Turning to Turnitin to Fight Plagiarism among University Students

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ABSTRACT

This paper reports on a pilot project of the Turnitin plagiarism detection software, which was implemented to determine the impact of the software on the level of plagiarism among University of Botswana (UB) students. Students' assignments were first submitted to the software without their knowledge so as to gauge their level of plagiarism. The results recorded the average level of plagiarism among UB students to be 20.5%.The software was then introduced to the students and they were warned that their second assignments would be checked through the software. The results showed a 4.3% decrease in the level of plagiarism among students. A survey was conducted to find out the reasons why students plagiarise and also get the participants' views on the use of the software to fight plagiarism. To win the fight against plagiarism, the paper recommends that the university adopt a more comprehensive approach in dealing with the problems that addresses, among other things, the fundamental reason why students plagiarise.

Keywords

Turnitin, Plagiarism, Assignments, Social Cognitive Theory

Introduction

Plagiarism is a problem that has hit the education world even harder since the inception of the World Wide Web. With information readily available in electronic form from the Internet, it has become easier for students to copy and paste material into their assignments or reports and submit it for grading as their original work. In the past, for students to plagiarize, they had to take time to write down material from books, but with the Internet, they just cut and paste into their work within a short of period of time (Cromwell, 2006; McMurty, 2001). With billions of articles available on the Internet, it has not been easy for instructors to determine where the students could have lifted the material from. Jones (2006) says the Internet has become a cesspool of plagiarism. Many practitioners agree that plagiarism is a growing problem and they believe that the Internet is partly to blame because it makes plagiarism very easy (CQ Researcher, 2003; McKenzie, 1998; Renard, 2000). The University of Pretoria reports that in a study on plagiarism conducted among 150 undergraduates, 80% of the participants admitted that they often plagiarized assignments directly from the Internet (Russouw, 2005). McCabe (2003) says that plagiarism is more prevalent today because many students do not consider copying from the Internet as cheating.

The University of Botswana (UB) is no exception to the problem of plagiarism. This paper presents a pilot project of the Turnitin plagiarism detection software. The university has a unit called the Educational Technology Unit (EduTech) whose main responsibility is to spearhead the integration of technology in teaching and learning (Batane, 2006). In September 2006, this unit was mandated with the responsibility to pilot the project. The main aim was to determine whether the software had any significant impact on the level of plagiarism among students. A one-group pretest-posttest approach was used to determine this impact. The data in the project was collected from various departments on campus.

Theoretical framework

The theory that underpins this study is the social cognitive theory, which explains how people acquire and maintain certain behavioural patterns (Singhal, Cody, Rogers, & Sabido, 2004). The theory posits that people learn in two basic ways: through consequences of actions and social modelling. Reinforcement and punishment has an effect on behaviour and learning.

This study holds the view that in order to effectively fight plagiarism, it is important to understand how students acquired this behaviour and identify factors that encourage them to maintain the behaviour. Self -efficacy is a central element in social cognitive learning and, according to this principle, the beliefs that people have about their

capabilities influence their actions in accomplishing certain goals. Plagiarism does not promote self-confidence among learners because they do not get to identify their ability to perform given tasks. When students plagiarize, they do not get an opportunity to interact with the material and, therefore, are not able to reflect on and internalize their own success and failures.

Social cognitive theory provides intervention strategies that could help in changing undesirable behaviour and direct people to a more positive one. According to the theory, this should be done by altering environmental factors that foster the behaviour and personal factors such as cognitive, affective, and biological events (Bandura, 1997). This study posits that plagiarism is a complex phenomenon that requires a multifaceted approach to fight it. The environment needs to be changed so that it becomes more difficult for students to plagiarize. Consequences that do not reward plagiarism need to be reinforced so that those observing are discouraged from emulating the behaviour.

Literature

Student plagiarism occurs in different forms, including incorrect citation and totally stealing someone else's ideas and work. Plagiarism also occurs from different sources. These include journals, books, the Internet, newspapers, and other students. However, Internet plagiarism has become more and more popular. In 2003, Donald McCabe conducted a comprehensive study among 23 institutions across the United States to investigate Internet plagiarism. The results revealed that Internet plagiarism among students was increasing. Thirty-eight percent of participants said they had plagiarized from the Internet (Rimer, 2003). This was an increase from the 10% in a similar study conducted two years previously.

There are many reasons why it is important for institutions to fight plagiarism among students. Plagiarism affects not only individual students but also the integrity of the institution as a whole and the quality of its products. Therefore, it is important that each university crack down on this problem for its own sake and for the sake of the students. Also, apart from imparting academic knowledge to students, universities and colleges have a responsibility to impart moral and ethical values to students. Plagiarism is morally wrong; therefore, students should be discouraged from engaging in it. Lawrence Hinman, director of Values Institute at the University of San Diego, believes that if plagiarism is not fully addressed, it will have catastrophic effects on the society. He says: "trust is fundamental to the social, political and economic fabric of any successful society" (Hansen, n.d.). Alschuler and Blimling (1995) say that if plagiarism is not eliminated, then the problem is not with the individual students who commit the offence, but with institutions that support it. McCabe (1999) says that students should play a role in addressing this issue. It is crucial for all colleges to emphasize the importance of this issue to students and address it (Wilson, 1999). Academic integrity should be a responsibility of all the stakeholders in education (Stovall, 1988; Cole & Conklin, 1996).

