Evaluating the effectiveness of educational and academic integrity initiatives in higher education

James K. W. Lee
Office of the Provost and Vice-Principal (Academic)
Queen's University, Canada
Email: Jim.Lee@queensu.ca

Lee Partridge
Centre for the Advancement of Teaching and Learning
The University of Western Australia
Email: lee.partridge@uwa.edu.au

A variety of academic integrity (AI) initiatives are commonly employed in higher education institutions to promote awareness of AI concepts and institutional core values and to educate students and staff about AI standards and policies. While it is generally accepted that such AI initiatives are not only beneficial but necessary in a post-secondary environment, there is a paucity of scholarly research on the effectiveness of such initiatives. This is likely due to several reasons – the relatively recent interest in conducting rigorous scholarly research in the field, the diverse breadth of research topics spanned by academic integrity, and the complexity involved in developing a robust evaluation framework. Nevertheless, the ability to evaluate AI initiatives is extremely useful because it can be used to guide institutional AI strategies, improve existing initiatives, and inform senior decision-makers responsible for institutional priorities. By drawing on the extensive body of knowledge that already exists in the field of educational pedagogy used to evaluate the effectiveness of training programs, an analogous system of evaluation for AI initiatives will be developed. To this end, this project has four main goals: (1) to identify the range and type of academic integrity initiatives offered in universities, (2) using these data, to identify the appropriate outcomes and develop the corresponding indicators and measures of effectiveness, (3) to develop an evaluation framework that can be applied across a range of academic integrity initiatives in higher education to measure the impact of these initiatives, and finally (4) to test this model framework by applying it in a variety of university contexts.

1. Introduction

Academic integrity (AI) occupies a fundamental role in higher-education institutions around the globe. Traditionally, many universities have upheld academic integrity standards through policies of enforcement. That is, many institutional policies have focused on outlining in detail the penalties associated with various acts of academic dishonesty (e.g. plagiarism, facilitation, data falsification, the use of unauthorised aids, etc). In recent years, however, there has been a growing realisation that institutions must take a more proactive role in both combating academic dishonesty and educating students in generally accepted, ethical standards of scholarly practice. In other words, there has been a very clear trend in universities in North America, Australia, and indeed, many others around the world in developing policies and practices which focus on the promotion of academic integrity rather than solely enforcing the consequences of academic dishonesty.

There are numerous approaches which have been employed in promoting academic integrity in universities. For example, promotional materials such as bookmarks, leaflets, pins, pens, and posters which carry AI slogans provide some of the simplest ways to raise the awareness of academic integrity on campus. More detailed information about academic integrity may be imparted to incoming students and academic staff through academic orientation activities or the distribution of handbooks or published books on AI. Standard statements about AI may be found on course syllabi, or students may be required to sign an AI pledge upon entering university or perhaps on every submitted assignment and exam. Some universities sponsor an "Academic Integrity Day" or an "Academic Integrity Week", during which various events (such

as lectures, trivia contests, logo competitions, and other participatory activities) are held. Academic integrity tutorials have been developed at many schools; these are commonly available online and may be either optional or mandatory. Students can also be used as "AI ambassadors" to educate fellow students through a peer-to-peer approach. Text-matching software tools such as *Turnitin* are gaining widespread use in the evaluation of both draft and final student submissions. The adoption of a student-enforced, institutional "honour code" has been employed in some institutions; although almost exclusive to U.S. universities, the honour-code concept attempts to integrate and embed the fundamental elements of academic integrity in the institutional culture. On the remedial side, universities may offer a variety of seminars or workshops to improve such areas as study skills, referencing, essay writing, or time management; these may be optional or mandatory and are often provided in collaboration with the library or a learning centre. As part of their sanction, students caught cheating may be required to participate in AI-related "community service" activities, write a paper about an AI-related topic, or successfully complete a tutorial/counselling program. There are many other practices which are too numerous to describe here.

While there is widespread agreement that such various academic integrity initiatives are valuable, and indeed, essential in a university environment, there are very few scholarly studies which have examined the effectiveness of these initiatives. The purpose of this project is to: (a) identify the range and type of academic integrity initiatives offered in universities, (b) ascertain the main outcomes of such initiatives, (c) develop appropriate indicators which could be used to measure those outcomes, (d) establish the most effective AI initiatives and current best practices, and (e) ultimately devise a generic evaluation framework for AI initiatives which could be used in universities to assess their own AI programs.

2. Evaluating the effectiveness of AI initiatives

Why is there a paucity of scholarly studies examining the effectiveness of AI initiatives in higher education? This may be due to several reasons. Broadly, scholarly research into academic integrity in higher education is a relatively new field, and thus, many studies have focused on gathering fundamental student data (such as conducting self-reporting student surveys) and addressing core issues involving academic integrity (such as methods of promoting AI to students and within institutions, various methods of cheating, factors causing cheating behaviours, and best practices in AI policies and procedures). Due to the continuing rapid expansion of scholarly AI research, the field may not yet be at a level of maturity in which higher-order issues that extend beyond the information obtained from these basic (but still very important) studies can be easily investigated. For example, there are questions like, "Do students in one discipline have more incidences of cheating that students in another and why?" and "Are there particular kinds of AI infractions that observed more frequently in students from particular cultures?" which are difficult to explore without having a reliable, robust baseline with which to compare.

