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07.12 ACADEMIC INTEGRITY

Report from the Templeton Fellows

The ASJA Law and Policy Report and our sister publications have been invited to publish recent findings from a group of accomplished researchers supported by the John Templeton Foundation and the Center for Academic Integrity. This LPR

issue will provide readers with a comprehensive overview of the best ways college administrators can promote the core value of academic integrity.

The arrangement of our articles consists of an introductory overview by Appalachian State University Assistant professor Diane Waryold, followed by short summaries and analysis from each of the five researchers. We conclude next week with follow up questions and answers.

The Missing Links of Academic Integrity Research: Moral Development, Moral Education, and Institutional Cultures

By Diane Waryold

(Assistant Professor of Human Development and Psychological Counseling at Appalachian State University; past Executive Director for The Center for Academic Integrity and Program Administrator for The Kenan Institute for Ethics at Duke University).

History and Goals of the Program

In September 2003, Dr. Elizabeth Kiss (former Director of the Kenan Institute for Ethics at Duke University) and Dr. Diane Waryold (former Executive Director of the Center for Academic Integrity, housed at Duke University), submitted a grant proposal to the John Templeton Foundation for their consideration. The purpose of the grant focused on the Center for Academic Integrity's (CAI) vision in creating a stronger and more vibrant research agenda aimed at producing the knowledge necessary to improve academic integrity and ethical behavior in schools and universities across the nation. By submitting this proposal, the CAI was asking the John Templeton Foundation to support efforts of the Center to establish (5) research scholars' positions whom would take on this initiative. The Templeton Fellows would be made up of both established and emerging academic researchers with an interest in studying academic integrity at both the high school and collegiate levels. In other words, CAI would create a vibrant research agenda by "growing their own" scholars to study problems and challenges in academic misconduct confronted in schools, colleges and universities.

In November of 2003, CAI was pleased to be awarded \$155,636.00 to support the above mentioned grant proposal. CAI immediately launched the initiative by formulating a plan to recruit a multidisciplinary team of research scholars to receive the Templeton Research Awards. The award was announced and marketed to a broad audience throughout the United States through the creation of a web page and the design of a poster and other print materials. CAI received on line applications from a deep and competitive applicant pool (n=36 applications). CAI pulled together a selection committee of four distinguished scholars and educators to assist in choosing a first-class team of fellows.

Materials were copied and sent to the selection committee for their review. A conference call was convened and after careful deliberations, the selection of the five Templeton Fellows followed. The following individuals were selected to receive the awards.

1. **Dr. Trevor Harding** - Associate Professor of Industrial and Manufacturing Engineering, Kettering University (now an Associate Professor of Materials Engineering at California Polytechnic State University).

2 **Dominic Sisti**- Research Assistant, Center for Bioethics, University of Pennsylvania (now a doctoral student in phiioSophy/bioethics at Michigan State University).

3. **Scott Wowra**- doctoral student, Department of Psychology, University of Florida.

(now Dr. Scott Wowra, employed by the Council of Graduate Schools in Washington, D.C).

4. **Ashley Mouberry-Sieman**- doctoral student in Higher Education, North Carolina State

5. **Dr. Jason Stephens**- Assistant Professor of Educational Psychology, University of Connecticut

The summer following the selection of the Templeton Fellows, a Research Institute was held at Duke University. The purpose of this Research Institute was to bring the Fellows together for the first time to provide a forum for cross-disciplinary conversations and collaboration among the Fellows and a group of carefully selected faculty. The faculty consisted of an inter-disciplinary team of academicians from Duke University, Rensselaer Polytechnic University (RPI), Rutgers University and the University of Maryland. The Institute took place over a 4-day period in which the Fellows shared their research proposals, gathered feedback on these proposals, and attended workshops delivered by the faculty on substantive issues pertaining to academic integrity. The Fellows engaged with the faculty in lively debates on issues such as the definition of cheating, the gap between beliefs and behaviors, and internalizing ethical beliefs. A tightly knit research cluster was formed and the tone was set for a successful initiative.

In summary, over a three to four year period, the Templeton Fellows were given multiple opportunities to be mentored by a diverse and distinguished group of faculty. The Fellows formed a tightly knit research cluster in which they taught and learned from one another. The Fellows created a stronger and more vibrant research agenda and produced new knowledge that will be used to improve

academic integrity and ethical behavior in schools and universities across the nation.