Turnitin to fight plagiarism

Turnitin is a web-based software that is used for plagiarism detection and is meant to aid students and instructors in their joint effort to promote originality in student papers. Turnitin acts as a powerful deterrent to stop student plagiarism. Students submit an electronic form of their work through the software, which checks submissions for textual match with material in its database and creates an Originality Report. Students can view their own submissions and originality reports but not the reports of others.

Turnitin reports from various institutions

In recent years, Turnitin has gained popularity as more and more institutions use it to combat plagiarism. Since its inception in 1997, the software has been tried and tested by various institutions around the world. Success stories have been reported on the effects of Turnitin on the incidence of students' plagiarism and the promotion of honest academic writing. Below are some of the reports from universities that have used Turnitin.

The University of Colorado, realizing that academic integrity was deteriorating on campus, decided to revise their approach to fight the problem. They decided to establish a campus-wide Student Honour Code Council, which was

responsible for writing the honour code and handling cases of honour-code violations. The honour code was then enforced through Turnitin, which acted as a detection mechanism. Jeff Luftig, faculty advisor to Student Honour Code Council said, “It’s naïve to think you can make the problem go away by just having an honour code” (Luftig, 2006, p. 2). Users at the University of Colorado reported that the use of Turnitin, in conjunction with the honour code, had a dramatic and immediate effect on academic integrity. Luftig said that sometimes students plagiarize because they do not know how to properly cite sources; therefore, it is important to teach them and promote a culture of academic honesty.

In the UK, it was realized that in order to win the war against plagiarism, institutions needed to adopt a more holistic and coordinated approach to the problem. In 2001, a national initiative for addressing plagiarism was established by the Joint Information Systems Committee (JISC), which offered advice on how to implement Turnitin for higher education in the UK (Carroll, 2005). In 2002, CAVAL Collaborative Solutions, a university library consortium in Australia, submitted student papers from five higher education institutions to Turnitin. A total of 1,770 papers from various disciplines were scanned. The results indicated that 8.8% of the papers had more than 25% Internet-plagiarized work. The same study found that only two papers out of the 1,770 had more than 75% plagiarized material (Carroll, 2005).

Limitations of Turnitin

Even though there are positive reports on the use of Turnitin in identifying plagiarism, the software also has its limitations. These include the tendency of the software to identify material as plagiarized, even if it is not (Noynaert, 1997). The software does not have the discretion to scrutinize reports to ensure accuracy. Savage (2004) points out that there are incidents of coincidental research where students may innocently use similar words or resources used previously in other research, especially in commonly researched areas. Therefore, it is important for staff to carefully scrutinize students’ work to make better judgment as to whether the material has been plagiarized or not. Turnitin is also limited in that it is not capable of checking everything on the net, for example, images and some computer programs. Mulcahy and Goodacre (2004) also highlight that the Turnitin database does not contain all the material that is on the web and the software cannot identify paraphrased text. Savage (2004), reports on the findings from a trial of Turnitin plagiarism detection software at the University of Sydney in Australia. From this study, some of the misgivings provided by students included ethical issues concerning students’ privacy rights because their papers were made public by submission to Turnitin. Students also contested that by submitting everybody’s work to the software, it is automatically assumed that everybody is guilty until proven innocent and this contrasts with the universal principle of justice which assumes one is innocent until proven guilty. It was for this reason that the dean for the University of Yale, Peter Salovey, did not agree with the use of programs such as Turnitin because they create an environment of mistrust. Speaking to the *Daily News*, he said, “If one creates a culture expecting the worst of students and underscores this attitude with a climate of vigilance, then students will act in ways to confirm these expectations by inventing clever ways of acting dishonorably and avoiding detection. This is not a race to the bottom that I want to encourage” (Mihailova, 2006).

Background of the project

The University of Botswana has a total of six faculties on campus. Each faculty is equipped with computer labs that are used mainly for practice and teaching purposes. Computer labs designated as practice labs are accessible for students’ use anytime within working hours, whereas those marked as teaching labs are strictly used for teaching purposes.

All the computers in the faculty labs are connected to the Internet, and only students belonging to a particular faculty can access those computers. The university library is the main place where students access computers. The library has a total of 186 computers accessible to all students. There are no computers in the students’ dormitories and many students do not have computers at their homes. Therefore, the number of computers available for access by students on campus is not enough for the total population of students on campus.

Plagiarism at UB

Plagiarism has always been a problem at UB, and anecdotal evidence suggests that, with the increase use of computers and the Internet, student academic dishonesty has been on the rise. There are various measures that the university has put in place to fight and prevent student plagiarism. First there is the Student Academic Honesty Policy, which clearly states that plagiarism from any source is not acceptable. This policy is made available to every student entering the university so that students will know what is expected of them of them in terms of proper academic writing.

