

Faculty Perceptions on Cheating in Exams in Undergraduate Engineering

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Abstract

Cheating in examinations transpires in every-country of the world, and it is a fraudulent-behavior that involves some-form of deception, in which a candidate's efforts, or the efforts of other-candidates, are altered; it has negative educational, social and psychological-effects. Even though cheating is widespread, it has been observed that some-faculties rarely-discuss rules and consequences of academic-dishonesty with their-students. The main-objective of this-study is to comprehend, cheating-phenomena, on a deeper- level, by evaluating perception of the-trend from the faculty' perspective, so that ways could be proposed for preventing it from happening. This-study is a fraction of a larger-research on cheating at the School of Engineering (SOE). The study-design used a descriptive-survey-approach and a document-analysis. A designed confidential self-report-questioner was used as the main-instrument for this-study, with the sample-size of 25-subjects and response-rate of 84%. The tool was pre-tested to ensure its validity and reliability. The study focused on the Attribution-Theory and Constructivist-paradigm of research that view knowledge as socially-constructed from the context of cheating in examinations. The data collection-instrument was subjected to the statistical-analysis to determine its reliability via Cronbach's alpha-coefficient, and found high inter-item consistency ($\alpha > 0.9$). The results of the survey, where 81% of the respondents agreed that students frequently indulge in examination-malpractice, clearly revealed that cheating, indeed, is a significant-problem in the SOE. The challenge for the school is, therefore, to tailor effective-strategies to prevent cheating-opportunities, and to establish and enforce valuable-means of dealing with particular-patterns and types of cheating. Specific-recommendations on how to deal with cheating in examinations are also highlighted.

Keywords: cheating, engineering, faculty, questioner, integrity

1. Introduction

1.1. Cheating-epidemic

In most-developing-countries, like Kenya, corruption has become a growing-phenomenon, of a grave-concern. It is wide-spread and a throbbing-part of everyday-life. Corruption maybe defined as *a process through which public officials break the law in pursuit of their private-interest*. The most-common forms of corruption are bribery and extortion (Khan, 2004). The education-sector is not immune from corrupt-practices, where the concept of academic-dishonesty is not a spanking-new one. Trost (2009), argues that there is a positive-relationship between academic-dishonesty at university and the country's corruption-index. In the Corruption-Perceptions-Index, 2014 Kenya is ranked 139th out of 176 countries for corruption, tied with Azerbaijan, Nepal, Nigeria, and Pakistan (as most-corrupt-countries). It is estimated, the average-urban-Kenyan pays 16 bribes per month. Most of these-bribes are fairly-small, but large-ones are also taken – bribes worth over 50,000 Kenyan shillings (€600, US\$500) account for 41% of the total-value. There is also corruption on a larger-scale, with each of the last-two-political-regimes being criticized for their-involvement (Transparency International Kenya, 2015).

Students, teachers, officials of Government, examination-bodies, and parents, are all involved in the web of corruption. The students, who failed to prepare for examinations, and want to have good-grades, at any-cost are the major-culprits. Some offer monetary-gifts to invigilators, so they could be allowed to come into the examination-hall with programmed or web-based-mobile-tablets and phones. It is reported that some-female-candidates engage in sexual-seduction to entice and compromise male-officials. In most schools, particularly the higher-institutions, some female-students dress too shamelessly, deliberately exposing their-assets, to tempt their-lecturers during-examinations, some to intimidate them, and others, to provide a safe-place for their-unauthorized-materials. Occasionally, these-indecent-dressings, distracts the supervisors and render them powerless. Some-ladies insert their-phones, or some-materials relevant to the exam, in sensitive and private-parts of their-bodies. It may be difficult and even, embarrassing, especially for a male-supervisor, to apprehend such-students, without being accused of, and prosecuted for sexual-harassment (Balogun, 1999).

Vis-à-vis academic-dishonesty, there is the tendency to limit it to just cheating in examinations, yet the concept is made up of a wide-range of acts of misconduct. There are eight broad-areas of academic-dishonesty (OECD, 2011): (1) obtaining unauthorized aid or information; (2) giving unauthorized aid or information; (3) committing plagiarism from written, electronic or internet-sources (for example, when a student will turn in an excellent, well-written report that the supervising-professor starts seriously-doubt its authenticity); (4) misrepresenting facts or data; (5) offering bribes; (6) using the library-resources unethically; (7) using computer-resources unethically; and (8) knowingly assisting in any of the-above-practices.

Cheating in examinations occurs in every-country in the world (Harold & Max, 2001). Studies related to student-cheating, and the problems associated with this-type of behavior, are found in throughout undergraduate and postgraduate-education (Lederman, 2006; McCabe & Trevino, 2001; ADA, 2005; Koerber, 2005; Sharp & Kuthy, 2005; Bertolami, 2004). Cheating persists across class, race, gender, and national-boundaries (Cizek, 1999), and none of the professional-disciplines are spared; in Engineering, for example, recent-surveys of over a thousand undergraduates, show 80% of the respondents at 23 institutions-82% of those in engineering, reported that they cheated, at least once in college, and in just the previous-term most of the engineering-students cheated more-than-once on exams (33%) and/or assignments (60%) (Carpenter, 2010). In other-studies, 49% of engineering and science-students surveyed, engaged in unauthorized-collaboration on assignments, and 75% copied homework-solutions from bootlegged instructors-manuals (Bullard & Melvin, 2011).

Cheating takes many-forms from simply copying another student's paper to stealing an exam-paper, to forging an official-university-transcript (Pincus & Schmelkin, 2003). Cheating has become a disturbing-phenomenon for many-universities around the world. Not only does cheating appear to increase, but as different-generations of students begin school, the number of students who admit to cheating has increased. Although the causes of increased-cheating are unknown, some speculate, it is due to more-pressures for success (Callahan, 2011). Majority of student-cheaters are usually caught cheating in the subjects they perceive to be difficult (Lambert *et. al.*, 2003).

Large-scale-surveys on student-cheating have been undertaken, in the United States of America by McCabe *et.al* (2004, 2006, 2009), with some-studies in Canada (Hughes& McCabe, 2006), Australia (Kidwell& Kent, 2008), Europe (Teixeira &Rocha, 2010), Ukraine and Russia (Stephens *et.al.*, 20120), and Taiwan (Lin & Wen, 2007), among others. Brimble and Stevenson-Clarke reported in 2005, a figure of 72% of Australian-students having admitted to cheating (Brimble & Stevenson-Clarke, 2005). Christensen Hughes and McCabe's, 2006-survey of students in Canada found that 53% of undergraduate-respondents and 35% of graduated-students reported that they had cheated on written-work (Hughes & McCabe, 2006). A 2010 study of undergraduate-students, pursuing economic/business degrees in Portugal, found that 62% of students admitted to having copied at least once (Teixeira and Rocha, 2010). In 2007, in Taiwan, researchers found that over 60% of undergraduate-students reported some-form of academic-dishonesty (Lin & Wen, 2007). The IoS has established, that at least 45,000 students, at more than 80 UK institutions have been hauled before the authorities, and found guilty of "academic misconduct", ranging from bringing crib-sheets or mobile-phones into exam-venues to paying private-firms to write projects for them (Brady& Dutta, 2012). Findings by Chapman & Lupton (2004), revealed that in China, 80% of high-achieving-scholars admitted to cheating at least once.

In Africa, academic-fraud is also prevalent, for example, in the Nigerian-education-system, the misconduct ranges from copying from other-students and cheating during-examinations to more serious-behaviors, such as impersonation, falsifying academic-records, "paying" for grades/certificates with gifts, money or sexual-favors, terrorizing examiners and assaulting invigilators (Nwaopara, 2008; Gesinde, 2011). Though examination-malpractice is on the increase all over the world (Underwood, 2006), the rate of occurrence in Nigeria is alarming. It is now so widespread that it is becoming the norm, rather than the exemption. Sule (2009), posits that the Nigerian-Education-system is presently in a state of serious-crisis and painful-stress as a result of examination-malpractices. Busayo (2008) observes that "schools have failed in their-responsibility of producing citizens that are worthy in character and learning; instead they have become merely gateways to meaningless-certification." Moreover, in 2012, Nigeria was said to occupy number one-position in the World Examination Malpractice Index (Omeri, 2012).

