

Avoiding Plagiarism in Contexts of Development and Change

Nico Beute, *Senior Member, IEEE*, Elizabeth S. van Aswegen, and Christine Winberg

Abstract—This paper reports on an investigation into the incidence of plagiarism in the context of a new university of technology in South Africa. The findings indicate that plagiarism can take many forms, some of which are a result of dishonesty and academic misconduct, while others are related to the educational levels and cultural diversity of the faculty and student body. The paper argues that a “one-size-fits-all” approach to plagiarism is not likely to be effective within a context of development and change, different forms of plagiarism should be clearly identified, and different institutional responses are necessary to address these items.

Index Terms—Academic misconduct, contexts of development, diversity, plagiarism.

I. INTRODUCTION

IN contexts of development within an academic institution, there is a mismatch between the reasons for students plagiarizing and the consequences of such plagiarism. This mismatch arises because the reasons for plagiarism are mainly related to students’ inexperience with regard to conducting research [1] and using and referencing texts [2], while the consequences assume that plagiarism is the result of academic misconduct. The causes of plagiarism in a new university of technology were hypothesized to be as follows.

- The pressure to produce research outputs (in the form of undergraduate research papers, which are a new curriculum requirement for engineering programs that were previously practically oriented) drives students to find the information they need on the Internet and in other electronic resources.
- Text-based information is freely available on the Internet and other electronic media, thus “cut-and-paste” is the main form of plagiarism.
- The multicultural student body’s inexperience with research results in indiscriminate cut-and-paste (unconscious wrongdoing).
- The multicultural student body’s inexperience with research similarly results in inaccurate forms of citing or referencing (unconscious wrongdoing).
- Copying from other students’ work (conscious wrongdoing) is the least common form of plagiarism.
- Faculty members believe that all forms of plagiarism are evidence of academic misconduct and should have punitive consequences.

To test these hypotheses, the authors developed a questionnaire which was circulated to faculty. An analysis of the quantitative and qualitative data confirmed that copying from the work of fellow students was rare, and that cut-and-paste (both credited and not credited) was the most common form of plagiarism. Therefore, the unique contribution that this paper makes is that, in contexts of development which put pressure on inexperienced students to produce research reports, acts of plagiarism will consist of an inappropriate use of source material combined with inaccurate citing conventions. However, faculty assume that these acts of plagiarism are deliberate wrongdoing and will want to impose punitive measures. The previously mentioned hypotheses were confirmed, which indicates that a mismatch exists between why plagiarism occurs and the responses that faculty feels are appropriate.

The pedagogic focus of the research was to identify the specific forms of plagiarism in engineering and related programs and, based on these findings, to recommend policy and pedagogical solutions to address the problem.

II. COURSE CONTEXT

This research was conducted in a new university of technology which offers qualifications in mechanical, chemical, civil, structural and electrical engineering as well as in other engineering-related fields, such as business informatics, information and communications technology, biomedical technology, and more. Many of these programs were previously diploma-level engineering courses, and did not require students to perform research or write research reports. As the institution is in a phase of transition from polytechnic to university, programs which follow more practical curricula in the engineering disciplines are still offered. According to one respondent, plagiarism is “*not such a big problem*” in such courses because of “*the manner in which we work*” (Lecturer 1). In practically-oriented engineering programs, students are required to apply their theoretical understanding to a specific problem. Success in engineering assignments is dependent on students’ understanding developing over time, rather than by finding a “cut-and-paste” solution in an Internet search. Barrett *et al.* point out that in the engineering field, collusion has tended to be more common than Internet plagiarism [3].

As curricular changes are implemented in the engineering fields, and students are expected to produce more extended pieces of research and academic writing, the incidence of plagiarism has increased. Almost half of the lecturers who responded to the survey felt that plagiarism was a significant problem at the university (see Fig. 1). Only 36% of respondents have used software programs to detect plagiarism in students’

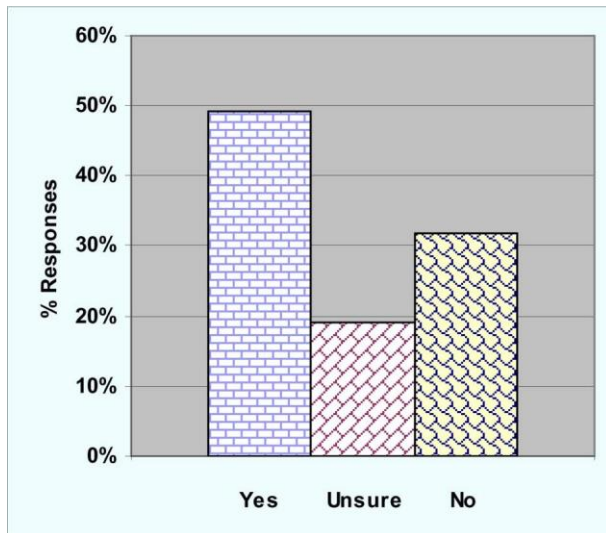


Fig. 1. Results to the question: Is plagiarism a problem?

