

Towards understanding the role of institutional pressures in raising awareness about student academic integrity issues in Australia

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Abstract: - Academic integrity continues to be an area of concern for many universities in Australia and worldwide. This paper uses an institutional perspective to understand academic integrity issues and discusses how institutional influences raise awareness about academic integrity issues in Australian context. The findings can assist academic staff and managers in higher educational institutions to promote ethical behavior to current students and work towards developing responsive academic integrity practices. The paper discusses inclusion of professional ethics topics in a number of units and future work in developing e-learning on professional ethics using real world case studies in Information Communication and Technology (ICT).

Key-Words: - Academic integrity, institutional pressures, Australia, ethics, higher education

1 Introduction

ICT technologies such as Big Data, Cloud Computing and Social Media proliferate the global marketplace, ethics has become an important component in ensuring that the ICT (Information and Communication Technology) policies and practices benefit the society as a whole. Governments and societies expect ICT professionals to operate in an ethical and responsible manner at all times. Ethical considerations are essential in all areas of ICT systems development including where prescriptive regulatory processes cannot be observed or imposed. Thus the onus is on ICT professionals to ensure that ICT products and services are developed in an ethical manner [12, 39, 45]. Ethics is defined as the study of morality. Morality is 'a system of rules for guiding human conduct, and principles for evaluating those rules' [46].

All higher educational institutes have a shared responsibility along with the ICT graduates, employers and the industry as a whole to contribute to the development of ethical competence of the new ICT graduates. Stappenbelt [40] states 'personal ethical change will take place in our students. While these students are under our guidance it is imperative that we engender and enable positive development'.

While there is no expectation that students will be able to find an exact solution to ethical issues facing them, there is explicit expectation from institutes and employers that they can come up with a best possible solution under the given circumstances using available resources after careful consideration of the consequences of their decisions. Students need to develop confidence in the decisions they make or solutions they propose and be aware that they need to convince informed and experienced professionals who might go over their decision making processes now or in the future [18, 39].

Section 2 presents background information to the Australian Higher Education industry including quality assurance agency, ICT programs and university and ICT employer expectations of ethical behaviour in students and professionals. Section 3 reviews the existing literature on academic integrity particularly amongst students and identifies gaps in research. Section 4 presents the research approach and theoretical framework underpinning this study. The value of using institutional lens to study the problem is discussed in section 5. Section 6 sheds light on the institutional players. The next section provides a detailed account of our analysis on the institutional pressures operating in the higher education sector and the manner in which they increase visibility, awareness, proactive and responsive measures to maintain academic integrity standards and promote ethical behaviour of students

during studies and post-graduation. Our conclusions are presented in the final section.

2 The Australian Context

The educational industry in Australia remains the third largest export industry behind iron ore and coal. According to Universities Australia [19] international students generated \$20.3 billion in export income in 2015/16. The international education created more than 13,700 Australian jobs. There were more than 320,000 students from 130 countries who were studying in Australian universities in 2015/16. Australian universities accept domestic and international students in to their IT programs. There are additional entry requirements for international students such as English proficiency and student visa.

There is an emphasis on the role of ethics in educational institutes and organizational context [10]. Study programs and leadership are increasingly influenced by ethics and organizations moving towards adding ethical dimensions to their mission, values and codes of conduct.

A key skill that all ICT students and graduates need is the ability to embrace as well as integrate ethical principles during their study and post-graduation. Studies conducted in the past [40, 41, 42] have highlighted the role ethics play in students' work and learning in ICT and Engineering education. ICT students in Australia undertake preparation for behaving ethically and responsibly by attending and completing mandatory ethics and professional development units. Students enrolled in ethics units are taught how to conduct ethical analysis using existing ethical theoretical frameworks and using various professional workplace scenarios.