In Kenya, the situation is not any-better; cheating in examinations is on the increase, among students in secondary-schools, colleges and universities. According to Siringi (2009), over 60% of the students in colleges and universities in Kenya admitted having cheated in examinations. Findings of another-study by Akaranga & Ongong (2013), based on two Kenyan-public-universities, with the sample-size of 375, identified the following self-report examination-malpractice patterns: Diverse forms of Synoptic notes-96%; Using mobile-phones and calculators-74.7%; Leaking the examination- papers by lecturers-28%; Writing projects or theses for others for a fee-16%, among others.

In addition, the advancement and wide-usage of mobile-phones have promoted them to become the learning-media. Therefore, integration of mobile-phones into instruction has increased in the Universities. Despite of the vital-role that is played by mobile-phones as a learning-tool, there are still challenges that could originate from using mobile-phones; such as cheating during-exams and distraction during lecture-hours.

The evidence presenting itself is deeply-gloomy; this is why, more and more-schools are presently solicited for strategies against exam-cheating, in general, and cheating via smart-phones, in particular.

1.2. Consequences of cheating at examinations

Cheating in exams is a fraudulent-behavior that involves some-form of deception in which a candidate's efforts

or the efforts of other-candidates are misrepresented (Smith & Davis, 2003). It is a serious-problem that has negative educational, social and psychological-effects. *Educationally*, cheating is contrary to the spirit of higher-education, especially in developing and promoting moral-values and attitudes of young-individuals (as the future-generation). Moreover, it violates institutional-regulations, and it is an indicator of a school-inability to provide an educational-process that offers equal-opportunities for all- students to learn. In addition, cheating negatively-affects the accuracy of the evaluation-process, by adding more-sources of errors, which decreases exams-validity and reliability.

Socially, cheating is unacceptable-behaviour to get something with no right. Cheating not only affects students, who cheated, but also other (“clean”/innocent)-students, as it forces them to endure in an unfair-system. Possibly-most importantly, cheating-behavior may carry-over, even after the graduation. Previous-researchers suggest that people who cheat in school/university are likely to cheat at work (Smith, 2000). In addition, media-coverage of various-ethics-scandals in Kenya, may have contributed to the perception that corruption, unstoppable-greed, and gross-misconduct, are regular, unavoidable and un-punishable-part of our-lives. Examples of the selected most-known *integrity-scandals* in Kenya are: The longest-running-scandal is the Goldenberg-scandal, where the Kenyan-government subsidized exports of gold that was smuggled from Congo. The Goldenberg-scandal cost Kenya the equivalent of more than 10% of the country's annual GDP; A KES360 million helicopter-servicing-contract in South Africa; Between January 2003 and September 2004, the National-Rainbow-Coalition-government spent about \$12-million on cars, that were mostly for the personal-use of senior government-officials. The vehicles included 57 Mercedes-Benz, as well as Land Cruisers, Mitsubishi Pajeros, Range Rovers, Nissan Terranos and Nissan Patrols; In June 2008, the Grand-Regency-Scandal broke, wherein the Central Bank of Kenya is alleged to have secretly sold a luxury-hotel in Nairobi, to an unidentified-group of Libyan-investors, for more than 4 billion Kenyan Shillings (approx US \$60 million) below the appraised-market-value; and in October 2012, allegations surfaced that top Foreign-Affairs ministry-officials ignored land (for the Kenyan-Embassy in Japan) offered by Japan that could have saved the country loss of Sh1.1 billion, among others (Wikipedia: Corruption in Kenya). Dishonest-behaviour of well-known political, business and religious-figures, as well as various-acts of misconduct, within the system of higher-education, have all contributed to students finding it easier to provide justification for their-academic-dishonesty.

Psychologically, cheating may cause instability in a student's values, potentially resulting in serious-psychological-problems, such as feelings of being guilty and with humiliation. This, in turn, would have negative-effects on a student's self-respect, self-esteem, level of motivation, and learning-ability, among others.

Students, who are caught cheating, face embarrassment and shame, they may be banned from the university for a year, may be denied the right to take the exam at other-universities, and possibly, expulsion. Thus, the risks associated with cheating are very-real, and, indeed, enormous. Reasonable-students perceive the penalty for cheating as being harsh (the cost-benefit-analysis by Williams *et al.* (2003), then they will not attempt to cheat. Yet, despite such-formal and informal-sanctions, research indicates that an astounding 60-70% of college-students admit to cheating (Smith, 2000).

Passow *et al.* (2006), argue that “acts of academic-dishonesty undermine the validity of measures of student-learning”. Higher-education-sector is a competitive-enterprise at every level – from student- admissions-processes to university-ranking-systems and competition for funding (UNESCO, 2009). Academic-integrity is fundamental to the reputation of any educational-institution, as well as, for the reputations of it's' staff and students. When academic-integrity breaches go unchecked, they have the potential to undermine the credibility of degrees and the reputations of the institutions. Furthermore, society as a whole suffers, because it is difficult for employers to determine who is and who is not-qualified. There is, in fact, a vast-difference between qualification based on paper and that of actual-knowledge and skills in the said-area (Nwankwo, 2011). In addition, especially with such high-risk-profession, as engineering, this could even put at risk the people, who heavily-rely on well-trained-professionals. For example, there has been an upsurge of buildings-collapsing in recent-past in Kenya, including in the capital-city of Nairobi. The main-causes have been attributed to quality of materials, poor-workmanship and incompetence of the site-engineers (Kuta& Nyaanga, 2014). To give just a few examples: an incident occurred in which a 4-storey-building, that was partly-occupied, though under-construction, in Mlolongo, along Mombasa Road, Nairobi collapsed in on 9th June 2012; A five-storey-building, under-construction, collapsed in the central-business-district in Nairobi, in January 2013. The building began to sway, then quickly collapsed, killing at least 11 and injuring dozens; and in 2014, more than 280 construction-workers were inside, when the unfinished-structure in central Nairobi came down. Over 200 people were trapped under the debris of the collapsed-structure (Kioko, 2014).

1.3. Purpose of the study

Asking why cheating is wrong may seem a silly-question or a needless-provocation. Indeed, since “just about everyone agrees that cheating is bad and that we need to take steps to prevent it” (Kohn, 2007), no question seems necessary and no dispute seems required. However, cheating harms not only the cheaters, but all members

of the academic-community, including students, invigilators, the university, and the society at large. Even though, cheating is widespread, it has been observed that some-faculties rarely discuss rules and consequences of academic-dishonesty with their-students. Even as many-researchers have studied cheating-phenomenon from the student's viewpoint, few have investigated faculty opinions about it. The main-objective of the study is to comprehend, cheating-phenomena, on a deeper-level, so that ways could be proposed for preventing it from happening, as some of the faculty just turning a "blind-eye" and tolerate or, even, ignore, the cheating-troublemakers. The aim of this-research, therefore, was to explore self-report-perceptions of the school' faculty and survey on attitudes towards, cheating in undergraduate engineering-programs.

2. Materials and Methods

The study was superficially divided into 3 sequential-parts, which shown in self-explanatory Figure 1.