Report from Trevor Harding and research team associates

ABSTRACT

A Comparison of Academic Dishonesty between the Humanities and Engineering Disciplines

Trevor S. Harding, Matthew J. Mayhew, Cynthia J. Finelli, Donald D. Carpenter

Engagement in academic dishonesty, or cheating, could be considered one measure of the extent to which students engage in unethical behavior. Sadly, the research literature consistently shows that engineering undergraduate students are among those most likely to cheat while in college. The present study examines the factors underlying engineering students engagement in cheating as compared to those of humanities students, within the theoretical framework of the Theory of Planned Behavior. The study surveyed 527 randomly selected engineering and humanities undergraduate students from three academic institutions. Comparison between engineering and humanities students showed that both groups were equally likely to cheat in high school, but that engineering students were statistically more likely to cheat in college on both homework and exams. The higher rate of cheating among engineering students was correlated to the intention to cheat again in the future, a positive attitude toward cheating, less perceived moral obligation to avoid cheating, the sense that cheating was accepted among one's peers, and a tendency to have cheated in high school.

Practical advice for educators

Cheating in both high school and college has been commonplace for decades. Numerous researchers have explored possible explanations for this wide-spread behavior, with some success. However, very little research has focused on differences in cheating between disciplines. For example, college students in engineering and business consistently report higher levels of cheating than students in humanities and the arts. The goal of our research was to compare the cheating behavior of engineering and humanities undergraduates to identify possible psychological explanations for the higher reported cheating among engineering students. To accomplish this task, we used a decision-making framework from the social psychology literature known as Ajzen's Theory of Planned Behavior (TPB). The TPB is a validated model of human decision-making and behavior and is, therefore, well suited for use in our study.

The results of our research confirmed the use of the TPB to predict, with reasonable accuracy, an individual's intention to engage in cheating and the likelihood with which that individual will actually follow-through with that intention.

Based on the fundamental assumptions of the TPB, this suggests that, rather than being habitual (as some researchers have suggested), cheating is a rational behavior that is under the complete control of the individual. Thus, if the factors that most influence an individual's decision to cheat can be successfully modified; the individual can be expected to make a rational decision. One practical implication of this finding is that educators can reduce cheating by simply discussing the issues rationally with students and addressing the underlying influences for their behavior. According to our research, there are three dominant factors that influence an individual's intention to cheat:

[] moral obligation (the sense that one is obligated to do what is right and good)

[] attitude toward cheating (the sense one has that there will be positive or negative outcomes if he/she engages in cheating), and

[] subjective norms (the sense that people who are important to the individual, such as parents, peers, and instructors, will react favorably or unfavorably if the individual engages in cheating). This implies that, when discussing cheating with students, college and high school educators must frame the conversation in terms of these three important factors.

In particular, educators must help students understand that it is both their and the instructor's moral obligation to protect the integrity of their learning community. The classroom environment must be such that the students are empowered to learn on their own and do not see the instructor as the ultimate authority in the classroom. In this way, the students take responsibility for their own learning and will be less likely to rationalize cheating because "the teacher deserved it". In this model, the instructor serves more as a coach than a teacher. One pedagogical technique that may be well-suited to achieving this, particularly within the engineering and science disciplines, is project-based learning. Here the students are provided a problem to solve or device to construct, but are not given the necessary information to complete the project. Instead, students are expected to seek this information out on their own with coaching from the instructor and occasional brief "lectures". This method has been shown to effectively motivate students to learn the immediate subject and to help them develop life-long learning skills. And since the projects are usually complex problems or systems, copying from another student is nearly impossible. Additionally, in our experience, we have found that the motivation level produced through project-based learning is so high, that few students even consider cheating an option.

Interdependence among students is another effective means of reducing cheating in the classroom that is in keeping with our finding that subjective norm is a strong predictor of a student's intention to cheat. When students work in teams on complex problems or projects, they usually discover that each student is dependent on his/her team members in order to successfully complete the project. This sort of interdependence among the students creates a culture in

which the students hold one another responsible for learning the material, and removes the instructor from the role of enforcer. Techniques such as group quizzes, combining individual homework scores, group presentations and reports, and peer evaluations are effective ways of developing a sense of interdependence within teams.