Secondly, there is an enormous diversity of themes within academic integrity which can be explored by scholarly research. For example, the list of presentations at any scholarly AI conference typically include such varied topics as educative initiatives for students (high school, university); educative initiatives for academic staff; developing an institutional culture of integrity; discipline-specific academic integrity issues; AI in distance learning; AI in an era of new technologies and social media (Web 2.0); AI and international students; incorporating ethics in the curriculum; why students cheat; student perceptions of cheating; contract cheating and essay mills; improving policies and procedures; penalties and sanctions for academic dishonesty; detecting plagiarism (visual, written, foreign language); kinds of plagiarism-detection tools and their evaluation; and the role of AI with governmental regulatory agencies and quality assurance.

Following on from this line of reasoning, designing and evaluating program outcomes is not a simple task and there is a general process for undertaking this kind of evaluation (e.g. Carter 2003). First, intended learning outcomes (rather than inputs) must be clearly formulated; these outcomes refer to the kinds of skills and knowledge that students would be expected to have at the end of a training program, e.g. a program unit or course. In addition, well-formulated outcomes must also be measurable. Once the outcomes are established, an assessment plan must also be developed. This often involves the identification of several indicators or competencies which might fully characterise a particular outcome, and then the design of an appropriate rubric encompassing the various indicators so that performance standards are typically expressed at different levels of achievement (e.g. Brindley 1998). As such, the development of robust outcomes and a corresponding evaluation framework is a complex process.

The evaluation of program outcomes is typically in the domain of educational assessors and curriculum developers, so most AI administrators (whether they may be staff members or students) may not be well-equipped to undertake this kind of assessment. As a result, although there are many educative AI initiatives which exist in colleges and universities, there are very few studies which have examined the effectiveness of such initiatives. Forster (2010) presented the results of a small study in a French business school, in which a cohort of students exposed to a variety of AI measures (e.g. academic writing workshops, revisions to AI policy, the use of text-matching software, more strict reporting of AI offences, and a campaign to better educate academic staff) responded to a survey to see if these collective measures had resulted in any change in student perceptions, attitudes and behaviour with respect to plagiarism. The student responses were compared to earlier responses by a larger cohort of students from several other business schools in France who had not been exposed to all of these measures. The results suggested that such interventions can have a positive impact on student attitudes and behaviours. However, there are also other challenges inherent in interpreting program outcomes which can make these studies more complex. As a simple example, consider the situation where, after the launch of a new university-wide AI awareness campaign, the number of reported AI cases for the academic year has increased over previous years. On one hand, this outcome could be interpreted that the awareness campaign was obviously ineffective; on the other hand, it could also reflect a greater awareness of AI standards, policies, and procedures among academic staff, which could have resulted in stricter enforcement.

There is obviously significant value in being able to evaluate the effectiveness of AI initiatives in colleges and universities. At the most fundamental level, launching and sustaining AI initiatives require time and resources, so it is obviously useful to know which initiatives are successful and which initiatives may require further evaluation or adjustment. In addition, even "successful" initiatives can be enhanced, and one of the most important stages in any outcomes-based evaluation framework is the presence of a continuous-improvement feedback loop (e.g. Lohmann 1999); thus, having an evaluation framework would potentially provide useful information to further refine ongoing AI programs. There is an additional pragmatic benefit from being able to evaluate the effectiveness of AI initiatives. In times of reduced resources and increasing financial constraint, all programs face increased scrutiny and there are often difficult decisions which must be made. Having an evaluative framework potentially provides clear evidence of the utility and value of AI initiatives and may assist senior administrators in making appropriately informed strategic decisions.

3. Towards an evaluation framework

As far as we are aware, the establishment of outcomes and corresponding indicators (let alone, an evaluation framework) for various AI initiatives has never been clearly articulated in the literature. Fortunately, the evaluation of outcomes is a much more mature field in educational pedagogy and may provide useful analogies in developing a similar framework for AI initiatives. For example, models examining the effectiveness of professional development for teachers by such authors as Gilbert and Gibbs (1999), Guskey (2000), Kreber and Brook (2001),

Stes et al. (2007), and Kirkpatrick (2008) may be particularly relevant. Furthermore, there is an Australia-wide initiative within the academic development community to develop a national framework of indicators to measure the impact of teacher-preparation programs in higher education (Chalmers et al. 2011).

We hope that the development of a generic evaluation framework for AI initiatives, within which potential outcomes and accompanying indicators are also identified, will be of great utility for the AI community in higher education institutions. Such a framework will allow AI administrators to demonstrate the impact of academic integrity initiatives to the university community, provide direct evidence in support of quality assurance to government and external agencies, inform strategic planning by identifying successful and unsuccessful initiatives as well as those which can be improved, and promote the importance of integrity and accountability within the academy to the public. Furthermore, it will allow institutions to directly compare the effectiveness of common academic integrity programs using standardised set of evaluative tools and potentially establish pan-institutional benchmarks which can provide a common baseline to measure the impact of new AI initiatives.

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Acknowledgments

Authors: James K. W. Lee, *P.Eng.*, Academic Integrity Advisor to the Provost and Vice-Principal (Academic), Office of the Provost and Vice-Principal (Academic)
Richardson Hall, Suite 353, Queen's University
Kingston, Ontario, Canada K7L 3N6
Email: Jim.Lee@queensu.ca Web: http://www.queensu.ca/

Dr Lee Partridge, Assistant Professor, Higher Education Development
Centre for the Advancement of Teaching and Learning
The University of Western Australia, Crawley WA 6009, Australia
Email: lee.partridge@uwa.edu.au Web: http://www.uwa.edu.au/