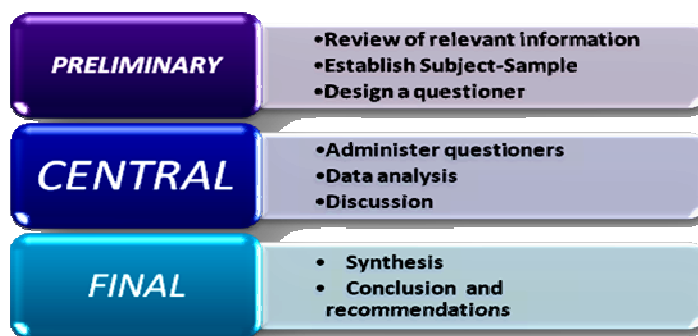


Figure1: Sequential-parts of the study

2.1. The theory and approaches relevant to the study

There are numerous-theories related to the cheating-behaviour (see Starovoytova *et. al.*, 2016 a), this-study, however, was focused on the Attribution Theory. The theory was first proposed by Heider in 1958, and further developed by others, such as Harold & Weiner. Attribution theory is a theory about how people perceive, give details, and how ordinary-people make causal-explanations. This-theory is developed within social-psychology, as a means of dealing with questions of social-perception. Heider grouped attribution theory into two-types (Wikipedia: Attribution Theory): Explanatory attribution and Interpersonal attribution. In *explanatory attribution*, people make explanatory-attributions to understand the world and seek reasons for a particular-event. It plays an important-role in understanding what is happening around us. *Interpersonal attribution*, on the other-hand, occurred, when the cause of event involves two or more- individuals. To explore the nature of interpersonal-attribution, Heider, in his-theory, believed that people observe, perceive, analyze and clarify behaviour with explanation that differs from one-individual to the other. Based on this, Heider found it very-necessary to further-divide explanation into two-categories: internal (*personal*) and external (*situational*) attributions. This-theory is considered valuable to this-study, in the sense that examination-malpractice is a social-vice and it is perceived differently by individuals in the society, based on internal or external or both-attributions. In the same-spirit, students are involved in examination-malpractice, not only because they not adequately prepared, but because of societal-influences. The societal-emphasis is on success-goals, by all the-means-available and possible, employed in achieving these-goals. Parents are involved, because they do not want their-children to fail, teachers and others are involved, because of the financial-gain, material and other-intangible and, sometimes, intangible-gains, derived from involvement in examination-malpractice. To them it is a justifiable-way to improve their financial-condition.

A constructivist-paradigm of research that views knowledge as socially-constructed from the context of cheating in examinations was used for this-study, according to Golafashani (2003). The study-design adopted a descriptive-survey-approach. According to Cohen *et. al.*, (2002), surveys are used to gather data at a particular point in time, with the intension of describing the nature of existing-conditions, or identifying standards, against which existing-conditions can be compared, or determining the relationship between specific-events. The other-method used in data-collection was a document-analysis. Robson (2002), defines document-analysis as a social-research-method and is an important-research-tool in its own-right. It involves reading various-written-materials and relating them to some-aspect of the social-world. These include public-records, books, media, manuals, and guides, among others. Robson (2002), points out the advantages of document-analysis, as that the documents are unobtrusive, and, can be used without imposing on participants; they can be checked and rechecked for reliability.

2.2. Sample size and the rationale for its selection

To evaluate perceptions of the academic-staff on students-cheating in exams at SOE, Moi University (MU), a designed confidential self-report-questioner was used as the main-instrument for this-study, with the sample-size of 25 subjects. Purposive-sampling was adopted, to identify 5-members per each of the five-departments of the SOE, e.g. one-member in each of the following-academic ranks/positions of: Professor/Associate Professor; Senior Lecturer; Lecturer/Assistant Lecturer; Tutorial Fellow; and Graduate assistant.

2.3. Main instrument - the questioner

Previous-researchers have recommended questionnaire as a very-effective-instrument, which has the ability to collect a large-amount of information, in a reasonably-quick-span of time (Orodho, 2009). Self-reports-style has been widely used in other-studies (Anderman & Midgely, 2004; Marsden *et al.*, 2005). The study implemented a style of projective-technique, by asking questionnaire-respondents questions about cheating at examinations at SOE. The subject-sensitivity, relative-position of questions, the minimization of excess-length, the visual-impact and ease of comprehension and completion, were all-considered, when designing the questionnaire. The questioner of McCabe (2005) was used as a main-point of reference; some- items were partially-modified.

According to Kombo & Tromp (2006), the researcher must maintain privacy and confidentiality of the respondent at all-times, therefore, in the questioner, the instructions stated that respondents would remain anonymous, that neither the individuals, nor their-departments would be identified, and that participation was strictly-voluntary. Hence, the respondents were guaranteed confidentiality, and the questionnaire was filled in anonymously, with no identification information.

A self-report-questionnaire consisted of 7 simple-questions with 39 sub-sections; the respondents were supposed to answer either "Agree" or "Disagree". The questioner consists of two-sections, first is the demographic-characteristics of the subjects, and the second, is the main-body of the questioner; in addition, there is one open-ended-question. Unitizing the open-ended-comments was a logical-process, in which each comment, frequently consisting of multiple-sentences, was probed to identify the different-units of meaning, resulting in units, shorter than a sentence to those that comprised-several-sentence. Thereafter, each-unit was assigned a descriptive-code that represented the underlying-meaning. If a cluster of units suggested the same-meaning, the descriptive-code assigned to those-units was also the-same. The units that denoted common-themes were then grouped and given a category-name. The open-ended-comments, provided by the faculty, were analyzed using a content-analysis-technique for qualitative-data: the data were unitized, coded, and grouped into themes, according to Denzin & Lincoln (2000) and Lincoln & Guba, (1985). To ensure credibility, a principle of qualitative-inquiry, for ascertaining that the analysis and findings are legitimate, was used, according to Lincoln & Guba (1985).

2.4. Data Analysis

The questioner was pre-tested, to ensure its validity and reliability. The primary-purpose of pre-testing validity and reliability is to increase the accuracy and usefulness of findings, by eliminating or controlling as many-confounding-variables as possible, which allow for greater-confidence in the findings of a given-study (Hardy & Bryman, 2009). *Validity* indicates the degree to which an instrument measures what it is supposed to measure. For a data-collection-instrument to be considered valid, content selected and included in the questionnaire must be relevant to the need-established (Field, 2009). In order to demonstrate internal-validity in the questionnaire, it had to be constructed in such a way that the resulting-data made sense, in the context of the research-questions. Descriptions such as authenticity, cogency, credibility and confirm-ability, are amongst the concepts considered, when confirming internal-validity. *Reliability* refers to the degree of consistency of scores obtained by tool or consistency the procedure demonstrates. The data-collection-instrument was subjected to statistical-analysis to determine its' reliability. The most-commonly used technique to estimate reliability is the correlation-co-efficient, often termed as reliability-co-efficient or Cronbach's alpha-co-efficient (Kothari, 2004). Cronbach's alpha is the most-common-method of estimating reliability of an instrument (Hardy & Bryman, 2009), and it is useful for the item-specific-variance in a unidirectional-test (Cortina, 1993). The Statistical Package for Social Sciences (SPSS-17, version 22)-computer software-program was used to compute the Cronbach's alpha co-efficient. Descriptive-statistics was used to analyze both qualitative and quantitative data.

3. Results

3.1. Validation of the instrument

From the validation it was found that the instrument had sufficient-information, which would answer all-the-research-questions. The instrument was found adequate-enough; the length of the entire-instrument was found appropriate and the content was logically-organized. The general-recommendation made is that the instrument was acceptable with very- minor-editing.

Questionnaire-data were coded, entered into SPSS and checked for errors. Data were analyzed, list-

wise in SPSS, so that missing-values were ignored. Cronbach (1951) states, that “one validates, not a test, but an interpretation of data arising from a specified-procedure”. Most-authors recommend that a value of 0.6 to 0.85 as an acceptable value for Cronbach’s-alpha; values substantially-lower indicate an unreliable-scale (either the questioner is too-short, or the answers have nothing in common). Cronbach's-alpha-test of internal-consistency was performed on for perceptions and self-reports and demonstrated high inter-item-consistency (Cronbach’s $\alpha=0.923 > 0.9$).