Educators must also have open and honest conversations about the positive and negative implications of cheating, thereby addressing students' attitudes toward cheating. Opportunities where the instructor facilitates a discussion among the students on the short- and long-term consequences of cheating can be effective in helping students realize that cheating does have consequences for people other than the cheater. Instructors must create an environment where students can feel free to be honest about cheating and not threatened that they will be "turned in" for admitting past discretions. It is also important for the instructor to clearly demonstrate that what they really care about is the students' learning. Most students will tell you that they cheat because the instructor doesn't really care about them, so why should they care about following the rules. This method of neutralizing their own culpability is typical, and can easily be eradicated by an instructor that displays true passion for the students' success.

A secondary finding from our research is that engineering students reported cheating more often on tests and homework than did humanities students (even when controlling for the number of opportunities to cheat), while both groups of students were equally likely to cheat in high school and both groups cheated less often in college than in high school. This suggests that engineering students, after entering college, remain more likely to cheat than do humanities students. Though we do not yet know the specific reasons for this finding, our anecdotal observations have lead us to hypothesize that engineering is a vocationally-oriented discipline in which many students enroll because they know that is how they will get a job while humanities students are more deeply engaged in the learning for its own sake. This raises the implications of engineering students' long-term ethical decision-making once they acquire a job. From a practical perspective, this further underscores the importance of affecting the underlying ethical decision-making process of engineering undergraduates.

An alternative hypothesis comes from our own data in which engineering students had lower overall moral reasoning aptitude scores both before and after leaving college than did humanities students (in fact, engineering seniors had lower aptitude at moral reasoning than did the first year humanities students). This implies to us that engineering students experience less cognitive development in the moral domain than do humanities students and that the engineering curriculum lacks sufficient opportunities for students to interact with peers on challenging moral questions. Thus, educators may be able to affect this development by introducing into the engineering curriculum opportunities for students to gain the ability to recognize a moral dilemma, resolve the moral dilemma in its new context, and have the motivation to follow through with ethical

decisions. This may require better integrating the liberal arts and engineering curricula, an approach which is crucial to preparing engineering students to face the technologically-driven ethical dilemmas of the 21st century.

Student perspectives on Internet plagiarism

By Dominic Sisti

ABSTRACT

Internet plagiarism continues unabated and may even be increasing. Questions pertaining to the ethical-moral construct employed by high school students to justify such plagiarism have remained relatively untouched. Understanding not simply the prevalence of Internet plagiarism but also the variety of explanations used by students to justify their plagiarism seems crucial to curtailing its practice. In this study, I surveyed 160 high school students and I endeavored to understand and describe the practices of students who use the Internet for schoolwork and who engage in copy-paste plagiarism or paper buying practices. The results indicate that students are more easily able to justify copy-paste plagiarism for a variety of reasons that mirror justifications of other forms of conventional plagiarism. Most students indicated they would never purchase a paper for reasons ranging from fear of getting caught to more principled and nuanced ethical claims.

Practical advice for educators

Rethink writing assignments: If you assign traditional research or term papers, consider a change by capitalizing on students' computing skills and creativity. Ask students to design a web site or multimedia presentation on a particular topic. Another idea is to ask students to interview a scholar in an area that interests them relevant to the course. For example, a bioethics student who wants to learn more about the ethical dimensions of stem cell research might email a scholar in the field of bioethics, interview her, and then create a website containing the interview, background information, video and multimedia, and suggested links for further research. Again, the key here is to offer an alternative to the traditional research paper that capitalizes on students' penchant for electronic communication and creativity.

Require synthesis: Students are less likely to plagiarize if they know they will need to present their projects to the class. The usefulness of this method was reflected in student responses to a survey I recently conducted, in which one student described why they would not plagiarize: "... [w]hen I write, I try to remember that some teachers are likely to ask you to read your paper aloud." Go further and ask the student to not simply read their work aloud, but describe it in an impromptu fashion. Students will need to have a working knowledge of the material. And if used in conjunction with the above assignment ideas, students can have a lot of fun showing off their creativity to the whole class.

Encourage group work: Many teachers worry that students working together on assignments is tantamount to cheating. Certainly there are problems: the one student in the group not pulling their own weight or the dominant group "leader" seizing too much control from the others. But overall, it seems group work, when constructed effectively can be a positive experience. Indeed, students spend many of their evening homework time online chatting with two, three, even a dozen friends at once. (How they manage to keep these concurrent conversations straight is beyond me.) Encourage students to work together, using in person meetings and instant messenger to accomplish the goals of a specific research project. Group exercises when managed well can engender a sense of collegiality among students, foster a sense of peer-to-peer accountability, strengthen leadership skills, and maybe most importantly, prepare students for jobs in the "real world" where group work is typically the norm, not the exception.