When teaching ethics, case studies have been found to be more effective for aiding students' understanding of ethical issues and application of systematic ethical analysis. Discussing historical cases that highlight unethical behaviour assists students to identify the ethical values that have been neglected and consequences of such unethical actions. Using the skills students acquired from those units students are expected to demonstrate active ethical commitment in all their future ICT work including current and future assignments or projects to the highest ethical standards. Further, ICT students are required to develop and demonstrate technical, research and soft skills during their course of study. Whether implicit or

explicit all subjects require assessment of students' ethical decision making skills during the learning and assessment activities they undertake every semester during their studies.

In Australia, Part A, Section 5.2 of Higher Education Standards Framework (Thresholds Standards) 2015 [43] includes information on academic integrity. In particular, it sets out broad requirements for a higher education provider to comply with. For example, policies that promote and uphold academic integrity of courses, policies and procedures to deal with academic misconduct and allegations of misconduct, preventative steps to mitigate foreseeable risks to academic integrity, communication of academic misconduct policy to students and good academic practices guide [34].

A recent report published by the Australian Tertiary Education Quality and Standards Agency (TEQSA) has shed light on strategies higher education providers in Australia need to adopt to develop academic practices that promote academic integrity and ways to deal with academic integrity breaches [43]. TEQSA [43] defines academic integrity as 'the moral code of academia. It involves using, generating and communicating information in an ethical, honest and responsible manner'. Academic misconduct refers to a breach of academic integrity and this includes plagiarism, cheating or falsification of data [43]. Another suitable definition is 'adhering to the moral and ethical principles of the university when studying, and when using others' ideas, knowledge and information' [31].

The TEQSA report [43] in particular focused on a new threat to academic integrity known as 'Contract Cheating'. This type of cheating occurs when students use third parties to undertake assessable components of their course. The report further discusses the role digital technologies play in raising concerns about the academic assessments submitted for marking. For example, students use third parties such as essay writing services, agency websites, academic advertising forums of cheating services and file sharing sites. In particular, this type of cheating is hard to detect as it involves third party compared to other types of cheating such as plagiarism, poor academic literacies and lack of understanding [43].

3 Review of Literature on academic integrity and research gap

Given that ethics has gained prominence over the past decade in the ICT industry, unethical behavior becomes easily noticeable and organizations are held accountable for such actions [17, 25, 26]. The visibility of educational institutes and their role in the community creates additional pressures to understand and respond to various stakeholder expectations and develop academic practices that can help them acquire legitimacy and build reputation. Educational institutions need to disclose the ethical values they have adopted and also make the code of ethics available to general public. The requirement for university graduates to have ethical familiarity and demonstrate active ethical commitment has become increasingly important for seeking employment in addition to employer expectations regarding new graduates' technical knowledge [45]. For example, in Australia many IT interviews include direct questions involving ethics that graduates are required to answer satisfactorily. Typical questions employer ask graduates include: (i) Are you familiar with the Australian Computer Society (ACS) code of ethics?; (ii) Can you provide examples of ethical issues you faced as a student and how you resolved them?; (iii) Which key ACS values would influence your ethical decisions?; and (iv) What ethical issues are you likely to face in this job? [4].

Previous studies [1, 11] discuss how technological advancements have exacerbated the academic dishonesty problem and made it increasingly easier for students to access and misuse academic resources. They argue that teaching staff play an important role in influencing students' behaviour towards assessments and that their diligence in marking, supervision of students and their relationship with students influence willingness to behave dishonestly. There is a body of literature [27, 28, 29, 30] on factors that could potentially influence student ethical decision making in university setting. For example, [44] focused on culture, [47] looked at institution characteristics, [48] focused on institution type, [49] on teaching and training context. Hanson et.al [20] provides further evidence that university staff can act as role models for students and their behaviour can help students in ethical sense making. They highlight that when students perceive that the institutional leaders make a fair decision, they are more likely to consider and appreciate ethics in their decision

making. Attitudinal or behavioural shifts can occur as a result (for example, shift from self-benefits to what is the right thing to do).