3.2. Analysis of the questioner- responses.

Total of 25 questioners were administered, out of which, 21 were submitted-back, giving a response-rate of 84%.

3.2.1. Analysis of part1: Demographic Characteristics

Demographic-characteristics obtained were: gender, age, teaching-experience, and academic-rank of the respondents. Figure 2 shows the age-allotment of the respondents.

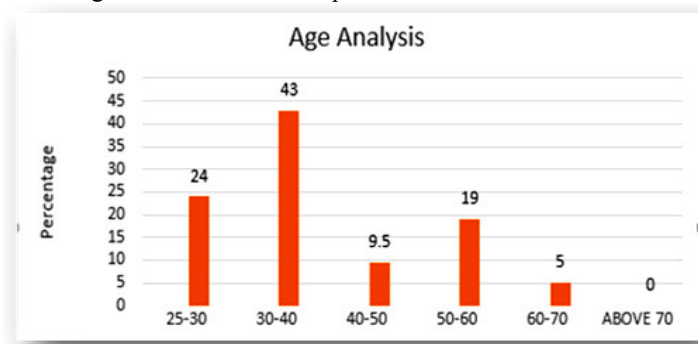


Figure 2: Age-demographics of the respondents.

76% of the respondents were male, 19% females, while 5% did not provided any-answer on their-gender. In reference to the gender-characteristics of the respondents, it can be confirmed, that SOE, as expected, has a male- dominated-faculty.

Regarding the age; the respondents were relatively-young, as majority of the faculty, 67% , were in the (25-40 years old) - age-bracket; the highest percentage of the respondents, 43%, were in the (30-40)- age-bracket followed by 25% of (25-30 years old), then 19% of (50-60 years old), 9.5% for (40-50 years old), and the least, 5% was for (above 70 years old).

Vis-à-vis faculty’ teaching-experience (length of time taught at the university-level): the highest percentage of the respondents, 52%, indicated their-teaching-experience as (4-10 years), followed by 13% - (1-3 years), then 10% for each of the 3 groups: (11-20 years), (21-25 years) and for the people providing no answer. The least, 5% was for the teaching- experience above 25 years.

The intended-share of each-of the academic-ranks was anticipated to be 20%, however, in several-departments certain-positions were not filled, and therefore, for the respondents, these-positions were replaced, by any of the closest-ones. Consequently, the academic-ranks of the faculty-respondents had the following shares of representation: Professor/Associate Professors-9.5%; Senior Lecturers-23.8%; Lecturers/Assistant Lecturers- 23.8%; Tutorial Fellows- 9.5%; and Graduate assistants- 33.4%.

2.2.2 Analysis of part 2: Research-questions.

Due to the relatively-large-number of questions, for the ease of reference, and avoidance of repetitions and perplexity, the results, in this-section, are followed, directly, by their-analysis. The questionnaire was evaluated question by question. Questions (main part, without sub-sections) appear exactly the way they are stated in the original-questionnaire.

Q1. What is the prevalence of examination-malpractice in the SOE?

81% of respondents agreed and 19% disagreed, that students frequently-indulge in examination-malpractice. Today’s education-system is based on Grade-Point-Average or some-numerical or alphabetical- representation of education-skills. Students opt to cheat, in order to help themselves obtain good-grades or marks, in courses or subjects they find difficult; 95% disagreed, that lecturers frequently-indulge in examination-malpractice, while 5% of the respondents provided no answer; The examination-malpractice was suggested to occur before-examinations by 48% of the respondents, while 52% disagreed by saying it occurs only during-examinations; seemingly splitting the opinions almost in half, and probably, requiring some further-explanations. From previous-researches, cheating is the intentional-use or attempted-use of unauthorized-materials, information or study-aids, before and during-examination, to attain specified-standard (Nyandoro, 2008; Blankenship & Whitley, 2000; Lambert *et. al.*, 2003; Cizek, 1993). This-explanation assumes, that cheating could take place any-time: before the examination is written, or during the process of writing the examination, in the sense that the students may have prior-knowledge of the real-examination-paper before sitting for it, and have had time to

thoroughly-prepare for it, or prepare crib-notes to use during the examinations (Gesinde *et. al.*, 2011).

Q2. What are the types of examination malpractice being perpetuated in the SOE?

The various-methods used by students to cheat were identified by the lecturers by the percentage response in agreeing. *Leakages* (where students get examination before it is actually-done) had 43%, who agreed that it do happen, while 57% disagreed. On *impersonation*, 71% disagreed, 24% agreed, while 5% provided no response. SOE is relatively undersized-school, with correspondingly small-departments and classes, therefore, impersonation is not really-probable, as the course-lecturers (after interacting with the class for the whole-semester) usually know everybody (by the time exams are given), at least by face. *Continuous assessment malpractice* had 57% agreeing, while 29% disagreed and 14% provided no response. *Script swapping* has been noted by 76%, while 24% disagreed that it does happen. *Bringing of foreign- materials* and *altering of marks /grades* had 86% and 14% respectively agreeing and vice versa. *The collusion* to cheat by students had 95% agreeing, while *marking malpractice by teachers* had 95% disagreeing. Lastly, the use of mobile-phones by students to cheat had 95% agreeing that it do happen while 5% provided no reply.

Q3. What are the causes of examination malpractice?

The various-causes are identified by the response: 14% agreed that *under-standardized examination-paper* causes malpractice, while 86% disagreed. *The fear of failure by students* had 86% agreeing as a cause to cheating, while 14% disagreed. The *inadequate preparation by students* for examination was agreed upon by 100%, as a cause for examination-malpractice. *Lack of resources for teaching* and *teacher-related-factors* had 24% and 13% agreeing, respectively, while the rest disagreed.

Q4. What are impacts of examination-malpractice?

Half-baked-graduates was agreed upon by 91%, as a result of examination-malpractice, while 9% disagreed, *Lack of confidence on our educational system* was also agreed upon by 81%, as an impact, while 19% did disagree. Cheating also *discourages hard work and honesty* and ultimately *lowers the standard of education* as agreed-upon by 95% and 91%, respectively. 91% did also agree that cheating decreases *validity and reliability of measurement process* and ends *breeding generation of fraudsters*. 67% disagreed, 28% agreed, while 5% provided no response on if examination-malpractice leads to *high-drop-out rates from university*.

Q5. What are the solutions to the problem of examination malpractice in the SOE?

The proposal agreed upon such as *provision of adequate teaching resources* had 71%, while 24% preferred other means. *Reduction of emphasis on paper qualification* had 71% who agreed, while 24% did not prefer it. *Implementation of relevant detection systems* had 100% agreeing that it should be done, as well as *eradication of cheating culture* which had 100% agreeing with it. 95% agreed on the need for *developing of moral-values* and also on provision of guidance and counseling services. 100% agreed that strict *monitoring of exams to assist students in maintaining academic integrity* could be the solution.

Q6. What are the methods to prevent cheating in exams?

The collection of all booklets whether used or not was having 90% agreeing so as to prevent cheating, while 10% did not prefer it. *Randomizing seating orders*, to avoid friends from seating together, so as to avoid cheating had 100% agreeing; *Having at least 2 supervisors at the exam-venue* was supported by 86%, while 9% disagreed and 5% provided no response. *Develop an academic honor code and remind students about it in class and in writing* was supported by 100% of the respondents.