Be positive: An instructor's genuinely positive attitude can go a long way. Students will feel empowered to do their own work and feel comfortable approaching you with their questions or difficulties if you convey a sense of optimism, openness and reasonable flexibility. If possible, when grading assignments, transform critical comments into constructive ones by allowing students to respond and to revise their work.

Be accessible: Students who cheat often complain that their teachers were not available to help and they therefore feel somewhat justified in plagiarizing. Of course, this excuse does not justify cheating, but it does compel us to think about ways to be available for our students. If you are available to your students as a writing coach, and you encourage them to visit with you regularly, they will take ownership and pride in their writing projects; plagiarism will become a non issue. I sometimes hold online "office hours" during which time students can chat with me about an assignment. Being accessible - even if sometimes only virtually- is crucial to building the respectful relationship you have with your students and will empower students to work with integrity.

Moral Identities, Social Anxiety, and Academic Dishonesty among American College Students

By Scott A. Wowra, Ph.D.

ABSTRACT

The present investigation examined how reports of academic cheating related to students' emphasis on their moral identities and their sensitivity to social evaluation. Seventy college students at a large southeastern university completed a battery of surveys. Symptoms of social anxiety were positively correlated with recall of academic cheating. Additionally, relative to students who placed less importance on their moral identities, students who placed more importance on their moral identities recalled significantly fewer instances of cheating. In summary, these findings suggest that students are less likely to cheat on their school work when they place greater emphasis on their moral identity and are less sensitive to social evaluation.

Practical advice for educators

The importance of being honest. College students disagree over the importance of honesty versus getting what they want. In this survey study, students who regarded honesty as much more important than personal profit were assigned to the "Principled" Group. Students who believed that personal rewards trumped honesty were assigned to the "Expedient" Group. The two groups then recalled how often they had cheated in high school. The statistics were telling. Nine out of 10 Expedient students (91 %) recalled cheating on their school work, compared to about half of Principled students (57%). This finding suggests that differences in moral reasoning affect the propensity to cheat on school work. College administrators should consider mandating moral education in the first-year curriculum. College students should receive compulsory moral education early and often during their academic careers. Required coursework in moral reasoning signals to students the importance of character-building to their personal development as well as the continuation of a democracy.

A web of lies. Academic dishonesty is positively related to other forms of deception. Students completed a survey of antisocial behavior, including lying, infidelity, stealing, and fraud. Academic cheating was positively correlated to all of the antisocial behaviors measured in the study. Some college students may rely upon academic cheating as part of a general action pattern of deceit. College educators who design interventions for academic cheating should keep in mind that addressing academic cheating may only be achieved by broadening the scope of the intervention to the student's choice to deceive across a variety of situational contexts. Students should be asked to think critically about the situations in which they have relied upon dishonesty to get what they wanted, and how they could have achieved the same goal through honesty.

Cheating and drugs. Academic dishonesty was also positively correlated with drug use, including binge drinking and smoking marijuana. The correlation was .38, which suggests that about 14% of the variability in academic dishonesty was related to variability in student's use of drugs. Additional research is necessary to understand why drug use is related to academic dishonesty. Providing information about the possible link between academic cheating and health concerns may be an effective intervention among health-conscious students. Interventions designed to curtail one problem area may have a beneficial side effect of reducing the other problem area.

Anxious to get ahead. Failing a school assignment can be embarrassing. Some students may dread the humiliation of failing a school assignment so much that they will sacrifice their integrity to avoid embarrassment. In extreme cases, fear of social embarrassment constitutes an emotional problem that psychologists refer to as social anxiety. To test the social anxiety hypothesis of cheating, students completed a survey that measured symptoms of social anxiety and other emotional problems. Recall of cheating was positively correlated with the measure of social anxiety. Some students may cheat in order to regulate their anxiety over social embarrassment. Teachers and administrators should acknowledge that some students may rely upon cheating to assuage their fears of failure and embarrassment. By confronting these fears, students can take control of them and take steps to alleviate their anxiety through positive coping mechanisms such as exercise, meditation, or in more extreme cases, medication. In addition, openly acknowledging the link between anxiety and cheating eliminates this justification for cheating.