Another study [41] discusses for and against the notion of whether ethics can be taught to ICT and engineering students. Some popular ethics textbook in ICT coursework programs in Australian institutes [39, 46] discuss the philosophical ethical aspects and relate it to the professional ethics. In particular, they discuss the Australian Computer Society (ACS) Code of Ethics/Professional Conduct [45] and the Engineers Australia Code of Ethics [50]. These codes focus on three key areas such as common morality, personal morality and professional code of ethics. The primary aim of the core ethics units students undertake in their coursework is to enhance their ethical knowledge and improve their ethical judgement making capacity. Abate [41] revealed that 'individuals who learn to think ethically... stand the greatest chance of being able to act ethically in a variety of diverse or unpredictable circumstances'.

A study by [35] which surveyed 15,304 students on academic integrity at six Australian universities found that majority of the students were satisfied with the information about academic integrity policy at their university. Their study revealed that there was lower awareness among international students on academic integrity policy. Another study by [36] combined various data sets collected previously on contract cheating and analysed them. The samples they examined exhibited variation (0.3% to 7.9%), however on aggregate they found only 3.5% of students engaged in contract cheating. From the analysis of the recent literature (2017-2018) we contend that there has been increased awareness among international students in Australia about academic integrity issues due to several new initiatives from both higher education institutes and regulators with students starting to take notice of such initiatives. A recent study by [37] took a different approach in understanding contract cheating. Rather than focusing on why students engage in plagiarism, the study explored why students don't engage in contract cheating. Out of 1318 responses received in this study 98% of the students reported that they never engaged in contract cheating. Some key reasons include motivation for learning, morality, detection and punishment. Such a finding adds value to literature by revealing that there is also ethical underpinning to why students don't engage in contract cheating.

While most academics can assist students to be better prepared to reason their way through complex ethical issues and dilemma they are likely to face in their job, adherence to the professional code of ethics has to be wilfully adopted by individual students as they gain entry in to their professional life in the ICT industry. In ICT industry, significant emphasis is placed on technical knowledge with non-technical skills such as ethical decision making skills taking a second priority. In the past five years, significant shift from this notion has occurred resulting in topics such as introduction of ethics and human factors included in the core university curriculum. In spite of such initiatives there has been significant rise in instances of academic misconduct in Australian universities [32, 43]. **Table 1** highlights sample cases involving academic integrity.

While there is literature on university cheating cases, plagiarism, academic misconduct [11, 43, 44] a wider focus on understanding the institutional pressures that exist in the Australian higher education industry and if they play a role in influencing student attitude towards active ethical commitment provides a more complete understanding of ICT student ethical decision making within universities. Our analysis can further reveal the collective relationships between institutional stakeholders of the Australian higher education industry and how they influence academic integrity issues.

Given that the higher education industry is expected to grow over the next 5 years, new and emerging academic integrity issues need to be addressed by various stakeholders of the industry. This also solicits the question of *‘What institutional pressures exist in the Australian higher education industry and what role they play in raising awareness about academic integrity issues?’*

The interplay between these institutional pressures are likely to intensify over the coming years within the higher education sector. Such pressures have a role in educating university students about ethical commitment and encourage them to think ethically [41].

Table 1: Sample cases reported in the public domain on academic integrity issues

Issue discussed	Comments
Contract cheating [53]	The website had a discussion article on the newly released Good Practice Note by the Australian Higher Education Regulator TEQSA. An interesting note here is that contract cheating is an international issue and that all tertiary education quality assurance groups need to collaborate frequently to combat this issue
Contract cheating [54]	This website discusses statistics involving contract cheating in Australian universities and consequences for students if they are found guilty. For example, a Victorian university expelled students for contract cheating highlighting the university’s zero tolerance to cheating
Contract cheating a great threat to academic integrity [55]	Discusses contract cheating issue in the UK and Australia where students used third party to write essay and take examination for them. Article concludes that contract cheating is a global issue and needs urgent intervention
Technological advances making it hard to detect academic cheating [56]	Discusses in the UK context how technological devices such as mobile phones, smart watches and hidden earpieces have created more opportunities to cheat in exams
Plagiarism as a serious concern for universities in Australia [57]	This article highlights increase in plagiarism cases across the higher education industry and strategies universities adopt to identify and deter electronic cheating. In particular, there is a focus on one popular plagiarism software and how it assisted academics to detect plagiarism and report it to the university disciplinary committee
Outsourcing assignment to third party [58]	Given the global nature of the Internet, universities have to cope with new types of cheating such as contract cheating. The article discusses a website that students use to post tasks and strangers are able to write essays for them. The article further examines the implications of such sites on higher education system in Australia
Cheating in exams [59]	This article raises issues in relation to cheating in exams and plagiarizing assignments in South Australian context. It uses example cases to highlight how universities are taking academic cheating seriously and penalties associated with cheating