work. One lecturer commented that s/he did *“not have the software installed as yet but in collaboration with my fellow colleagues and their collective input knows when work has been plagiarized”* (Lecturer 2). Comments such as these indicate that although lecturers might instinctively “know” when something is plagiarized, there are likely to be incidents of plagiarism that go undetected.

III. BACKGROUND AND RELATED WORK

Acts of plagiarism are widespread among undergraduate and postgraduate students across different countries in public and private higher institutions of education [4]. The U.S. National Science Foundation (NSF) and National Institutes of Health (NIH) report that they investigate substantially more allegations involving plagiarism than allegations involving falsified data [5], and even reputable scholars and academics have been charged with the offence [5]. Many recent acts of plagiarism have been attributed to the availability of electronic databases, the ease of searches, and the “impersonalized context” [4] in which Internet-based plagiarism occurs. A growing awareness of copyright infringement has caused several file-sharing services to be shut down, and users have been charged and sentenced for illegal downloading. Technological solutions to the detection of plagiarism have also been developed [6]. As a result there is some evidence of a reduction in academic plagiarism [7]. In an educational context, the difficulty with antiplagiarism software is that it detects plagiarism after it has been committed, and thus relies on the threat of detection and punishment as a deterrent [8].

Technological conveniences that both enable and constrain plagiarism need to be seen within the context of research environments that have become more competitive, placing increasing pressure on faculty and students to acquire research-based qualifications, produce cutting-edge research, and publish their findings.

Both academic and professional engineers work from sources, even when they are solving specific engineering problems. An important requirement of academic work is

the acknowledgment of such sources. For example, using the exact words of a source should be acknowledged with properly inserted quotation marks. In addition, academic writers are expected to be familiar with the conventions of parenthetical references, footnotes, and endnotes in citing sources, to enable others to consult that source. Not only the sources of actual words, but also the sources of ideas should be acknowledged. In engineering disciplines it is not acceptable practice to paraphrase a source by using its phrases or sentences with a few changes in grammar or word choice [3]. Referencing practices differ across academic disciplines: students in history-based disciplines are expected to footnote extensively and demonstrate the lineage of ideas, while engineering disciplines do not require students to document the evolution of an idea to the same extent [3]. Many students are unfamiliar with these conventions, and the variations of these requirements in the specific engineering disciplines.

Exactly what plagiarism entails is unclear to many students [9]. Many students do not come to the university with a clear understanding of plagiarism, and will need to be educated explicitly about how knowledge and intellectual property are viewed in particular engineering disciplines. Students do also not always appreciate the scope of activities that constitutes plagiarism [10]. Lecturers need to be aware that some cultures may not value intellectual property rights [11], or place a low social value on individual work [12]. The tendency of faculty would be to view plagiarism as “wrongdoing” or a moral failure on the part of students, rather than as an educational or enculturation issue. In an age of increasing globalization and internationalization of education, there is a need to recognize that understandings of plagiarism will differ across cultures. Nontraditional or first-generation students are by no means the only ones that are guilty of plagiarism [13]. As novices in their disciplines, all students are likely to experience difficulty in fully understanding terms such as “authorship” or “originality,” or mastering the difficult citation conventions of some of the engineering disciplines. There has been a tendency among Internet-users not to value copyright and property rights, and actions such as downloading pirated DVDs are relatively common within middle-class communities [4].

Issues around plagiarism are not only “academic” concerns. A number of studies have shown a link between academic and workplace dishonesty [14], [15]. Engineering students do much of their work in project teams. Students who do less than their fair share in an academic setting (and are allowed to get away with this) are likely to do the same in their future workplaces [15]. Students who copy work from fellow students, or deliberately plagiarize from other sources, are likely to be unethical in their workplace practices [14].