Q7. Although, the overall response-rate for the instrument was 84%, Question 7, however, was answered only by 15 faculty-members, giving a response-rate of 71%, of these replied. This open-end-question asked to “*suggest any additional-ways and means of preventing and eradicating cheating in examinations at the school*”. The full-range of comments is beyond the scope of this-article; the given-suggestions were assorted; and after coding, they were divided into 3 major-themes, and highlighted, as follows:

(1) *Examinations setting*

a) 47% of the respondents suggested having exams printed in the host-school (*to decentralize examination-processing*), to reduce potential-leakage of examinations. The current MU’ practice is to submit the final-soft-copy of the exams (after internal and external-moderation) to the central-examination-office for printing, photocopying and safe-keeping. Numerous-examination leakage-cases, however, were already investigated, and resulted in the dismissal of several-responsible-culprits, of that office, and subsequent-replacement, with the new-officers; however, even after such-illustrative and publicized-consequences, one cannot guaranty, that the new-officials are less-corrupted, than the old-ones.

b) 57% propose to introduce *oral-examinations*; they however did not indicate, if they propose to replace current-almost-exclusive-written-format, or to conduct an oral-examination in addition to a written-one. Exclusive oral-examination is, apparently, has been conducted (at different-extent) in the universities of many-countries, such as UK, Germany, Austria, Russia, and Switzerland, among others. However the main-limitation of such-approach is that it is highly-subjective, because human-factor is involved in the evaluation and in the allocation of the marks, and, in addition, there are no records on student’-answers that remained (only the final-mark given), which is a big-drawback, particularly, in the case, when a student wants to appeal the mark-

received, and, also, for the external-examiner to cross-check the accuracy of that-marking.

Oral-examination is an extraterrestrial-specie in Kenya, as the entire-educational-system is almost exclusively relying on the written-assessment, at all-levels of education (from primary school - up to PhD-degree-level). Furthermore, the oral-examination is fundamentally-different from the current, well-known and widely-accepted-written-option. Majority of respondents, 57%, unexpectedly, proposed to introduce oral-examinations to reduce, or, even, eliminate cheating. The reason behind, can be hypothesized, that probably they have experienced the system, while undertaking their-studies in the counties, where the oral-examinations are in place. Lastly, regardless, if oral-examinations are to be used exclusively or in conjunction with the written-ones, the policy-establishment and proper-training and guidance is required, and therefore, a closer-look at oral-examinations is necessary, to comprehend the concept and to appreciate, both, the benefits and drawbacks, offered by this-alternative. This, however, is out of the scope of this-concise-study.

c) Currently, for the majority of the courses, in all undergraduate-programs at MU, the exam-mark is a summation of C.A.Ts. (Continuous assessment tests)-mark and the written-exam-mark, in the corresponding-ratio of 30% -70%, with 40% as a pass-mark for the course; 27% of the respondents proposed to put more emphasis on C.A.Ts.(involving practicals, laboratory experiments, and tutorials), that are done during the semester and adjust the ration, to become 50%-50%.

d) In the same-spirit, 13% of the staff, propose to modify the composition of an examination-paper, by *including more applications and calculations-questions*, and also make these-questions compulsory, where students cannot just copy, but must think. Currently, for the-majority of the courses, in all the undergraduate-programs at MU, the exam-paper consists of 7 questions, where students allowed choosing any 5. It is a well-known fact, that majority of students at SOE, always trying to avoid such-questions, concentrating purely on theoretical-recall-ones, which are much-easier to copy.

(2) During the examinations

(a) 93% proposed a *full-body search on entrance of the examination-venue*, as well as *providing some mobile-phone-detection-devices*. According to the MU, Rules and Regulations (2009), that govern the management and conduct of undergraduate and postgraduate-examinations, the following-issues are stipulated: categories of examination-irregularities, procedures for dealing with examination-irregularities, and the penalties for various-categories of examination-irregularities, such as: one or a combination of actions like giving a warning, cancellation of examination-results, suspensions for a given-period of time, or expulsion from the university, depending on the nature of the irregularity-committed. The rules and regulations highlight areas that constitute an examination-irregularity, and hence, warn students against committing the stated-offences.

Rapid-growth of mobile-computing, including smart-phones and tablets, presents a double-edged problem: along with previously-unimaginable-access to information come unforeseen-before-disturbance, such as use of mobile-phones during-lectures and their-illegal-use to cheat at examinations. According to Starovoytova *et al.*, (2016 b), MU' schools are currently adopting the pragmatic-approach, to explicitly-emphasize the prohibition of the carrying and the use of mobile-phones, at the beginning of the exams. The students are requested to switch-off their mobile-devices and to hand-them-out to the invigilating-teaching staff. But, not all of the students comply with this order, hence invigilators remain powerless. Students are taking advantage of mobile-technology and lecturers' reluctance to report cases of cheating. Under current regulations, there is no-provision of full-body-search, meaning that students requested by the invigilators to switch off their mobile-phones and put them on a reserved, for that purpose, desk. Switching-off and surrendering their-mobile-phones, on entering the exam-venue, however, is not being sufficient; as not all the invigilators do care to do that, consequently, some-students still sneak and use their-mobile-phones, for cheating in exams. In some instances, for example, students can even manage to bring two mobile-phones, knowing that they will have to surrender one, before the exam, so that they can use the second-phone for cheating, during the examination.

(b) 67% suggested that during the exam, students' *sitting-arrangement* will be such, as they will not be allowed sitting very close to each-other, to avoid "giraffe"- type of cheating; in the cases with large-classes, however, this is more or less-unattainable, as most of the exam-venues, at the school, have a modest-sitting-capacity of max 90 students.

(c) 60% proposed *installing surveillance CCTV cameras*, to closely-monitor the examination-process; and, in addition, to introduce a biometric-system of identification, to avoid impersonation. Unfortunately, these may remain a mirage for Kenyan-public-universities, which struggle with shortages of electricity and experience liquidity-predicaments.

(d) 33% suggested *providing a small allowance for invigilators*, to motivate them and to ensure, that at least two-lecturers-per-room are, not only present, but also very-vigilant, during the whole-3hour-exam-period; in addition they should be encouraged, to not hesitate reporting-immediately cheating-cases, to proper authorities. Some of us, it seems that, even when present during the exam, shamelessly (as an imbedded-habit), without hiding, or, even, trying to pretend to care, about possible-exam-irregularities, just reading a newspaper, checking mails, even marking reports, among other inappropriate, for an exam-invigilator, activities.

(e) 13% suggested *establishing separate examination-venues* (different from the lecture-rooms) which are secure, self-contained (with toilets), as some students, presently, do deposit, before the examination, the lecture-notes and other relevant-to exam-materials, in public-toilets and then, during the exam, asking to go out, some, even, severally, during the exam-period, and then, they have a freedom to read, for some-time, in the toilet. The students, are, usually, coming-back, very-enthusiastically, from the trip to the “toilet-library”, almost-running, so as not to forget, what they have just read. Some-lecturers do routinely-check and remove relevant-materials from the toilets, before the exam; however there is no solid-proof on who, exactly, deposited the materials.

(3) *Punishment for the cheaters.*

(a) 73% suggested, in order to ensure faster and stricter-resolution of disciplinary-cases of cheating, if a student found cheating, the hearing should be dealt with by a *special committee of the host-school*, instead of current-practice where the Disciplinary Committee of Senate is judging the student, which sometimes, can take a very long-time, as there are many-cases to attend to.

(b) 47 % proposed to *expose cheaters as the detrimental-examples of cheating*, e.g. put their photos *permanently* in the School’-notice-board, indicating their-names, year of study and their- department. And, most-importantly, stating their-respective-punishment given (all in a very large-visible-font). Probably, it will serve as an excellent-illustration, as some-students still think, that no one really gets punished, even if caught cheating.

(c) 5% wished-for *expelling cheaters without any hearing*, whatsoever. This, however, would be against the human-rights, as the affected-students, like any-other Kenyan-citizens are guaranteed, by the new Kenyan constitution of 2010, a fair-hearing. The Constitution of Kenya has been referred to as progressive-Constitution, which seeks to revolutionize a nation, whose independence is barely five- decades-ago (Kenya Law, 2014).