4 Research approach

This paper adopts an institutional perspective and explains a role for institutional pressures in the higher education sector in encouraging ethical behaviour among students. First, an understanding of institutional pressures in the Australian higher education industry is developed using Neo-institutional theory [6, 9, 15, 21] as the theoretical framework for the analysis of several secondary data sources. Neo-institutional theory was appropriate as it highlights the role the institutional factors and external pressures play in influencing organizational practices [5, 13].

Secondary data sources were used in identifying the institutional pressures and their role in raising awareness about academic integrity issues. The sources include: University academic integrity policies, academic integrity practices focussed research papers, institutional theory research papers, website of higher education regulator, Government Department of Education and other stakeholders of the higher education industry, research papers on academic integrity and ethical values, websites with articles on academic integrity issues, academic integrity conference websites, related scholarly journals and literature review articles. Guidelines proposed in evaluating secondary data sources for research purposes were used while evaluating these sources for their appropriateness and effectiveness [51].

Literature in [14] identifies three key institutional pressures that operate in any industry. They are regulatory, normative and mimetic pressures. Regulatory pressures is defined as 'pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function, such pressures may be felt as force, as persuasion or as invitations to join in collusion' [14]. In discussing mimetic pressure they state that 'when goals are ambiguous or when the environment creates symbolic uncertainty, organizations may model themselves on other organizations' [14]. Normative pressures urge organizations to conform to societal norms and stems from professionalization. Further, customer pressure also plays an important role in influencing organizational practices [3]. Customer Pressure is defined as 'force, persuasions or invitations that are applied both implicitly and explicitly by Customers to which firms must respond' [22].

5 Institutional Lens

Research work by [8] showed how institutional lens can help understand how codes of corporate ethics, their use and dissemination are influenced by various institutional pressures that firms are exposed to. Their study argued that an institutional perspective allows for a detailed insight into how various exogenous and endogenous factors influence organizational behaviour [33].

Study [20] focused on ethical decision making by business students in American universities. It pointed out that most business students who act dishonestly in university also behave dishonestly in the workplace. The authors argue that university environment influences students' ethical decision making. Students' perception of how the institution enforces the academic rules, fairness and institutions' own ethical behaviour influences students' attitudes and behaviour towards appreciating the importance of adhering to ethical principles. These findings highlight the need for students to avoid acting in self-interest and instead pay attention to adopting ethical values that can bring reputation to their university.

6 Identification of Institutional Context in Australian Higher Education Industry

All universities in Australia have policies and procedures to deal with academic misconduct. The key regulators in the Australian higher education are TEQSA (The Tertiary Education Quality and Standards Agency), Australian Government Department of Education and Training, Department of Immigration and Border Protection and Universities Australia. TEQSA regulates higher education industry using a standards based quality framework [43]. Its primary aim is to protect and enhance Australia's reputation for higher education. The Government Department of Education [24] is responsible for national policies and programs that helps all Australians to access quality and affordable higher education programs. The Department of Immigration and Border Protection is responsible for student visa approval and compliance with the visa requirements [23]. Universities Australia is the peak body responsible for representing the higher education sector. It represents the Australian universities both nationally and internationally [19].