In South African universities the situation is exacerbated by a number of additional factors, including the restructuring of higher education. The previous “technikon” (or polytechnic sector) has recently been awarded “university of technology” status. This means that faculty and their graduate students are expected to bid for research grants and to publish research papers, while at the undergraduate level there is less emphasis on practical work and a correspondingly greater emphasis on academic assignments and research papers [16]. South African

universities are multicultural institutions in which faculty and students do not always have common understandings of “ownership” or “intellectual property.” Like their global counterparts, South African students have access to the Internet, to electronic databases, open-source software, and to music-share sites—all of which have destabilized notions of originality and ownership.

Students who have been educated in a particular way may have developed different understandings about the value of recitation and regurgitation, or about copying the prose of another. For example, students who have been rewarded in the past for rote learning may believe that copying (“repeating” or “reciting”) the work of others is a desirable practice.

Students find it particularly useful to be shown examples of plagiarism paralleled with the correct forms of citation [4], and for faculty to have a relatively tolerant attitude towards what Howard calls “patchwriting” [12], the process by which a student may merge his/her voice with a textual source to create a “pastiche.” The latter is evidence of “uneven reading comprehension” and unfamiliarity with a particular discourse [12]. Howard claims that the term “plagiarism” is a “scare word” which includes a range of actions, many of which are evidence of inexperience, rather than “fraud” [12]. She suggests clearly defining the difference, for both staff and students, between “fraud,” “patchwriting,” “failure to cite,” and “failure to quote” [12]. There should be clear penalties for the first of these, but an educational response is more appropriate in the latter three cases.

The representation of the ideas, expressions, artifacts, or work of others is thus a complex issue in the South African context. This understanding has pedagogical implications for teaching students to use and critique ideas, rather than to copy them.

IV. METHOD

An institution-wide survey related to the incidence of plagiarism in the institution was developed. A total of 111 academic staff members (most of whom are involved in engineering disciplines) were surveyed through a questionnaire on issues relating to plagiarism at the institution: whether it had been identified as a problem in their department or program, the form of plagiarism detected, and what measures they or their department believed should be taken to address this issue. The questionnaire developed for the survey consisted of two parts. In the first part, respondents were requested to rate the accuracy of a series of statements on a Likert scale of 1–5. Examples of the statements include the following.

- Plagiarism is a serious problem in my program/subject/module.
- The main form of plagiarism that I have encountered is students copying from one another.
- The main form of plagiarism that I have encountered is “cut-and-paste” from electronic sources.
- I have found the [institution’s] policy on plagiarism useful.
- The only way to deal with the plagiarism problem is to set controlled examinations.
- I have used Internet resources to find out whether students’ work is plagiarized.
- All my students know what plagiarism is.
- I have explained to my students what plagiarism is.

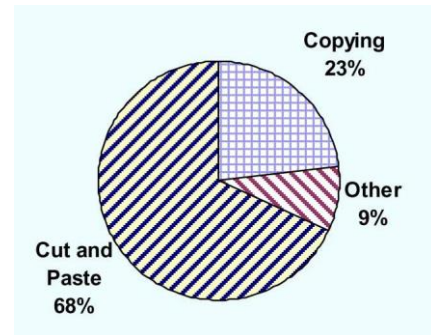


Fig. 2. Forms of plagiarism.

- There should be severe consequences for students who plagiarize.
- Students plagiarize because they have not been educated or informed about plagiarism.
- When students plagiarize they make a deliberate choice to do something that is wrong.
- Students plagiarize because they are too lazy to do the work themselves.

In the second part of the questionnaire, respondents were invited to make qualitative comments on their responses, and to comment on the incidence of plagiarism in their department or in the institution as a whole.

V. RESULTS

Lecturers identified “cut-and-paste” from electronic sources as the main form of plagiarism (see Fig. 2). As one lecturer explained:

“In my experience plagiarism has changed from an exercise in copying from others and books to Internet cut and paste . . . with this form of plagiarism the grey area between copying and reformulating has increased. . .” (Lecturer 3).

Various other forms of plagiarism were identified, such as students’ difficulties with in-text referencing, overreliance on direct quotation, retaining too much of the wording or style of the original in paraphrasing, not using a standard referencing system, not being consistent in citing or referencing practices, not providing full bibliographic details, not accrediting graphic sources, and a general overuse of sources.

Most academic staff members (70%) felt that students were fully aware of their plagiarizing (see Fig. 3). The majority of lecturers (74%) claimed to have explained what plagiarism is to their students. Only 11% of the respondents admitted that they had not explained plagiarism to students, while 15% were unsure about the effectiveness of their explanations. A small group of lecturers (23%) felt that their students did not fully understand what plagiarism involved, as in the following:

“To me the main problem with plagiarism is that . . . students don’t know what plagiarism entails. I found that most of the Master’s [students] enrolling . . . think that one does not plagiarize if you rewrite an author’s statements as your own . . . misunderstanding/ignorance is the culprit and more input is needed from us to enlighten the student” (Lecturer 3).

