

# ACADEMIC SUCCESS FOUNDATION: ENHANCING ACADEMIC INTEGRITY THROUGH MOBILE LEARNING

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## ABSTRACT

How do we close the gap between the lack of academic experience incoming students have - with the expectation that students know the rules of writing and taking exams? Academic integrity (AI) is essential in post-secondary academia yet insufficient time is allocated to teaching and practicing its concepts. Talks at orientation, lectures in the first class, and notations in the course syllabus have been used to assist students with the academic transition to university, but have been less effective at increasing the student's level of academic integrity (Bertram Gallant, 2011; Josephson Institute of Ethics (see [www.josephsoninstitute.org/reportcard](http://www.josephsoninstitute.org/reportcard)). One solution is to provide students with information about institutional academic expectations in advance of the first day of classes yet, a number of barriers exist, including limitations in the learning management systems (LMS) and firewalls blocking access to external content.

Developing a mobile AI learning application would circumvent the LMS and firewall issues and enable information to be made available prior to students' arrival, thereby acculturating them to university values and academic integrity rules to help support student success well before classes begin.

## KEYWORDS

Academic integrity, mobile learning, academic misconduct.

## 1. INTRODUCTION

Globally, college and universities often struggle to identify the best pedagogical approach to engaging students with academic integrity content. Academic Integrity (AI) "refers to a set of conventions that scholars follow in their work, and which generates credibility, trust, and respect within the academic community" ([http://www.yorku.ca/spark/academic\\_integrity/index.html](http://www.yorku.ca/spark/academic_integrity/index.html)). When students cheat on exams or purchase completed assignments online, academic integrity is lost and academic institutions lose their validity and credibility. Unless the importance of honesty, originality and learning is internalized, students could receive a degree without the requisite skills. Hence, it is imperative that students understand academic rules and demonstrate them in their scholarship. Most universities rely on instructors to cover this foundational information in class; however, consistency and quality in its delivery varies widely. Moreover, many post-secondary institutions post their AI resources and policies deep within institutional websites. As a result, this information is often not visible nor does the static nature of the content readily engage students.

As the needs and interests of student's change, so must pedagogy. Hence, to better reach and resonate with students, we propose to develop an interactive mobile AI application. Specifically, to educate students about the values of honesty, trust, respect, responsibility, fairness and courage, which form the basis of academic integrity (<http://www.academicintegrity.org/icai/resources-2.php>).

Compounding this is a lack of institutional resources dedicated to raising awareness of academic integrity (Bertram Gallant, 2011), as well as the dearth of research on AI in higher education. Limited pre-existing research indicates the need for more support to encourage academic integrity. Several customized strategies employed at various institutions are not standardized nor applicable to other schools. This proposal seeks to develop an engaging instructional mobile application available across post-secondary institutions.

## 2. LITERATURE REVIEW

### 2.1 Academic Integrity

The International Center for Academic Integrity (ICAI) defines academic integrity as “a commitment, even in the face of adversity, to six fundamental values: honesty, trust, fairness, respect, responsibility, and courage” (Fundamental Values Project, 2014, p. 16). Over the last 20 years, institutional approaches to AI have shifted from being punitive or rules-focused to being educative and values-based (Bertram Gallant, 2011). A punitive approach emphasizes strict consequences as a behavioural deterrent (e.g. suspension from school), whereas, educational approaches support students to learn why they should follow the rules (e.g. workshops and training). Bertram Gallant (2011) emphasizes that “schools should aim to infuse the value of integrity into structures, processes and cultures of the organization” (p. 13). Therefore, to embrace the tenets of AI, students need to have scholarship and integrity role-modeled by educators and nurtured in classes for written assignments, quizzes/tests and exams within an educational institution (Glendinning, 2014).

Traditionally, scholarly rules to maintain AI are passed to students directly from their instructors, yet practices vary among instructors, resulting in inconsistencies in both the AI content shared and the depth of such discussions. Studying faculty attitudes on students’ AI at 17 Canadian universities, MacLeod (2014) concluded that “[every university] mentions the importance of academic integrity and affirms that they expect students to act ethically... regrettably, there are often no follow-up provisions for actually teaching students to do so” (p. 11). With this in mind, we advocate that students receive this foundational knowledge in a consistent manner.

Boehm, Justice and Weeks (2009) identify numerous AI best practices. Surveys of three US higher educational institutions indicated that instructors identified that training for instructors, adhering to classroom management strategies to reduce the chance of cheating, and providing clear examples of what academic integrity constitutes as most beneficial in supporting AI initiatives. However, these are mostly instructor-led initiatives; the student is considered a passive recipient of knowledge. To inspire active learning, the ultimate goal of educating students, Pfeiffer and Goodstein (1983) support ensuring that students recognize the importance of fundamental AI values and their application to their personal lives and careers.

East (2016) suggests that AI modules should be engaging to students; use more images than text to convey meaning; incorporate games to immerse students into the content and to provide immediate and memorable feedback; and provide opportunities for students to practice and apply these concepts. Mobile learning is one approach to empower students to better learn and understand the values of academic integrity, but there is currently only one other mobile application that offers similar content (uomfair.info), and this information is not contextualized to the Canadian higher education landscape.

### 2.2 Mobile Learning

Mobile learning (m-learning) entails using mobile devices to deliver learning materials with integrated strategies to allow access to knowledge from anywhere at any time (Ally, 2004). M-learning or “education on the go,” through devices such as phones and tablets, expands the boundaries of anytime, anywhere learning (Wu et al., 2012). As this is an emerging field, its full educational potential is untapped and best-practice guidelines for m-learning are still unknown and require formulation (Schmidt Hanbidge, Sanderson & Tin, 2015).