7 Analysis of Institutional Pressures and how they influence Academic Integrity practices

To understand institutional pressures, we take guidance from the work of two eminent scholars [6, 52]. Our discussions focus on five key questions, which assist in understanding and analysing the role of institutional pressures in higher education context. They are: (i) Why these pressures were being exerted? (Cause); (ii) Who was exerting them? (Constituents); (iii) What these pressures are? (Content); (iv) By what means they were exerted? (Control); and (v) Where they occurred? (Context). Such an approach was also adopted by [7] to study the organization response to institutional pressures in Italian higher education context.

Why these pressures were being exerted?

- Increase in instances of academic misconduct [43]
- Information accessibility through technological advancement leading to more scientific content available to students and researchers. Misuse of such freely available content has potentially led to increased instances of academic misconduct
- Regulatory changes occurring through tighter regulation by the higher education regulator [43]
- Maintaining the reputation of the higher education sector by explicitly addressing emerging issues regarding academic misconduct
- Reports in media on academic misconduct issues that demands a swift response from the regulator and higher education providers.

Who was exerting them?

- Regulatory agency
- Academic community
- Australian Government Department of Education
- Newspaper and Media
- Universities Australia
- Higher Education conferences and committees actively discussing this as a hot topic.

What these pressures are?

- Regulatory pressures stemming from the regulator (TEQSA)
- Normative pressures stemming from professional association such as Universities Australia and ACS

By what means they were exerted?

- Changes to higher education academic policy by the regulator
- Recommendations emerging from research on academic integrity (research reports)
- Expert panel in conferences that discuss academic integrity issues and propose ways to deal with them
- Ministerial releases on academic matters in response to media stories on academic integrity issues
- Press releases and research report releases from Universities Australia on Academic integrity issues

Where they occurred?

- Australian tertiary education sector

A detailed analysis of the key institutional pressures exerted by various stakeholders in the industry is described below.

Pressure 1: Higher education regulator TEQSA: Institutional context and pressures exerted

- Research symposium on academic integrity organized by TEQSA act as venues for various stakeholders to collaborate and share ideas on academic matters including academic integrity issues. Presentations in such symposiums introduce stakeholders to new and emerging academic integrity issues. The frequent and fateful interactions between various stakeholders in higher education industry events creates additional pressures on education providers to understand external stakeholder expectations and seek legitimacy of their academic practices [43]
- Direct and indirect institutional pressures exerted by TEQSA on Australian universities to streamline ethics curricula that places emphasis on academic integrity in the university curriculum [43]
- Recommendations presented in the research reports published by the regulator exerts pressures on higher education providers to incorporate those recommendations in to their academic policies [43]
- Changes to reporting processes for higher education providers. Regulator 'will consider not only the presence of policies and procedures, but also whether or not they are accessible, appropriate for the scale of the provider's operations, known by staff and

students, implemented, and demonstrated to be effective in practice' [43]. Regulator might seek information on the processes used to manage cases involving academic misconduct, information systems used to record information, fair treatment was ensured and strategies providers introduced to improve its operations [43]

- Compliance with academic integrity standards set by the regulator
- Penalties imposed on universities that violate academic integrity standards and regulations.

Pressure 2: Universities Australia: Institutional context and pressures exerted

- Exertion of normative pressures by promoting best practices on academic integrity to their members to maintain reputation of the higher education industry [19]
- Pressure on higher education providers to adopt practices of the industry leaders on academic integrity
- Regulator TEQSA can exert pressure on Universities Australia to adopt certain academic policies and in turn the Universities Australia can pressure their member to adopt those policies
- Pressure from their members to represent their interests to the regulator and Government department
- Pressure from other stakeholders such as academics, university committees, student advocacy groups, media to represent their individual and collective interests to the regulator and Government department

Pressure 3: Domestic and International Student advocacy groups

- Pressure arising from student advocacy groups to educate students on academic penalties for misconduct

Pressure 4: Australian Government Department of Education

- Threat of tighter regulation from the Government in response to complaints from external stakeholders on academic integrity issues. Providers have to respond to such pressures in order to acquire legitimacy and avoid increased scrutiny by the regulator

Pressure 5: Academics internal and external to universities

- Individual academics who occupy prominent positions in the education industry (for example, academics who are experts on academic integrity and appear frequently in the media can influence other external stakeholders through collaborative relationship they build with them)
- Researchers on academic integrity in Higher Education can influence universities policy through their research findings and publications/presentations in national or International conferences.