It's not my fault! Students differ in their ethical beliefs. In the survey study, students who believed that universal ethical principles exist, and that people are responsible for adhering to these ethical principles, reported significantly fewer instances of academic cheating compared to students who claimed that ethical principles are relative, deception is often justified, and that what's important is getting ahead. Taking personal responsibility for (un)ethical behavior is an important stop-gap to cheating. During orientations and the first day of class, college administrators and teachers need to clearly state the school's policies against cheating and that there is no excuse for academic dishonesty. By setting these ethical expectations early, college students will find it harder to neutralize their unethical behaviors.

Further research needed. Fostering personal responsibility is an important defense against cheating behavior. More research is needed to determine how instilling personal responsibility in students is best accomplished. First, interventions of academic dishonesty require clear statements that students are responsible for their own behavior, good and bad, and that there is no excuse for cheating. Second, students will benefit from training in ethical reasoning that emphasizes personal responsibility and undermines the propensity to engage in

excuses and justifications for unethical behavior. Third, interventions should remind students that taking academic short cuts will only undermine their personal sense of accomplishment and ability to succeed in the "real world."

Academic dishonesty across the transition from high school to college.

By Ashley Mouberry-Sieman

ABSTRACT

Much of the existing research on academic dishonesty is focused on examining high school or college students' perceptions, attitudes, and behaviors at one fixed point in time. Longitudinal cohort-based research on academic dishonesty is virtually non-existent due to the fact that longitudinal research is costly, time consuming, and difficult to manage. However, despite these inherent challenges, the insight gained from longitudinal analysis is unique in that it sheds light on how student attitudes and behaviors change over time and across educational settings. This study was unique in that it examined the issue of academic dishonesty across the transition from high school to college. This study was conducted in three phases. The first phase consisted of a 21-item pre-test questionnaire, which was administered during the spring of 2004 to a cohort of 240 high school seniors attending an elite public residential high school on the eastern seaboard of the United States. Phase one yielded a response rate of 15%. Phase two consisted of an identical 21-item questionnaire, which was administered to the 36 respondents from phase one, during the fall of 2005 after they had completed one full year of college. This phase yielded a response rate of 58.8%. Phase three consisted of a small pool of 5 students who agreed to participate in individual qualitative follow-up interviews late during the fall 2005. This study found that some of the students included in this study changed their perceptions, attitudes, and behaviors related to academic dishonesty as they made transition from high school to college. Additional research in this area will serve to fill a key gap in our existing knowledge base and will increase our understanding of age appropriate strategies for addressing dishonesty and promoting integrity within all levels of our educational system.

Practical advice for educators

Teachers/professors play an important role in both deterring academic dishonesty and promoting a climate of integrity.

In this study, students emphasized the role that teachers play in both deterring academic dishonesty and promoting a climate of integrity. Students at both the high school and college levels felt that educators (i.e., teachers and professors) were ultimately responsible for setting and enforcing the standards of academic conduct in the classroom. Students in this study suggested several steps that educators can take to deter academic dishonesty in the classroom, including but

not limited to: explicitly stating what does and does not constitute academic dishonesty, not assigning what is perceived to be "busy work" for homework or other assignments, using multiple versions of exams, not repeating major assignments from year to year, and closely monitoring the classroom environment during exams. Students suggested that educators promote academic integrity by discussing its importance throughout the semester/year and reemphasizing its importance for each major assignment.

Understanding and detecting plagiarism.

Plagiarism seems to be an issue that plagues both high school and college students alike. While all of the students in this study agreed that purchasing or copying an entire paper and submitting it as one's own was considered to be academic dishonesty, there was disagreement about whether or not changing the wording slightly from an original source while working on a paper or project or copying another student's homework or lab assignment and submitting it as one's own should be considered academically dishonest. Clearly more work needs to be done to help students at both the high school and college level understand what constitutes plagiarism and how to avoid it.

Educators should not assume that students arrive at their institutions with a common understanding of what constitutes plagiarism. Each semester/year, each educator should discuss what constitutes plagiarism in his/her classroom. Ideally, each institution will have a commonly agreed upon definition of what constitutes plagiarism so that students are able to receive a consistent message from one classroom to the next. Educators should provide examples of common forms of plagiarism and provide exercises designed to help students avoid plagiarism. One form of plagiarism that appears to cause a lot of confusion for students is self-plagiarism (i.e., turning in the same paper for more than one class). Educators should be explicit about when and under what circumstances this practice is acceptable. Educators should also structure assignments so that they are able to observe a students' progress throughout the semester (i.e., asking a student to turn in multiple drafts of an assignment). This practice will also deter students from completing assignments at the last minute.