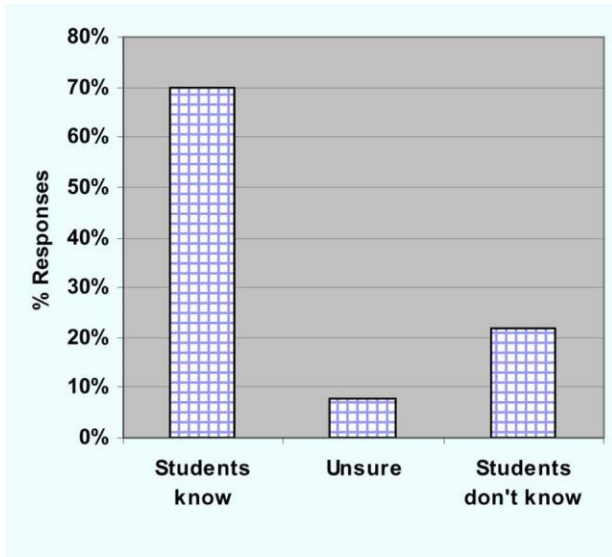


Fig. 3. Faculty's perceptions of students' awareness of plagiarizing.

Approximately half the lecturers surveyed (51%) believed that when students plagiarize, they make a deliberate choice to do something that is wrong. Sixty-five percent of respondents felt that students who plagiarize do so because they are too lazy to do the work themselves. Understandings of plagiarism as wrongdoing, or as a character flaw, led the majority of the respondents (89%) to some fairly drastic recommendations, as evident in the following:

"I do feel very strongly about plagiarism. students must be made to understand that it is a form of theft and punishable with severe consequences. Personally, I think students who plagiarize should be thrown out of the university permanently" (Lecturer 4).

One lecturer commented that

"...being found out stops only some students from doing it again. The main reason is that consequences are not bad enough. If only a few students are expelled without a choice to return ever again to this or any other educational institution, the problem will stop" (Lecturer 5).

Some of the staff canvassed understood plagiarism as a more "complex" issue, which is related to the social, political, cultural and pedagogical traditions which students bring with them to the university. Students are novices learning about Western academic conventions and values. As one respondent put it *"...for those who are under-educated plagiarism (might be) a necessary step in learning to write academically"* (Lecturer 6).

VI. SOLUTIONS

The survey highlighted some of the key tensions with regard to the issue of plagiarism in a context of development and change, in particular the need to distinguish between acts of plagiarism that constitute academic misconduct, and acts of plagiarism that are a result of inexperience in research and academic writing. These issues need to be taken into account in institutional responses to the increasing incidence of plagiarism.

A. Policy Development

In the context of establishing a new university and growing research capacity, the policy on plagiarism needs to achieve a number of different aims. Firstly, it has to take into account the multicultural environment, the different understandings of plagiarism that exist, and the different educational backgrounds and experiences of the staff and student body. In such a context there is likely to be unintentional plagiarism in the form of novice researchers failing to use correct referencing techniques (by, for example, not inserting quotation marks when quoting verbatim, or making use of a design without quoting the source), or being unfamiliar with academic conventions within or across the engineering disciplines, making excessive use of paraphrasing, and so on. However, particularly at the higher levels of study, there is also likely to be intentional plagiarism. Senior students and academic staff could reasonably be expected to understand referencing techniques and academic conventions. If there were clear evidence of substantive un-referenced "cut-and-paste" of text or graphic material from electronic sources, copying from the work of others, or of attempts to represent the words, artifacts, or other work of others as one's own, this would be seen as intentional plagiarism.

The policy developed at the university provides examples of each type of plagiarism and lists the penalties for each level of academic misconduct. The policy contains suggested resources for educating staff and students about plagiarism, recommends that declarations certifying that the work is free of plagiarism be attached to assignments and dissertations, refers staff and students to ways of detecting plagiarism, suggests procedures for those confronted with academic misconduct, and offers guidelines for actions to take in finding a resolution to the matter.

