ICT and Academic Integrity at Secondary Level

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Abstract

The impact of information technologies on the ways people use and interacts with information has caused increasing concerns towards academic integrity or more commonly referred to as college cheating and dishonesty. Academic dishonesty is a growing concern among adolescents in schools worldwide. It is a problem that starts in elementary school and goes on through college, master's and doctorate level programs. Some reasons identified for the rise of academic dishonesty include pressure from teachers, parents, and peers. The classroom environment, self-centered culture, and ever-changing technology also contribute to the rise of academic dishonesty. Strong emphasis is placed in fostering secondary students' honour and integrity. Moreover, with the current emergence of the ubiquitous nature of information technology; students are easily tempted to take advantage of such innovations. In the other spectrum, studies with regards to the factors affecting engineering students' academic dishonesty are still quite limited. Hence, this case study shall attempt to describe the factors that affect the notion of academic dishonesty within science students; where in information technology is so abundant and readily available. Participants are science students of a secondary school (Harijhama High School). A focus group interviews were conducted in order to gather insights into the different facets of academic dishonesty. Findings suggest that the entire classroom environment including the students' peer pressure, and both the teachers' and school's policies towards academic dishonesty have all contributed to the overall perceived factors affecting the prevalence of cheating in the school.

Keywords: Academic dishonesty, science students, peer pressure, school policy, students' perception.

Introduction

Academic integrity is interpreted as the values, behavior and conduct of academics in all aspects of their practice: teaching, research and service. The term 'academic integrity' is widely used as a proxy for the conduct of students, notably in relation to plagiarism and cheating. (Macfarlane et al., 2014).

According to the Center of Academic Integrity, academic integrity is defined as a commitment to five fundamental values: honesty, trust, fairness, respect, responsibility and courage. An academic community flourishes when its members are committed to these values (ICAI, 2013). Academic integrity exists when students and faculty seek knowledge honestly, fairly, with mutual respect and trust, and accept responsibility for their actions and the consequences of those actions. Without academic integrity, there can be no trust or reliance on the effectiveness, accuracy, or value of a university's teaching, learning, research, or public service activities. It is therefore a key that we understand what academic integrity is, why it is important, and how to help it flourish in college campuses (U.C.Davis, 2013).

Academic dishonesty is a growing concern amongst students for better grades (Bushweller, 1999). It occurs in elementary school, middle school, high school, college, and even in master's level programs. With technology evolving making it easier to have access to different tools, adolescents are faced with a decision to choose academic integrity or academic dishonesty.

The world-wide-web and the rise of technological advancement have drastically changed the way we conduct of daily lives. Similarly, technological change has also brought interconnectivity to all aspects of life, wherein people maintain connected to each other by means of various type of technology. As students embraces the age of *multiliteracies*; a term coined by focus group , which describe the impact of information technologies on the ways people use and interacts with information, increasing concerns with regards to academic dishonesty was also observed. Such dishonesty has been argued to be made easier with the prevalent use of information and communications technologies (ICT) in education.

The classroom and school environment is where academic dishonesty takes place. There are many

reasons why an adolescent may choose academic dishonesty over academic integrity.

School handbooks are distributed at the beginning of the academic year and many state the academic dishonesty policy. It is up to the teachers and administration to follow through with the consequences if someone is caught cheating. Teachers hold the ultimate power to catch those being academically dishonest and they are the ones to punish. Some simply blame teachers for not caring enough if students are academically dishonest (Bushweller, 1999).

Politics in a school may also play an important factor for who gets caught and disciplined accordingly when they engage in academic dishonesty (Riera & Di Prisco, 2002). Parents who have power may threaten administrators and teachers with a lawsuit (Strom & Strom, 2007). In circumstances like this, it is easier to forget that a student was academically dishonest than to follow through with a consequence. When words gets around about a student being let off the hook for academic dishonesty, it creates an environment that says is it acceptable to be academically dishonest.

Teachers have some influence on how to set up their classrooms, as well as goals set and attained throughout the academic school year. Teachers can have mastery goal structure or performance goal structure in their classroom. Mastery goals focus on learning and improvement, whereas performance goals are based on grades and what one can do to be at the top (Anderman & Midgley, 2004).

Studies have shown that there is an increased in occurrence of academic dishonesty in secondary students. However, some reported that such dishonesty is probably caused by the pressure incurred from the need to have a high grade and high degree, while some students inadvertent or unintentional commit academic dishonesty due to the lack of proper guidelines and policies.