Pressure 6: Academic integrity symposium and conferences

- Higher education academic symposiums organized by the regulator TEQSA can act as a venue for stakeholders to collaborate on academic integrity issues. For example, October 2017 second occasional forum series that was organized by TEQSA. The forums series was titled 'Addressing contract cheating to safeguard academic integrity'. Such an event provides opportunity for various stakeholders to collaborate on academic integrity issues that are of common interest. Key stakeholder can also use such events to exert pressures on universities to adopt practices promoted by them [43]
- Conferences on academic integrity can act as a venue for stakeholders to engage in discussions and reach a consensus on acceptable academic policies. For example, Asia Pacific Conference on Educational Integrity (APCEI). The theme of the 8th APCEI conference focused on Academic Integrity as a Public Good; 7th APCEI conference theme: Crossing the borders: new frontiers for academic integrity; 6th APCEI conference theme: From policy to practice: bridging the gap; 5th APCEI conference theme: Academic Integrity: Culture and Values; 4th APCEI theme: Academic integrity: An Inclusive Approach; 3rd APCEI conference theme: Creating a culture of Integrity; 2nd APCEI conference theme: Academic integrity: Values in Teaching, Learning & Research; and 1st APCEI conference theme: Plagiarism and other perplexities. Such conferences dedicated to academic integrity can help raise awareness on key academic integrity issues and place pressure

on the regulator to act on stakeholders who fail to comply with academic integrity standards [2]

- Pressure from Social Networking sites such as Facebook and twitter dedicated to discussions on academic policies in higher education.

7.1 Role of institutional pressures in raising awareness about academic integrity issues

At University level, some of the academic integrity and ethical behaviour initiatives were:

- Dedicated lectures on Academic misconduct in various units
- Study skills workshop that focus on academic integrity issues and student ethics
- Handouts to students on academic integrity policies made available in university library
- Lecturers discussing academic integrity aspects when discussing assessments to students in tutorials/labs
- Dedicated exercises on academic integrity matters such as plagiarism, ethics, information on instances of academic misconduct and penalties in labs and tutorials
- Professional development workshops to staff on academic integrity matters to educate them on current issues and strategies to deal with it.

7.2 Coverage of professional ethics in the MIT Networking courses curriculum

Based on above discussion, Melbourne Institute of Technology (MIT) [60] offers units on professional ethics in Bachelor of Networking (BNet) and Master of Networking (MNet) courses. Professional ethics is covered in BNet and MNet as follows:

BN201 (Professional Issues of IT), BN205 (Project Management) and BN303 (Wireless Networks and Security). This is achieved through unit learning outcomes, and topics in lectures and assessments as described below [60].

i. Unit learning outcomes

BN201: Interpret ethical, professional standards and codes of practice to ICT systems

BN205: Reflect on current project management ethics, research, theory and practice

BN303: Apply wireless network security techniques in consideration of ethical implications

ii. Lecture topics

BN201: One lecture discusses professional ethics in workplace, ethical issues in ICT, ethical dilemmas,

and ACS and IEEE codes of ethics and professional conduct.

BN205: One lecture discusses ethics in project management including Project Management Institute's code of ethics and ethical decision making framework.

BN303: One lecture discusses relations between ethics and laws & regulations, international laws related to information security, and the role of culture.

iii. *Assessment tasks:* One of the assignments is on ethics in BN201, BN205 and BN303. Additionally, students are tested on their knowledge regarding ethics in final examinations for these units.