From the above-analysis of the question 7, it was realized, that some of the suggestions were practical-indeed, while the others were unrealistic. The authors, however, opt not to influence potential-consideration and deliberation on such-suggestions (putting it categorically as “black &white”), as the report of this-study was submitted to the Dean, SOE for familiarization and proper reflection, on the same with the School-board-members.

4. Discussions and recommendations

This-study was designed to comprehend, cheating-phenomena, on a deeper-level, by evaluating perception of the trend from the faculty’ perspective, so that ways could be proposed for preventing it from happening. From the analysis done, several-issues should be discussed further:

4.1 Issues related to the responses to the questioner

(1) *81% of the respondents agreed that students frequently indulge in examination-malpractice;*

The existence of examination-malpractices is verified by the fact that MU, indeed, does have examination rules and regulations, stating clearly what happens, when a student is involved in the irregularity. Commonly, when a student is caught cheating, he/she may be expelled, suspended, asked to repeat the year, a semester or is given a warning-letter. Such decision, however, may be examined and recommended by the Vice-Chancellor, depending on the gravity of the malpractice.

On a simple-question “Why is cheating so common?” the authors put equally-simple-answer: “Because grades *do* matter and everyone knows it”. Students are under exceeding-pressure (McCabe *et al.*, 2006) not only to pass the examinations, but to get good-grades (as good-grades generally associated in the society with potential-success), therefore some-students are determined to get good-grades at all-cost-possible (Wilkerson, 2009; Fontana, 2009; Lipka, 2009; McCabe, 2009; Danielsen *et al.*, 2006), resulting in cheating.

Major-reasons cheating still-continue are that: Students rarely get caught; Faculty fail to follow through, when cheating is observed; Fear of law-suits; and Time and effort involved in pursuing-cheating-incidence, among others.

On the other-hand, most (if not all) faculties have wondered, why students spend their-time planning, rehearsing, and executing illegitimate-plans, when they could spend that-same time, devoting themselves to their-studies. Again, a simple-answer would be to say that they are lazy; that cheating constitutes an easy and immediate-gratification, to , an otherwise, pressing-need. However, to view cheating as an impulsively conceived and executed-form of academic-dishonesty, and conceptualizing cheaters as persons lacking “self-control” as a result of poor-parenting and deficient-moral-training, overlooks a socio-structural-facts (Gottfredson &Hirschi, 1990), in relation with the Attribution Theory applicable in this-study.

For some-students, a split between the culturally-prescribed-symbols of success (i.e. a college degree) and the absence of legitimate-opportunities for their-attainment, turns into implementing innovative-methods of adaptation, such as cheating (Merton, 1938). Cheating, like criminal-behavior in general, represents the adoption of illegitimate-means of responding to a perceived-frustration, in the pursuit of a valued-goal. A recent-application of two-dominant criminological-theories to academic-dishonesty, hypothesizes that students whose ambitions are thwarted from achieving their valued-goals (i.e. students with a low GPA), who are threatened

with removal of positive-goals (i.e. loss of scholarship), and who are bombarded with negative-stimuli (i.e., excessive-parental-pressure to obtain good-grades) ought to be more-likely to cheat, than those, who do not face such-strains (Smith, 2000). Although these-previous-examples provide an insight into cheating, the most-noted-reason for student cheating is due to an increasing-influence of peers (Koerber, 2005). This justification appears to stem from the old-saying, “Everyone is doing it; why shouldn’t I?”

Students are very-crafty and innovative, when comes to cheating; they do not discriminate in using both, traditional and hi-tech-methods, to commit their-misdemeanors. The traditional-ways of writing answers on crib-sheets, on body-parts, on shoes, under the caps, and on coffee-mugs or water-bottles are still used, as are codes based on tapping, hand-signals, and noises, among others.

(2) 86% of the members of staff disagreed that under-standardized examination-paper causes examination-malpractice as well as that altering of marks/grades have been witnessed by them; in addition, 95% of them disagreed that lecturers frequently indulge in examination-malpractice and 86% of the respondents disagreed that teacher-related-factors are causing examination-malpractice. The lecturers seem to be self-protective; as increasingly, staff-members are taking a defensive, or, denial-stand, portraying themselves only as innocent-observers, and not as active, and, sometimes, self-initiated-participants of the examination-misconduct. This is not surprising, as studying a sensitive-issue such as cheating-behavior, in exams is not without confines. Cheating is unacceptable-behavior that violates moral-values, attitude, and institutional and social-regulations. Thus, faculty, who participate in cheating, try to hide their-corrupt-behavior, and, even, ashamed to talk about it, later-on. Based on that, studying such-behavior using a self-report-questionnaire could be seen as one of the study-boundaries.

Fortunately, the picture may not be as depressing as this-synopsis may appear, at the first-sight. One of the most-encouraging-aspects of the-research is that many-faculties are genuinely-concerned about the issue and they are willing to devote time and effort to addressing it, in their-departments.

Teaching-staff is not always on the right-side; this was confirmed, for example, by McCabe-report, that 47% of students declared teachers sometimes ignore cheating. The overriding-reason, why teachers do not report cheating, is due to the administrative and bureaucratic-procedures, involved in pursuing cheating-allegations (McCabe, 2001). A study by Njeru (2008) found, that teachers do not invigilate examinations well, but rather spend time marking papers, or reading newspapers or novels. This provides a fertile-ground for students to cheat. The study by Nyamwange (2013), established more devastating-facts, that there was very-poor invigilation of examinations in Masaba District schools, as some-teachers invigilate from outside examination rooms, while others sleep in class, during the examination-period, giving students complete-freedom to cheat in the examinations. Several-forms of teachers’ cheating are discussed in the literature. There could be totally illicit activities, so called ‘explicit cheating’, such as changing student responses on answer-sheets, providing correct-answers to students, or obtaining copies of an exam illegitimately, prior to the test-date and teaching students using knowledge of the precise exam questions. There is also a ‘hidden cheating’, in which educators attempt to raise a school overall performance-profile, by retaining low-scoring-students in grade, classifying more-students as ‘special needs’, in order to exclude their-scores from school-averages, or lavishing attention on students, who are close to passing, and ignoring those, who are sure to do well and those likely to fail (Kohn, 2007). Additionally, there could also be ‘soft’ forms of teacher-cheating, such as ‘teaching to the test’. Taken together, Bertoni *et al.* (2012) and Ferrer-Esteban (2012) studies suggest that teachers’ cheating - if any - is particularly-concentrated in elementary and secondary-schools and less in universities. Nevertheless, ignoring cheating, at any-level, however, is a passive-way to an academic-misconduct.

Faculty plays a fundamental-role in reducing opportunities for cheating, through the careful-design of authentic, innovative and meaningful-assessments, that students cannot complete by simply “cut and paste” from internet-sources and also very-strict-invigilation during-exams. Kirkvliet & Sigmund (1999), also recommended straightforward-preventive-solutions to cheating; and found that, when students were verbally-reminded by their-lecturers that cheating of any-kind was an infringement of university-regulations, they were significantly-less-likely to cheat, than students, who were reminded only through written-handouts. In addition, Ormrod (2003), gives several-strategies, such as pointing out the real-world-utility of knowledge and skills, covered in class, emphasizing the importance of deep-understanding, rather than memorization, and encouraging students to view academic-staff as useful-resources, for learning, rather than just as lecturers and exam-graders.

(3) Almost all faculty (95%) are aware of the misuse of mobile-phones, hence prevention of this particular-method will make a significant-difference in the cheating-problem at the SOE.