In response, this case study shall attempt to describe the different factors that influence the level of students' academic dishonesty. More specifically this case study shall involve science students; wherein information technology is so readily available. In addition, recommendations regarding preemptive educational strategies or measures towards academic dishonesty will also be provided.

Research Questions

The following research questions will be addressed while reviewing literature related to academic dishonesty.

- What is the level of students 'academic dishonesty' in the Science and Technology (ICT)?
- What are the factors that influence the students 'academic dishonesty'?
- What is the role of technology (ICT) in the prevalence of academic dishonesty?
- What are some effective strategies that can pre-empt or minimize the students" academic dishonesty?

Significance of the study

The current study seeks to provide various insights and implications with emphasis on the following significance:

- With the realization on the goals of learning, students shall become a better person that can better served the society in the future.
- The results shall bridge the gap between students and school (faculty and administration) with regards to the students' needs and perception on learning.
- Understand the role of information technology in the student's concepts on learning.
- Have a clearer picture on the notion of academic dishonesty in the current era of technological advancements.

Limitations of the study

As since this is only a case study, results gathered from the data are applicable to students with similar background and interests. However, since the concepts of academic dishonesty in science students are quite new, results might be of contribution to other educators as a sort of eye opener of what might happen in a similar type of learning environment. Lastly, some information or studies could have changed in the field since the literature was searched, and different surveys and statistics could have been reported.

REVIEW OF RELATED LITERATURE
1. Academic dishonesty in secondary students:
Academic dishonesty in students has long been a problem for higher education institutions around the world. Researchers typically approach the studies regarding with students' academic dishonesty either to identify personal characteristics that may be predictive of secondary levels of cheating and those that examine the situational or contextual factors that may lead to higher levels of cheating in different settings. However, such problems in academic dishonesty

are not increasing, but are also evolving in terms of its scope and methodology.

Definition of academic dishonesty in general has been noted to encompass a wide range of misconducts, such as cheating, fabrication, plagiarism, deception, bribery, sabotage, and many others. Most higher education institutions equate academic dishonesty as to the cheating, plagiarism, or knowingly furnishing false information to the school are examples of dishonesty. To overcome the prevalent academic dishonesty in students, researches regarding the attitudes of students on academic dishonesty have been studied extensively.

In a study regarding 3,975 medical students attending in 31 different schools, Baldwin Jr., Daugherty, Rowley, and Schwarz found out that around 5% of the medical students surveyed reported cheating during the first two years of medical school. The students appeared resigned to the fact that cheating is impossible to eliminate, but they lacked any clear consensus about how to proceed when they became aware of cheating by others. This actually show that the perceived social norms on cheating, on attitudes about cheating, and on knowledge of institutional policy regarding cheating behavior are important factors in determining one's intention to commit academic dishonesty.

In another study regarding the behavior of 220 students (66 psychology majors and 154 business majors) from 3 universities, Bernardi, Metzger, Bruno, Hoogkamp, Reyes, and Barnaby mentioned a highly significant association among students" attitudes on cheating, academic integrity, and academic dishonesty/honesty. In essence, students" attitudes toward cheating provide better explanation of cheating behaviors than background information.

Similarly, Lin and We mentioned that around 61.72% of the surveyed students claimed that they had committed some type of academic dishonesty. More so, the students" attitudes have shown to have significant correlation on all of the different domains of academic dishonesty (cheating on test, cheating on assignment, plagiarism, and falsifying documents).

Although the previous mentioned studies are focused on general classification of students and not in science students. Their insights and contribution to the literature have provided the basis within the general concept of academic dishonesty occurrence. Furthermore, early intervention regarding the different factors (constructs) or causes of student's academic dishonesty should be accomplished in order to prevent what Nonis and swift postulated that "students who engaged in dishonest behavior in their classes were more likely to engage in dishonest behavior on the job".

2. Multiliteracies and Technology in Education

Many mentioned that the shift of the traditional literacies to the current notion of *multiliteracies* is caused by the rapid evolution and integration of information technology (IT) in an age of increased cultural diversity and global connectedness. In general, the concept of *multiliteracies* originated which refers to two issues regarding the evolution of language today. The first is the variability of meaning making in the different cultural, social or domain-specific contexts whereas the second is the impact of information technologies on the ways people use and interacts with texts. Overall, these issues inevitably affect how people communicate and more importantly influence how education is achieved.