Apart from the above, privacy and digital security attacks are covered in unit BN105 (IT for Users in Organisations), and ethics related topics on privacy, copyright and censorship with respect to multimedia systems are covered in a lecture in BN107 (Multimedia Systems). Further, several other units (BN203, BN209 and the capstone project units BN301 and BN304) have group work where professional behaviour in a team is practised in interactions with team members, supervisors and, where relevant, with clients.

For Master of Networking (MNet), professional ethics is included in 3 units: MN501 (Network Management in Organisations), MN601 (Project Management) and MN603 (Wireless Networks and Security). This is achieved through unit learning outcomes, topics in lectures, as well as changes to problem-based learning exercises, laboratory work and assessments as described below [60].

i. Unit learning outcomes

MN501: Analyse ethical, professional standards and codes of practice in relation to ICT systems.

MN601: Critically reflect on current project management ethics, research, theory and practice.

MN603: Apply and evaluate wireless network security techniques in consideration of ethical implications

ii. Lecture topics

MN501: One lecture discusses ethics covering topics on the definition and importance of professional ethics, ethical issues in ICT, and the code of ethics and professional conduct.

MN601: One lecture covers ethics in project management including the role of the Project Management Institute, its Code of Ethics and Professional Conduct and the framework for ethical decision-making.

MN603: One lecture is on information privacy, interconnections between ethics and society including differences across cultures, relationship between ethics and information security, and code of ethics for security professionals with reference to the ACS, International Information Systems Security Certification Consortium and other professional organisations.

iii. *Professional ethics in problem-based learning (PBL) tutorials*: Ethics was discussed with number of real world case studies in MN501, MN601, MN603 units.

iv. *Professional ethics in assessments*: Apart from the above, in the capstone project units MN691 (Research Methods and Project Design) and MN692 (Capstone Project), students get to practise professional ethics in their interactions with clients, the supervisor and team members during the completion of their project.

8 Conclusion

In summary, some key institutional and organizational factors that we believe influence academic integrity awareness include: 1) *Individual factors* (individual academic and managerial staff competence in relation to knowledge regarding academic integrity, their experiences in dealing with academic issues and ability to interpret academic policy and procedures), 2) *Organizational factors* (formalization of procedures, communication about practices, perceived value of information, support from senior management, student participation in academic integrity workshop and Library's contribution in raising awareness about academic integrity issues), 3) *Socio-environmental factors* (expectations on academic integrity practices, requirements from higher education regulator and awareness campaigns by universities) and 4) *Technological factors* (reminders about academic integrity policies through technological means such as videos, YouTube videos and student support services) [38]. It is acknowledged that external stakeholder pressure has less importance in situations where there is strong ethical leadership and organizations adopt a 'beyond compliance' approach and strive for excellence. In contrast, external pressures play a significant role in sectors where there is no stringent regulation and organizations are not motivated to adopt practices fully (weak enforcement) and are likely to demonstrate superficial conformance. Our view is that the response to pressures is dependent on who exerts the pressures and under what circumstances

those pressures are exerted. External pressure is a meaningful motivator for organizations to pay attention to stakeholder demands and work collaboratively to uphold the reputation of the industry [15,16].

Overall, it can be argued that pressures play a role in raising awareness about academic integrity issues and promote ethical awareness among students. However, it is acknowledged that pressures can also create negative impact in certain situations [20]. We need to encourage students to embrace ethical values and keep applying pressure to such a degree that it does not frustrate them and backfire as unethical behaviour.

To address the key issues discussed in this paper, MIT [60] includes professional ethics topics in a number of units in their courses from basic to advanced level, where students get an opportunity to understand and exercise ethical judgements in various aspects of ICT work. Future work for MIT will include implementation of e-learning techniques to encourage student familiarity with topics in ethics and for testing students' knowledge on professional ethics. Ongoing professional development for teaching and managerial staff in MIT is crucial to ensure that they are familiar and aware of new or emerging academic integrity issues and know how to effectively foster ethical thinking and behaviour among their students.

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