The policy was developed by a small working group, and the first draft was distributed to all staff and students for comment. These comments were addressed in a second draft, and appeared before the University Senate, which approved it, subject to some minor revisions. The policy was then distributed and placed on the institution's website. Despite these measures, only 35% of staff surveyed had consulted the institution's policy on plagiarism, and many did not know that it existed. Like most policies, there is a gap between the approval of the policy and its implementation. There is clearly a need to raise awareness among staff and students about the existence of the policy, as well as a need for educational and infrastructural support for its implementation and acceptance into daily academic practice.

Plagiarism can occur in classrooms, laboratories, and workshops and in written and practical assignments. Therefore, it is important for lecturers, tutorial and technical assistants, and students to be made aware of the policy on plagiarism at the beginning of each year or semester. They should be familiar with the university's definition of plagiarism, understand what types of offence can be considered forms of academic misconduct, as well as the procedures that will be implemented to resolve incidents of misconduct.

B. Training

In the context of a new university, having a policy on plagiarism is clearly not enough. Lecturers, tutorial and technical

assistants, and students need to be educated on how to avoid plagiarism in their work. In addition to a Web-based information literacy course on the university's library website, and bibliographic style guides and a thesis template developed by the Research and Technology Promotion office, the institution also offers workshops on writing for publication for staff and postgraduate students. While these courses cover research writing in general (research proposals, dissertations and theses, journal articles, and conference papers), considerable attention is paid to impeccable bibliographic citation and compilation, to what constitutes a good review of literature, and to the concomitant issue of plagiarism.

VII. CONCLUSION

Before students are taught about plagiarism, it is important that academic staff understand the different forms included under the umbrella term of "plagiarism." It is also important for the engineering faculty to be well-versed in the referencing conventions of their disciplines. Faculty can sometimes be careless about fully referencing sources in their course notes or graphic images on PowerPoint slides. They need to be meticulous in their own practice in order to set a good example to students.

While an institution may have an established policy on plagiarism, there might not be time for busy academics to respond to all cases of detected plagiarism, and some staff members might not have sufficient time to discuss the policy with their students. For a policy to be effective, staff members should be consistent in enforcing it. One respondent pointed out that plagiarism recurs because ".the department/institution does not 'show' its objection to it, plagiarism is viewed as a particular lecturer's hobbyhorse instead of an act which contradicts the academic integrity of the department/institution" (Lecturer 7). Engineering lecturers themselves should set good examples and teach students about plagiarism and correct referencing; they should not delegate this responsibility to a research office or communication lecturer [17].

Students plagiarize for a number of reasons, and these reasons need to be understood before they can be addressed. Plagiarism also needs to be understood within the context of the values that underlie Western science, and the behavioral expectations that those values entail. Therefore, students need to be made aware of the traditions and norms of the engineering disciplines and those of the institution. They need to be trained in referencing techniques that are appropriate to their engineering discipline, and they need to be exposed to examples of good and consistent practice by faculty.

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Nico Beute (M'97–SM'00) received the Master's degree in electrical engineering from the University of Stellenbosch, Stellenbosch, South Africa and the Ph.D. degree in electrical engineering from the Potchefstroom University for Christian Higher Education, Potchefstroom, South Africa, in 1965 and 1993, respectively.

His research interests include the effective use of energy in the domestic, industrial, and commercial sectors and he organizes conferences promoting a sustainable energy future.

Dr. Beute is actively involved in organizing IEEE Teacher In-Service Training Programs in South Africa and Malaysia. He is the chairperson of the IEEE Education Chapter and IEEE Section, both in South Africa.

Elizabeth S. van Aswegen received the B.A. (Bibl.) (cum laude), B.A. (Hon.) (cum laude), M.A. (cum laude), and D.Litt. degrees from Potchefstroom University (now North-West University), Potchefstroom, South Africa.

She has lectured in English language and literature, communication, and library and information science at various institutions. She has authored books, journal articles, and conference papers in these fields. She is currently an Associate Professor in the Research and Technology Promotion Office, Cape Peninsula University of Technology, Cape Town, South Africa, where, in addition to other activities, she writes for publication workshops.

Christine Winberg received the Master's degree in applied linguistics from Rhodes University, Grahamstown, South Africa and the Ph.D. degree in English from the University of Cape Town, Cape Town, South Africa.

She has lectured in English and education at various institutions in South Africa and Sweden. She was awarded a Full Professorship in 2005 and is currently the Head of the Department of Academic Staff Development, Cape Peninsula University of Technology, Cape Town, South Africa. Her research interests include engineering education and communication. She is the leader of the Work-integrated Learning Research Unit and a South African National Research Foundation grant holder.