimal.

A third limitation of the study was that we did not employ a control group in our research design. Because we incorporated the library instruction into the course curriculum, we were unable to withhold plagiarism instruction from any group(s) of students. Though we did compare posttest responses between students who were

present for library instruction ( $N = 70$ ) and those who were not ( $N = 16$ ), the groups differed greatly in size. Thus we were limited to paired samples *t*-tests to examine these differences, using the Wilcoxon signed rank tests to confirm these results when they were underpowered. An analysis of variance (ANOVA) test would allow us to examine group differences as well as control for the impact of demographic variables, but that requires equal-sized groups. Therefore, our comparison of student groups that received library instruction with student groups that did not receive library instruction was limited in this study. While our data and analyses provide evidence that the improvement in Time 2 student ethical perceptions is due to library instruction, our conclusions would be strengthened if we could compare this against an equal-sized control group and show that groups receiving instruction exhibited higher scores than groups that did not receive instruction. This is a disadvantage of the quasi-field experiment design employed in this study. We recommend that future studies examine library instruction in a more controlled lab-experiment setting where the use of control groups is feasible.

The strengths of this study are multifold. The research conducted is one of the first studies to demonstrate the positive impact that librarians can have when providing instruction on plagiarism from an ethics education standpoint. Students' academic ethical perceptions increased after receiving library instruction. This opens a new arena for librarians and the critical role they can have in discipline-based ethics education. Given the importance and current relevance of this topic, this area warrants future examination.

In addition, this is the one of the first library research studies in which the MES was used to evaluate the impact of library instruction on attitudes toward plagiarism. In this research, the scale was found to be reliable, yielding a robust and multifaceted assessment of student perceptions of plagiarism scenarios. We recommend that future researchers continue to employ this scale to assess the full scope of impact that library instruction can have on student education and behavior.

Finally, this study successfully employed a highly structured, research-based instructional intervention providing support for past research on library and ethics instruction. This previous research found that successful teaching interventions consisted of four key components—brief standardized sessions that focus on fundamental rules and principles by employing tools such as case-based learning and cognitive strategies.<sup>43</sup> The library instruction in this study contained all of these components, and the results indicate that we were successful not only in introducing plagiarism concepts but in changing student perceptions of ethics related to plagiarism.

In conclusion, this research underscores the significance of plagiarism instruction on student perceptions of academic ethics. Our results suggest that library instruction can drive key consequences in the ethical behavior of students in an academic context. Furthermore, given the correlation between academic and workplace ethics, library instruction and interventions informed by ethical theories may broadly shape more ethical employees in the future.

## Appendix A: Example of Case-Based Discussion Scenarios

You are taking BUS 351 [Principles of Finance] and need to write a 10–15 page paper analyzing the financial health of a company. This paper accounts for 35 percent of your final grade. Just after you turn in your paper, you overhear a classmate telling a friend that she took a report from the “report bank” at the firm where she is interning, reformatted it, and turned it in. She feels certain that it will get an “A” because it was written by a veteran analyst at the firm.

Was the action fair?

Was the action culturally acceptable?

Does the action violate an unspoken promise?

What do you do? Discuss your options and choose among them. Why is your option the best?

## Appendix B: Sample Plagiarism Ethics Scenario for Online Survey

Desmond’s teacher assigned a business paper six weeks before it was due. Five weeks pass and Desmond has been busy with work from other classes. He also works after school, making it difficult to get started on the paper. He wants to do well since the paper counts for 20 percent of the course grade. If Desmond fails the class, he could lose his scholarship, which would prevent him from returning to school the following semester.

Desmond soon feels panicky because the paper requires more than one week of effort. His solution is to photocopy pages from sources that deal with his topic. Using whole paragraphs from these pages, he hurriedly puts together his paper. He completes the assignment including a reference list with the sources he used.

- |                   |          |       |                |
|-------------------|----------|-------|----------------|
| Strongly Disagree | Disagree | Agree | Strongly Agree |
|-------------------|----------|-------|----------------|
1. The action Desmond took was fair.
  2. Desmond’s action is culturally acceptable.
  3. Desmond’s action violates an “unspoken promise.”
  4. Desmond was not morally right.
  5. Desmond’s action is traditionally unacceptable.
  6. Desmond did not violate an unwritten contract.
  7. Desmond’s action was unjust.
  8. Desmond’s behavior would be unacceptable to my family.



## Appendix C: Text of E-mail Sent to Students Regarding Survey.

Win a \$50 gift certificate to the [UNIVERSITY] Bookstore!

By taking a few minutes to complete this survey and a brief follow-up survey at the end of the semester, you can submit your name in a drawing for a \$50 gift certificate to the [UNIVERSITY] Bookstore.

This information gathered will be used to improve curriculum design in future classes. This survey is part of a study on workplace and academic honesty that is being conducted by [NAME OF RESEARCHER 1] and [NAME OF RESEARCHER 2]. They are working to examine the impact of situational and individual factors on ethical decisions in academic and professional settings. They would like to survey your attitudes and experiences in the academic setting provided at MSU. Please let me or [NAME OF RESEARCHER 1] or [NAME OF RESEARCHER 2] know if you have any questions or concerns.

Your participation is voluntary, but would be really appreciated.

Here is a link to the survey: <http://www.surveymonkey.com/s/XXXXX>

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