In addition, educators should also talk to students about how plagiarism is detected. In one of the follow-up interviews, a student in this study discussed the impact of knowing that the teachers in his department submitted all student papers to turnitin.com as a way to check if any portion of the paper was plagiarized. Another student discussed the fact that professors in the computer science department used a computer program to identify copied code in computer science projects. Knowing that their teachers/professors checked student papers and assignments for plagiarism was a clear deterrent for academically dishonest behavior.

Academic dishonesty in the scientific laboratory.

Another gray area for students was the scientific lab report. Many of the students in this study reported that making up or faking data in a scientific lab report should not be considered academically dishonest. This finding is particularly disturbing knowing that so many professions and fields of study depend on the production and reporting of credible scientific data. When asked in follow-up interviews to discuss lab reports, many of the students described them as a kin to homework and other types of "busy work" that just needed to get done. Students rationalized their dishonesty in lab assignments by blaming the instructors for grading based on the accuracy of findings. These findings suggest that educators should reconsider how they structure, present, and grade work in the scientific laboratory. More emphasis should be placed on the process, careful lab procedures, and a thorough discussion of the results and why they may differ from experiment to experiment or from person to person. One strategy could be to have two students compare their results and discuss reasons for differences in their findings. Instructors should also work to situate experiments in real world examples and discuss the implications of academic dishonesty in real world settings.

Honor codes emphasize the institutions' values and priorities.

Prior research has shown that honor codes may be an effective tool for decreasing the prevalence of academic dishonesty on both high school and college campuses. Students in this study discussed noticeable differences in their environment with respect to academic dishonesty during the transition from a high school with no honor code to a high school with an honor code. At the no-code institutions, honor and integrity were rarely discussed and cheating was thought to be prevalent on tests and major assignments. At the honor code high school, students understood that academic integrity was an institutional value and that academic dishonesty was not tolerated. Students noted that having an honor code in high school prepared them well for the honor code environment that they encountered in college. These findings suggest that both high schools and colleges should consider instituting an honor code or integrity policy on their campus if one does not already exist. While honor codes and integrity policies are useful tools for emphasizing the institution's values and priorities, when used alone they do not serve as effective deterrents for academically dishonest behavior. Many of the students in this study who were attending honor code institutions admitted to engaging in behaviors even though they knew that they were academically dishonest.

Academic dishonesty as an individual or institutional issue?

Students in this study had difficulty articulating the "issue" with academic dishonesty. When asked if and why one should be concerned about academic dishonesty students most often brought up the issue of fairness. For example, if a class was graded on a curve, students felt it would be unfair for someone who was dishonest to "break the curve" after getting a higher grade than he/she deserved. However, when dishonesty by other students did not directly impact a student's own grades (i.e., homework assignments) he or she was less concerned with and less likely to address dishonest behavior. In fact, several students readily admitted to helping a friend who was in a pinch on homework and other minor assignments. In general, students did not feel that it was their place to address academic dishonesty or to report academic dishonesty to an educator. Ultimately, students viewed academic dishonesty as an individual issue.

In order to truly create a climate for integrity, educators need to help students understand that academic dishonesty is more than an individual issue. Educators need to empower students with the tools necessary to engage in conversations with their peers related to the importance of honor and integrity. Educators need to help students understand how dishonesty by one person in the community impacts all individuals in the community.

Directions for future research

Longitudinal research

Much of the existing research on academic dishonesty is focused on examining high school or college students' perceptions, attitudes, and behaviors at one fixed point in time. This study was unique in that it examined the issue of academic dishonesty across the transition from one educational setting to the next. Longitudinal cohort-based research on academic dishonesty is virtually non-existent due to the fact that longitudinal research is costly, time consuming, and difficult to manage. However, despite these inherent challenges, the insight gained from longitudinal analysis is unique in that it sheds light on how student attitudes and behaviors change over time and across educational settings. Additional research in this area will serve to fill a key gap in our existing knowledge base and will increase our understanding of age appropriate strategies for addressing dishonesty and promoting integrity within all levels of our educational system.

Mixed-methods research

Much of the existing research on academic dishonesty is quantitative in nature. In recent years however, an increasing number of researchers have begun to utilize qualitative research designs to study the issue of academic dishonesty.

Despite the fact that academic dishonesty has been studied using both quantitative and qualitative designs, very few researchers have utilized a mixed-methods approach to explore this topic. Utilizing a mixed-methods approach provides researchers with the best of both worlds by drawing on the strengths and eliminating some of the weaknesses of both qualitative and quantitative methodology.