Although most studies have shown that ICT in education indeed show promising results, however still some researchers have also mentioned that an IT prevalent environment is not entirely successful. In a study regarding the attitudes to, and extent of, self-reported involvement in internet supported academic dishonesty practices. Underwood and Szabo mentioned that internet experience, acceptability of cheating, and the assessment of risk, predicted an individual student's acceptance of acts such as plagiarism as a legitimate way to achieve academic goals.

In other words, internet use can unintentionally promote academic dishonesty. This result is quite disturbing since the use of internet is already an inevitable part of the education today. Furthermore, the concept of cut and paste has also change the way students accomplish their required tasks. ICT in education do indeed provide learners with the increased learning motivation, however, careful consideration should be taken to minimize students' ability to use IT as a source of academic dishonesty. In essence, with the case of computer science students; wherein technology is quite abundant, careful intervention (or guidance) is encouraged to stir the students into the proper usage of IT.

RESEARCH METHODOLOGY
Research Design

This study is designed as a *case study*, wherein the primary objective is to investigate a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. Focus group interviews were used to gathered data for this study. Focus group

interviews are among one of the most widely used qualitative research tools in sciences studies.

For the data analyses procedures, data gathered are the qualitative focus group interviews and observations logs by the investigator. These data were analyzed using the Miles and Huberman method for generating meaning. The resulting themes were listed and together formed the implications of the science students' notion of academic dishonesty.

Population:

The purpose of this study was to see the relative effect of ICT in academic integrity of secondary school, Harijhama High School (H.S) students (age group-13+) of class-VII in the subject of science. Therefore, secondary school students studying Science subjects constituted the population of the study for the academic session-20013-2014.

Sample

The study was conducted on a sample of 30 students (15 male and 15 female) of 7th class of the Harijhama High School (H.S.) is selected as sample of the study. The sample focus groups in the Science are comprised 15 students. Lastly, in order to get a more diverse perspective on academic dishonesty, international students enrolled in similar program of study are also invited to join the focus group interview sessions.

Research Process

The study started during the academic session (2013-2014) of school. Population for the focus group sessions are gathered using the snowball sampling method; wherein the student participants in the focus group interview sessions sometimes this is inevitable, as it is the only kind of sampling that is possible, and it may be better to have this kind of sampling than no research at all. While, the snowball sampling method is used to assist in identifying the participants who have the characteristics in which this research is interested with [25]. Similar questions regarding the students' perception on academic dishonesty were asked then collected and analyzed

RESULTS AND DISCUSSIONS
The Level of Students' Academic Dishonesty in the Science and Technology:

In order to determine the level of academic dishonesty in the secondary school, questions regarding the perceived prevalence of such issues were asked. The questions were separated into the three types of examination, such as: *take home type tasks* (e.g. reports, reflection papers, homework), *normal day to day quizzes* (e.g.

seatwork, class work), and *periodic or unit examinations*. Result shows that the respondents perceived that students are slightly engaged in academic dishonesty activities.

Further analysis of the results also shows that student respondents tends to ranked their perceived academic dishonesty lower than the rest of the students. During the focus group interviews, students mentioned that they only attempt to cheat, if their classmates cheat. Such results indicate that the prevalence of academic dishonesty is quite dependent on the campus or school culture. In addition, the easy availability of technology for science students were actually not mentioned as a major cause of dishonesty.

During the focus group sessions, prevalence of academic dishonesty is asked among the students of different countries. Surprisingly, students mentioned that they rarely or don't rely on cheating to pass their examinations. Such results, indicates that academic dishonesty is also dependent on the type of students' ethnicity.

The Factors that Influence the Students' Academic Dishonesty

The various factors that influence the academic dishonesty of were separated into three categories, namely: *personal*, *teacher and examination*, and *school policy*. For the personal dimensions; the factor *Sense of Positive Character* (SPC) is ranked as the highest. Items include '*schooling is the process of bettering ourselves*' and '*any means of cheating in exams should be discouraged*'. Results also show that students with high positive character will tend to placed higher values on examination and knows the consequences of being dishonest. Naturally, students with high positive character will tend to have lesser tendency to possess negative character and would not pass the responsibility of preventing academic dishonesty to the school.