According to Starovoytova (2016b) the capability of today’s mobile-phones gives a student numerous-ways to cheat in exams. During exams-period, a student may constantly-communicate with fellows outside the exam-room via email and use Short Messaging Services (sms). Students and outsiders can exchange information (Questions and Answers) via email-attachments. Through a mobile-phone-camera, a student can snapshot questions and send, as an email, or, a WhatsApp attachment to outsiders, for help, and in the same-way student can receive answers. Moreover, as mobile-phone provides internet- connectivity; student can post questions

online and receives responses, almost, instantly, and from many-engines. Furthermore, with the storage-capacity that mobile-phone offers, students can pack lecture-notes, e-books and any-other-unauthorized-materials, relevant to the exam in question, on their mobile-phones, sometimes before the exam-period. Other-applications installed in a mobile-phone could also be used by a student, to commit cheating; such applications include dictionaries and scientific-calculators.

The authors believe that instructors, by helping inform students of the potential-consequences of their actions, can help systematically-educate students and, perhaps, lead them to making a more informed-decision to not use their mobile-phones, while in class and in exams.

(4) *Implementation of relevant detection systems had 100% agreeing that it should be done as well as eradication of cheating culture.* In this spirit, SOE has already developed several-simple and cost-effective mobile-phone-detection and jamming-devices. Interested-readers can refer to Starovoytova *et al.* (2016b); Ataro *et al.* (2016) and Sitati *et al.* (2016).

On the complex-issue of eradication of cheating-culture, no devices, alone, regrettably, will provide much-help. Where corruption seems routine, promoting integrity among young-people is critical to building a better-future. As an example of the efforts of the Kenyan Government to address this-issue, Figure 3 shows the concept of the National Anti-Corruption Plan, Kenya, where education is one of the pillars, in achieving prosperity of the nation and it is also an important-part in the motto, stating” Shared Information, Education, Action & Responsibility”. The education-sector is fully-responsible for producing the well-qualified- manpower that will be expected to propel the government towards realization of Kenya Vision, 2030.

“Trust and student honesty ... remain central to any successful-academic-system” (Evans, 2006). The authors just want to amend this-statement, by saying that it is not only students, but all of us, everybody, is responsible for academic-integrity. McCabe and Treviño make the compelling-case that, the overall-climate or culture of academic-integrity on campus may be the most-important-determinant of the level of student cheating on that-campus (McCabe & Treviño, 1997).

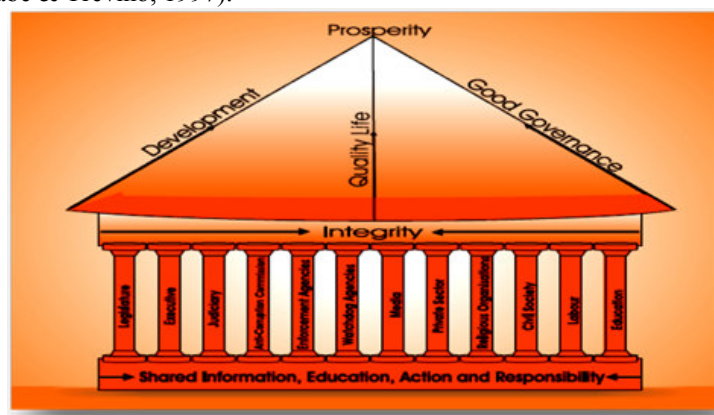


Figure 3: NACP (2014)

Literature and several-past-studies have identified various-concerns about academic-integrity. According to the study by Whitley& Keith-Spiegel (2002), the concerns with academic-integrity are as follows: *Equity*: students, who cheat may be getting higher-grades than they deserve, and students who do not cheat may get less, than they deserve. *Character development*: students, who see that no action is taken against those who cheat, take academic-dishonesty as acceptable, thus, influence their-character. *The mission to transfer knowledge*: students, who cheat in exams in higher-education, may not acquire the knowledge to which their degrees are supposed to demonstrate, as it diminishes the intellectual and moral-capital required by society for its-development. *Student morale*: cheating discourages, kills the morale, and frustrates students, who do not cheat, if they see those who cheat going unpunished. Some-students may be discouraged from working-hard and may also resort to cheating. *Faculty morale*: The staff- members become stressed dealing with cases of cheating, and feel personally-violated and mistreated by the students who cheat.

Academic-integrity, according to the International Center for Academic Integrity (ICAI), encompasses the five values of honesty, trust, respect, fairness and responsibility. Academic-integrity involves ensuring that research, teaching and learning are conducted honestly and fairly by faculty, staff and students, alike.

To nurture the academic-integrity, the faculties should stress the importance of Integrity to the learning process (Honest work builds self-esteem, knowledge, and skills. In contrast, cheaters don't learn, they undermine the quality of education, and they devalue the degrees offered); Highlight Academic-Integrity- Policy and the importance of academic-honesty in class and in handouts; remind students of the policy before exams; Discuss issues of integrity, especially, those-relevant to the course, and to students' future-careers. Give criteria for the “hard-choices” in your-field, with examples of how ethical-issues can/should be resolved; Solicit students' help

in creating a climate of integrity in your-class. Encourage students to report cases of cheating; Inspire, encourage, and model integrity. Positive reinforcement works better than scare-tactics, and internal-constraints (morals, ethics, and character) are the most-effective. As educators, faculty directly influence students, attitudes and development, and can reinforce students- integrity.

The other-author proposed implementation of an “Institutional Ethics Audit”, at academic-institutions. The Institutional Ethics Audit assesses: (1) institutional culture of ethics, (2) policies related to ethics, (3) enforcement of ethical-policies, and (4) training. Once the current-level of academic-integrity is identified, school administrators can plan, develop, and implement activities that can be used, to increase ethical- standards (Acharya, 2005).

Supervisors and invigilators should be trained and equipped, to deal with the cheating-tricks of candidates. Female-candidates have to dress properly; and all-students should be thoroughly-searched by the same-gender-invigilators, before the examinations. Invigilators should enforce and ensure compliance to examination regulations, especially with regard to prohibited-items, such as mobile-phones, in the examination-centers. Disobedient and unruly-candidates should not be left unpunished, so as to serve as prevention to others. Government, at all-levels, should also prioritize their-responsibilities by budgeting adequate-funds to enable for expansion of the existing-facilities and for the development, implementation and monitoring and evaluation of integrity-policies for education.

(5) *Develop an academic Honor Code* and remind students about it in class and in writing was supported by 100% of respondents. This is accord with Macdonald and Carroll’s (2006) “holistic approach” to the problem, focusing on prevention, rather than penalty. McCabe *et. al.* (2004) also found, that the incidence of “serious cheating” in colleges with Honor Codes was 25%-50% less, than in institutions without Honor Codes.

Although Honor Codes are not a panacea for cheating, surveys conducted by the Center for Academic Integrity in 1990, 1995, and 1999, involving over 12,000 students on 48 different-campus, showed that serious-test-cheating on campuses with Honor Codes, is typically 30-50% lower, than the level on those without honor-codes. The level of serious-cheating on written-assignments is 25-30% lower (CAI, 1999).

In SOE, the Honor Code is yet to be developed. Then it should be explained and discussed, to help students understand all forms of academic-dishonesty: plagiarism, copyright infringement, and receiving inappropriate help on a project, among others. After that, all students sign their name to the Code in pledge of academic- honesty, making them responsible not only for adhering to the highest-standards of truth and honesty, but also for upholding the principles and spirit of the Honor Code.

In addition to the numerous-recommendations, made by the academic-staff in their-responses, it might be useful to finish this-study by paying attention to what can be done to prevent cheating in exams, according to the previous-researchers.

4.2. Recommended-solutions for cheating at examinations (done by previous researches)

The review recorded-below does not claim to be a fully-comprehensive-account of every-instance related to the solutions to cheating in examinations, but it does give a fairly-good-overview-picture, and, probably, include the most-significant-ones-identified, for which information was available, at the time this-study was carried-out.