Resources for further reading and thinking about academic dishonesty

Gallant, T.B., & Drinan, P. (2006). Organizational theory and student cheating: Explanation, responses, and strategies. *The Journal of Higher Education*, 77(5), 839-860.

This article puts a new slant on academic dishonesty research by examining the issues of academic dishonesty through an organizational/theoretical lens. The authors suggest that academic dishonesty should be viewed as an "adaptive problem" as opposed to a "technical problem." The authors present six change strategies for developing and promoting an institutional climate of integrity.

Lathrop, A., & Foss, K. (2005). *Guiding students from cheating and plagiarism to honesty and integrity: Strategies for change*. Westport, CT: Libraries Unlimited.

This book is full of practical suggestions for parents, teachers, and students who are interested in creating institutional climates of integrity. The authors have utilized student voices to help illustrate what influences students' decisions to engage in academic dishonesty. The "COPY ME" pages are particularly useful in that they provide resources, practical suggestions, and discussion tools for parents and educators.

Pascarella, E.T. (2006). How college affects students: Ten directions for future research. *Journal of College Student Development*, 47 (5), 508-520.

In this article Pascarella identifies and discusses several directions for future research on college students. Many of these suggestions are applicable to our research on academic dishonesty. Specifically he suggests that we need to (1) focus on the quality of the data or information being analyzed, (2) reassert the importance of replicating findings, (3) investigate the full range of impacts of information technologies, (4) map the role of within-college experiences on life after college, and (5) continue to take periodic stock of the research literature to establish where we are and where we might go.

Missing Links in Academic Integrity: Educational Implications and Future Directions

By Jason M. Stephens, Ph.D.

The present study provides a comparative analysis of students' beliefs and behaviors related to six analogous pairs of conventional and digital forms of academic cheating. Results from an online survey of undergraduates at two universities (N=1,305) suggest that students use conventional means more often than digital means to copy homework, collaborate when it is not permitted, and copy from others during an exam. However, engagement in digital plagiarism (cutting and pasting from the Internet) has surpassed conventional plagiarism. Students also reported using digital "cheat sheets" (i.e. notes stored in a digital device) to cheat on tests more often than conventional "cheat sheets." Overall, 32% of students reported no cheating of any kind, 18.2% reported using only conventional methods, 4.2% reported using only digital methods, and 45.6% reported using both conventional and digital methods to cheat. "Digital only" cheaters were less likely than "conventional only" cheaters to report assignment cheating, but the former was more likely than the latter to report engagement in plagiarism. Students who cheated both conventionally and digitally were significantly different from the other three groups in terms of their self-reported engagement in all three types of cheating behavior. Students in this "both" group also had the lowest sense of moral responsibility to refrain from cheating and the greatest tendency to neutralize that responsibility. The scientific and educational implications of these findings are discussed in this study.

Practical advice for educators

Engage: Help students understand the value of what they're being asked to learn by creating learning experiences that connect with their interests and have real-world relevance.

Challenge: Help enhance students' motivation for learning by providing them "optimal challenges" (i.e., one's slightly beyond their current ability but attainable with individual effort and the support of more capable peers or adults).

Empower: When possible, give students a sense of control over the learning process and the products they create. There are many ways you can create opportunities for students to have a voice in what they are learning and some choice in how that learning is demonstrated and evaluated.

Play Fair: Create assessments that are fair and meaningful representations of what students should have learned. Make sure assessments provide informative feedback and thus contribute to improved performance. When possible, individualize evaluations of students' progress and offer them privately. Avoid practices that invite social comparisons of performance.

Showcase Character: Give students images of people who don't cut corners: scientists who discover things they don't expect because they approach their work with an impeccable respect for truth and a genuinely open mind; business people who exemplify integrity even when it seems like it might cost them something. But don't preach. Take seriously the fact that, in some contexts, being consistently honest can be hard.

Be a Role Model: Finally, as educators, we must do our best to exemplify intellectual integrity ourselves-in everything from how we treat students and each other to how we approach the subject matter, to how we approach mandatory high stakes testing to how we think and talk about politics. We need to look for ways to make deep and searching honesty both palpable and attractive.