Besides SPC, the factor *Presence of Honor Code* (PHC) is also considered as an important factor in discouraging academic dishonesty. Items include '*it is my responsibility to prevent cheating*' and '*some students just don't cheat*' are two positive perceptions of students with regards to the classroom climate. Results also indicate that PHC is quite important, this actually denotes to the perceived positive in-school atmosphere, which is the major factor affecting the students' and teachers sense of value towards learning and the concept of examination.

For the teacher and examination dimension, factor such as *Teaching Style* (TS) which indicate that students are greatly affected by the teachers' teaching style (Items such as '*teaching style is nice*'

and '*I like my teacher's teaching style*'). This is then followed by the positive factor *Content of the Examination* (CE). Such results clearly indicate that besides the teachers' teaching style, the type of examination also determines the prevalence of academic dishonesty among the students (Items such as '*not interested in the exam content*' and '*too many exams*'). The third factor (negative factor), *Teacher's Policy towards Academic Dishonesty* (TPAD) is also quite relevant. Results indicate that students are quite observant and are easily affected by the teachers' attitude or policy towards academic dishonesty.

Finally, for the school policy dimension, results indicate that students are very clear about the consequences of being caught or punishment of cheating. However, students somehow also realized the school's sanctions towards academic dishonesty are quite light. Hence, results indicate that such failures in policy implementation have greatly affected the teachers' attitude towards academic dishonesty, similarly, towards the students' sense of positive values with regards to test taking.

The Role of Technology in the Prevalence of Academic Dishonesty

Upon investigation of the role of technology in the prevalence of academic dishonesty of students, respondents during the stage one focus group interviews concluded that technology is mostly used for reference purposes only rather than depending entirely on it.

Technology is only a tool, sometime I am tempted to just cut and paste from the internet, however, I know for certain that my teacher knows my capabilities, surely I will get caught doing so.

Such results are actually quite encouraging, science students, all agrees that technology is only a tool and studying is for benefiting and developing a person's knowledge. This result signifies that the course of study (whether IT related or not) does not affect the students 'notion of cheating.

Effective Strategies that Can Preempt or Minimize the Students' Academic Dishonest

Results from the focus group discussions have shown that students are quite affected by three factors, namely: *school's policy implementation*, *teacher's attitude towards academic dishonesty*, and *school environment*. Such school environment actually involves all the other factors such as peers, classmates, and the school atmosphere towards academic dishonesty itself. When the students were asked regarding some suggestions that could benefit the school towards the preemptive and preventive measures of academic dishonesty. Many suggested that the school should keep on reiterating the consequences of academic dishonesty. Students believe that through a strong wide campaign students will know the severity of such actions, hence, be held responsible for their own studies and avoid unscrupulous behaviors.

Another suggestion from the students is the variety of examination types, students mentioned that teachers can opt to choose exams that are essay type or more open-ended questions, as against the normal multiple choices type exams. In such cases, students have no choice but to study, since answering these types of questions involves higher ordered thinking skills and cheating is not an option. However, in cases for science students, wherein examinations are mostly programming, various more open-minded criteria should be included during evaluations; such that students are able to use their imagination and ingenuity in their designs and outcomes.

Conclusion

Recently, much concern regarding the increase frequency of cheating or academic dishonesty in secondary school students was observed. Such phenomenon is actually not limited to higher education institutions in India alone, but likewise in countries overseas, wherein the problem of increased prevalence rate of academic dishonesty among secondary school students are severe. With the concern that academic dishonesty while studying leads to future unethical behaviors in the workplace. This study uses a qualitative research paradigm in an attempt to describe the factors that affect the level of computer science students' academic dishonesty.

Results indicate that with regards to the level of engineering students" academic dishonesty; students mentioned that they are slightly engaged in academic dishonesty activities. Further analysis of the results also shows that student respondents tends to ranked their perceived academic dishonesty lower than the rest of the students. Furthermore, academic dishonesty is affected by three major factors such *as personal factors, teacher and examination factors, and school policy factors.* More importantly, each major factor consists of both positive and negative contribution to the overall prevalence of academic dishonesty. Results also indicate that the school' policy implementation towards academic dishonesty tends to influence both the teachers' and students' attitudes and values toward test taking itself. Similarly, such issues tend to overspill and affect the entire school environment, hence,

create a negative atmosphere. As for the effective strategies that can preempt or minimize the students' academic dishonesty, continuous school wide campaign and variation in examination type are the most common suggestions given by the students themselves.

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