McGraw-Hill Education’s (Aug 2016) report, *The Impact of Technology on College Student Study Habits*, surveyed 2,657 US higher education students and found that two-thirds (61%) of college students reported using their smartphones to study. Although mobile learning applications exist that were developed for monetization purposes through advertising revenue, and largely succeeded by gamifying the experience (see Duolingo or Khan Academy), few institutions explicitly support the use of mobile learning to address specific learning outcomes (Herrington & Herrington, 2007). The *New Media Consortium’s Horizon Report* (Johnson et al., 2016) suggests that mobile learning has great potential to address many of the emerging trends in higher education, such as a growing focus on measuring learning and blended/hybrid learning environments. Mobile initiatives have the potential to transform learning in Canada by bridging the digital divide through augmented learning.

### 3. PROJECT CONTRIBUTIONS

Given that communication technology is rapidly changing information delivery and processing, the means by which AI content is delivered needs to keep pace with the best and most innovative ways to educate students. By providing visually stimulating and interactive content, as well as incorporating gamification elements to stimulate and motivate learners, we aim to appeal to students' desires to engage with content, while making this information readily available without being confined to a classroom site or a LMS. East (2016) insists, "all students take time and practice to become versed in academic codes and to understand academic culture" (p. 485), and this project solution will provide students this opportunity.

With the financial and administrative support from our university, developing the mobile *Foundations for Academic Success (FAS)* m-learning tool will allow us to make information available to students at their convenience, thereby acculturating them to the values held by the university before classes begin. Currently, our university has a mandatory tutorial for all incoming graduate students however, but technical restrictions make this material inaccessible until the first day of class. In addition, this platform does not easily track completion, making monitoring and following-up an arduous process. The proposed FAS tool not only will track module completion, but also has capacity to recognize effort and completion by issuing badges and certificates of completion. Once completed, the mobile application will be freely accessible for adoption to interested institutions to help alleviate common AI instructional challenges. Additional research from a user perspective is needed to discover the best strategies for maximizing m-learning (Schmidt Hanbidge, Sanderson & Tin, 2015). As advocates of mobile learning, we intend to enhance learning experiences rather than replace instructor and student interactions. Our dedication to helping learners better understand AI using mobile technology provides a unique opportunity to shape the project research framework.

### 4. PROPOSED METHODOLOGY

The FAS project meets objectives to develop strategies for enhancing student AI knowledge with innovative mobile technology to connect learners with timely, relevant multimedia content through six interactive modules. Our research study entails a mixed-method (quantitative and qualitative) non-experimental approach, including both pre- and post- tests, student questionnaires and tool testing. All data will be tracked using learning analytics to aid in iterative design of the mobile application. The mobile application will use ProProfs (<http://www.proprofs.com/quiz-school/>), a web-based service that allows educators to create and deliver online modules and assessments. Students achieving a passing grade in the modules earn an e-certificate, demonstrating AI competency. FAS tool testing will occur at multiple points to ensure quality and to enhance tool reliability. Contributing research activities (Table 1) include test groups to pilot the FAS tool. Following development of the modules, Focus Group A will review the content of lessons and quizzes. Test Group B will test the prototype model. Next, modules will be translated into Chinese and Test Group C will pilot test the tool. A final round of FAS tool testing (Test Group D) addresses all technical system challenges. A comparison student group (Control Group E) provides a benchmark against results with those who completed the AI modules.

Table 1. Research activities.

Testing Groups	Research Activities						
	Discussion Group	Pre-Test	AI Lessons	AI Quizzes	Final Quiz	Post Test	Questionnaire
Focus Group A: Review Lesson Content ( $N = 50$ )	X	O	X	X	X	O	O
Test Group B: Students Pilot Prototype ( $N = 150$ )	O	X	X	X	X	X	X
Test Group C: Chinese Translation ( $N = 100$ )	O	X	X	X	X	X	X
Test Group D: Final Trial ( $N = 150$ )	O	X	X	X	X	X	X
Control Group E: No Tool, only Pre-Post Test ( $N = 50$ )	O	X	O	X	X	X	X

All six AI modules will be comprised of the following instructional sequences:

- Definition of values and examples that demonstrate value interconnections (i.e. scenarios)
- Scenarios depicting diverse student life (i.e. cultural differences, peer pressure, time constraints)

- Multimodal tasks such as drag and drop, ordering of responses, videos and games
- Quizzes on all modules (i.e. true/false, multiple choice, fill in the blanks)
- Final test on all content testing integration of knowledge (i.e. badges and e-certificate)

First to fifth year undergraduate students will be recruited to participate in the study. Participants will use their personal smartphones, mobile devices or computers to access the modules.

## 5. CONCLUSION

Due to current LMS limitations, AI modules are not available in online formats before students arrive on campus. Through the design and testing of our proposed FAS tool, we aim to contribute to the scholarly discourse on m-learning and AI in higher education, while adding our own Canadian context. By offering open access resources to facilitate anytime, anywhere learning, higher education institutions benefit.

We envision multiple benefits to students and university instructors, including having a clear understanding of key aspects and values of AI, and, understanding of academic integrity transferred into their course work, fieldwork and ultimately, their workplace. AI resources will be accessible to all course instructors thus reducing the responsibility on instructors to develop and deliver AI information.

Demonstrated benefits for the learning community will be measured with pre-post outcome tests (and compared with control group test results) while experiences of mobile technology users will be investigated. It is here that we position our solution, envisioning a mobile learning experience that embraces the affordances offered by m-learning, while ensuring that the academic integrity platform solution we design enables successful implementation and dissemination of the FAS initiative to meet the emergent trends in higher education.

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