Hinman (2000), proposed a three-way-approach to dealing with examination-malpractice. The three approaches are: Virtues approach, Prevention approach, and Policeman approach. Later-on Underwood (2006), modified the name of the approaches, to give a better-reflection of the content, to become “3E-Approaches to cheating”, being Virtues approach (Ethics), Prevention approach (Engineering), and Policeman approach (Enforcement). Regardless of name change, the concept of each, however, remained the same.

(1) *The virtues approach (Ethics)*, involves nurturing students, who do not want to cheat, as well as building an environment, that does not encourage cheating. This begins with institutions of learning formulating and making relevant-policy-statements on examination-malpractices. It is not enough to formulate policies; the students must be convinced, that the institution is committed to such-policies. One way to show commitment is, for the institution or school, to ensure, that all its dealings and practices, are ethically-carried-out as dictated by relevant-laws. The institution will lack the moral-right to condemn cheating among students, if it is involved in shady and shabby-practices. Brown & Howell (2001), posited that institutional-commitments to policy-statements on examination malpractice can influence students’ perceptions. The lecturers and technical-staff should also show good-examples to students. They should demonstrate commitment and forthrightness in their-dealings with students. Underwood and Szabo (2004), observed that levels of malpractice decrease, when students perceive that their-teachers are committed and frank.

(2) *Prevention approach (Engineering)*, consists of digital and non-digital-actions taken to reduce or out-rightly prevent cheating before, during and after-examinations. Some of such-actions include, but not limited to, the following:

- a) Ensuring the security of examination-question-papers and answer-sheets, before and after the examination.

- b) Producing multiple-forms, or, versions, of examination-questions, and ensuring, that no two candidates having the same version of question-papers, are seated close to each-other. This implies that the questions are same, but the numberings are different.
- c) Setting up of online-multiple-choice-examination-questions, which present each-candidate with questions, randomly selected from the test-bank; No two-students are presented with identical-questions. The Joint Admissions and Matriculation Board (JAMB) experimented with this-method, during the 2014 among Universities, Polytechnics and Colleges of Education admission examinations, and, has confirmed, that this-method has potential to reduce examination-malpractices
- d) Banning students from bringing in mobile-technological-devices into examination-venues.
- e) Installation of jammers in examination halls. Jammers are devices, which prevent radio-equipment from sending and receiving signals, relevant to their-function. This will prevent communication between candidates and persons outside the examination hall. It will also hinder internet browsing, during-examinations.
- f) Installation of detection-devices that could indicate, whether a mobile device is being operated within an examination hall.

(3) *The policeman approach (Enforcement)*, entails monitoring and enforcement of laws and regulation guiding an examination. Monitoring and enforcement involves proper-invigilation, apprehending and appropriate sanctioning of defaulters. The sanctioning of defaulters will serve as deterrent to others. The lecturer may impose the following sanctions: Issue of a warning, Cancellation of exam, and Temporary or permanent expulsion from the university among others.

In the United Kingdom, for example, the Higher Education Academy has developed 12 recommendations for good-practice in relation to academic-integrity-policy, which resonate strongly with the five-core elements of exemplary academic-integrity-policy. The major-measures in place were identified as: the use of instruction manuals in examinations, vigilant invigilators, and suspension of offenders and nullification of results. Areas of improvement identified were training of staff, that handles examinations, motivation of staff that runs examinations, use of Circuit Camera Television (CCTV) and reducing the invigilator-student- ratio (Scott, & Morrison, 2006).

Other recommendations, on how to deal with cheating at examinations, were made by Moon& Jenkins (2011); Josephson & Mertz (2004); and Bedford *et. al.* (2011), among others, nevertheless all their recommendations were under the umbrella of the above 3-E-Approaches.

5. Conclusion and recommendations

The results of the-survey, where 81% of the respondents agreed that the students frequently-indulge in examination-malpractice, clearly-reveal, that cheating is a significant-problem in the SOE; the outcomes also supported by other research-findings, that cheating in exams in undergraduate-engineering is widespread, serious-problem and that there is no magic-way or “silver bullet” to stop *all* examination-misconduct. Taken collectively, the outcomes of this-study could potentially have meaningful-implications for both classroom-practices and theory-surrounding the concept of cheating. Results of this-study also suggest that theoretical-explanations adjoining the negative-effects of exam-cheating should be expanded. The outcomes can also help guide the development and implementation of new-policies on academic-integrity, or, the modification of existing-policies, to decrease the opportunity or motivation for cheating at examinations.

The sample-size for this *unfunded*-study was admittedly-small (25 subject-participants were from only-one out of 13 schools at MU; also MU is just a single-representative out of the 59 Kenyan-Universities). Although conditions in other-institutions could be similar to those of MU, the external-validity, or universal generalize-ability, is not claimed for the results of this-study (as such, it is limited to this-survey-population).

Based on the findings, the authors offer some-practical-advice for both lecturers and students: The most-fundamental-value of any academic-community is intellectual-honesty, which heavily-rely upon the integrity of each and every-one of its members (as “the chain is as strong as its weakest-link”). Hence, on the issue of cheating at examinations, there is no need to point fingers at each-other and shifting blame, as every-single-one of us is responsible for the academic-integrity, which is essential to the reliability of the mission and success of the University and is expected of all, students and staff, to avoid dishonest-practices. Enforcing academic-integrity by limiting the opportunity for academic-fraud, in the first-place, is a huge-undertaking, but it is one that is manageable, with more-attention, cooperation and support of all-stakeholders, such as educators, administrators, parents, government-officials, and students. The stakeholders should systematically-apply (in appropriate-combinations) all of the 3E-Approaches to combat cheating-menace.

Although individual-universities are concerned in protecting their own-reputations, it is essential for the credibility of the whole-higher-education-system, that they are seen to deliver a hands-on and consistent-approach to academic-integrity. Universities have a responsibility to implement a holistic-approach, which rooted on the key-principles and values of integrity, in every aspect of the educational-enterprise. Identifying and

eliminating corruption, in the education-sector, is essential to ensuring that learning-opportunities are not diluted. It takes the willingness of students, faculty, and administration to address ethics and professionalism-issues, instead of turning a blind-eye, when these-areas are compromised.

The challenge for the school, therefore, is, now, to tailor effective-strategies to prevent cheating-opportunities and to establish and enforce valuable-means of dealing with specific-patterns and types of cheating. Prevention is always better than cure, so engineering-school-administrators and faculty should try to establish a classroom-atmosphere, where it becomes very-difficult, both physically and psychologically, to cheat.

Finally, it is worth pointing out that President Obama said, during his-inaugural-speech, “For the world has changed, and we must change with it” (Woodward, 2014). In the same-spirit, the academic-fraternity should change, as the availability of new technological-tools has given students more-creative-ways to cheat on examinations (as never-before), therefore, faculty-members need to be aware of these-techniques and even try to be one-step-ahead, pre-empting every-cheaters’-moves.

Recommendations

The study recommends that in order for university to prepare students for success in life, career-growth and community-development; Lecturers, parents, and the SOE-community need to work together, towards a shared-vision of ethics and excellence. This involves promoting integrity, in every aspect of the academic-enterprise, including university mission-statements and marketing, admissions-processes, academic-integrity-policies, assessment-practices and curriculum-design, information during-orientation, formulation of the Honor Code, embedded and targeted-support in courses, and counseling for the students, among others.

The findings of this-study also point to several-directions for *future research*. First, it appears, that the method used in this-research was successful and could be utilized by future-researchers. One suggestion for future-researchers is to further-determine, if there are some-distinctions in perception of cheating examinations by the faculty in other-schools, with different-areas of specialization, within the university, such as the largest-school of Education, and two of the most-prestigious-schools: the School of Medicine and the School Law. Also it would be in order to conduct comparative-studies, on the same-issue, between private and public-universities.

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