Specific strategies for reducing plagiarism and test cheating:

Prevent Plagiarism: There several ways teachers can reduce the probability that students will plagiarize. First and foremost, all written assignments should be clear and manageable. Teachers may even want to provide list of specific topics and/or required components to narrow the opportunity for plagiarism. Probably the most effective strategy for preventing plagiarism to require process steps - a series of due dates that emphasize that writing is a process and help students manage their time more effectively. Many students turn to plagiarism (particularly Internet plagiarism) in the 12 to 24 hours before a paper is due. Process steps and due dates for identify a topic or thesis, generating an outline or annotated bibliography, and submitting a first draft (or doing a peer paper exchange) help prevent this kind of panic plagiarism.

Reduce Test Cheating: Teachers can reduce the probability of test cheating in classes in several ways. As emphasized above, creating fair and reasonable exams is a critical first step, and clearly communicating the content and format of the exam is part of "playing fair" with your students. In larger classes, it is best to reduce temptation by using spaced seating, creating multiple forms (by randomizing order of questions and/or answers) and actively monitoring students (i.e., moving about the room). Finally, given the recent rise - in both popularity and power - of digital technologies (cell phones, PDAs, calculators, laptops, etc.), it is best to ban the use (or even presence) of the devices during exams.

Ideas for Future Research

Research on academic cheating must move beyond one-shot surveys that simply document the extent of the problem and its correlates. We have had several decades of such survey research and it has been extremely important in helping us to understand the extent and growth of academic cheating over the years. It is time, however, to translate these findings into concrete educational approaches designed to reduce cheating. Experimental research involving thoughtful

interventions (based on what we have learned about why and under what conditions students cheat) would fill a much-needed void in the literature on academic dishonesty and would take us much closer to ameliorating the widespread problem it now constitutes. Based on the existing literature, three types of interventions seem most needed.

Beliefs about cheating. Research results from suggest that there is little consensus concerning which kind of behaviors constitutes cheating. Teachers and students do not necessarily agree on which behaviors constitute cheating nor do they share the same level of concern about the problem: specifically, students tend to count fewer behaviors as "cheating" and they tend rate cheating less seriously as their teachers. Taken together, these findings suggest that students are in need of opportunities to discuss both the meaning and morality of cheating behavior. Such opportunities, especially if combined with efforts that promote students sense of personal responsibility for cheating, might be especially fruitful in reducing engagement in cheating behavior. The development and assessment of these kinds educational interventions would mark a real step forward in academic integrity research.

Changing peer attitudes and behaviors. Previous research (e.g., McCabe & Trevino, 1997) has shown that student perceptions of peer norms related to cheating tend to be strongest predictors of their own self-reported cheating. Whether real or perceived, peer attitudes and behaviors related to cheating tend to be strongest predictors of cheating. Consequently, intervention studies that focus on transforming peer group norms (increasing peer disapproval of and decreasing engagement in cheating behavior) may be especially helpful in reducing the problem. Previous research on attitude change (see Petty & Cacioppo, 1996, for a review) suggests such interventions would be most effective if they contained the following attributes: 1) small groups comprised of those individuals for whom the discussion is most personally relevant (in this case, students who cheat often); 2) clear and direct messages about the problem and why one should avoid doing it, and; 3) credible and attractive sources of information, such as someone who students trust and regard favorably (perhaps even a high status peer).

Academic and social-moral climates. Finally, intervention studies aimed at changing students understanding of and attitudes toward cheating - individually or in peer groups - may go some distance in reducing the problem but their effect will likely remain marginal so long as students construe the primary goal of their academic efforts to be the attainment of high grades. Cheating, after all, is a viable (and often effective) strategy if one perceives an increase in test scores to be the most salient objective. Future research is needed to clarify the connections between the academic and social-moral climates for classrooms, and their relations to student engagement in cheating behavior. Laboratory studies that manipulate environments to be more or less focused on learning (i.e., mastery oriented) and more or less pressure-filled (i.e., performance

oriented) to see their impact on teacher perceptions and student cheating could offer helpful insights as to the causal mechanisms behind academic dishonesty. Regardless of causality, findings from this and previous work (Anderman et al., 1998; Jordan, 2001; Murdock et al., 2001) strongly suggest that teachers should create learning environments that help students foster an interest in learning for its own sake (i.e., mastery goals) and avoid classroom practices that encourage students to focus on test scores and social competition (i.e., performance goals). Therefore, interventions that help pre- and/or in-service teachers successfully design and implement mastery oriented classroom practices and learning communities would also be especially useful at this time.

"Hear the case before you decide it. "

-Alfred P. Murrah, (Chief Judge of the U.S. Court of Appeals for the Tenth Circuit and Director of the Federal Judicial Center)