Secondly, the university has developed general education courses that every undergraduate student must take. Among these courses are GEC 211–Advanced Writing Skills and GEC 330–Introduction to Research Methods. GEC 211 trains students on proper academic writing, including the proper citing and referencing of material. GEC 330 is a generic course that introduces students to basic research skills, such as how to do a literature review, writing problem statements, and developing a research proposal. In addition, lecturers are encouraged to continue teaching students proper academic writing in their respective classes and to enforce it in their assignments.

However, despite all these measures, plagiarism continues to be a big problem at the university. Lecturers find themselves grappling with increasing cases of serious academic dishonesty. Therefore, it has been crucial for the university to re-address this issue and find new ways of fighting it. In 2005, a committee was set up to investigate plagiarism and come up with suggestions on how to curb the problem. In January 2006, the University Senate approved a plan of action to address student academic dishonesty, and one of the key issues in the plan was to enhance staff's ability and willingness to prevent and handle student academic dishonesty. The teaching and learning unit, together with the educational technology unit of the Centre for Academic Development, were mandated to promote innovative practices for staff in teaching, learning, continuous assessment, and examination process through implementing the use of Internet plagiarism-detecting software. The university management agreed to explore the Turnitin plagiarism prevention tool as one of the measures to fight plagiarism.

Aims of the pilot

The aims of this pilot were to:

1. Use Turnitin to measure the level of student Internet plagiarism at UB.
2. Determine the impact of the software's use on the level of plagiarism.
3. Identify the reasons why students plagiarize.
4. Identify problems encountered when working with the software and provide recommendations for its future use.

Methodologies

This project used the one group pretest-posttest comparison approach, which allows for an evaluation of an intervention by determining differences in the results between two points in time, before and after the intervention. At the beginning of this project, the students' level of plagiarism was measured, without their knowledge, using Turnitin. The software was then introduced to the students, and their level of plagiarism was again tested after they were made aware that their work would be checked by the software. At the end of the project, an evaluation exercise was carried out to find out what the participants thought about the use of the software. Questionnaires were administered to both students and lecturers participating in the project to get their views on plagiarism and the use of Turnitin in addressing this problem. The questionnaire consisted of seven quantitative questions and four qualitative ones. One hundred twenty students and seven lecturers completed the questionnaire. Quantitative questionnaires were analysed using SPSS 14.0, while categorization, synthesis, and search for patterns and interpretations were the major techniques employed in analysing qualitative data.

Sampling frame

Convenience sampling was used to select participants for this project. The goal was to have all six university faculties represented in the study. First, two lecturers were identified from each faculty. These were mainly people

who had previously used WebCT to distribute and collect students' assignments; therefore, they already had experience with online submission of assignments. An email was sent out to the lecturers asking them if they were interested in participating in the pilot project. Then the lecturers selected the classes they wanted to use for the pilot. Classes selected were mainly those which required essay writing for their assignments. A total of 272 students and 12 lecturers participated in the project.

Findings

Students' plagiarism level before Turnitin

For the first set of assignments, electronic versions of the manuscripts were collected by the lecturers and processed through Turnitin without the students' knowledge. This was done to gauge the then-current level of student plagiarism at UB. The following example is used to demonstrate how the average plagiarism percentage of students was calculated. If a class has three students and their Originality Reports indicate that student 1: 10%, student 2: 15% and student 3: 5%, then their average plagiarism would be calculated as follows:

10/100 +15/100 + 5/100 = 30/300 which makes 10%. In this study, first, the individual plagiarism percentages from the Originality Report for each student were recorded. These individual percentages were then added up for each class to give a sum of plagiarism percentages in each class, as shown in the second column of Table 1. The number of submissions in each class was then multiplied by 100 because each Originality Report is a percentage, giving figures as shown in column 3. Figures in column 2 were then divided by those in column 4 and multiplied by 100 to obtain average percentages for each class. See column. In the same way, class averages were added up and averaged to calculate the overall plagiarism percentage for all students participating in the project.

Table 1. Plagiarism percentage for first assignment

Classes	Total sum of students' plagiarism percentages per class	Total number of student papers submitted per class	Number of student papers submitted per class multiplied by 100	Average plagiarism percentage per class
Class 1	839	31	3100	27.1
Class 2	22	6	600	3.7
Class 3	27	3	300	21.0
Class 4	29	5	500	5.8
Class 5	1462	35	3500	41.8
Class 6	679	13	1300	52.2
Class 7	467	16	1600	29.2
Class 8	231	16	1600	14.4
Class 9	101	11	1100	9.2
Class 10	2	2	200	1.0
Totals	3859	138	13800	20.5

The results indicated that the average plagiarism percentage for all the submitted papers as measured in the first assignments was 20.5%.

After class plagiarism averages were calculated, individual student papers were analysed and classified into four categories: high-scale plagiarism, medium-scale plagiarism, small-scale plagiarism, and legitimate research. The categories were defined according to the percentage of plagiarized material in the papers as indicated in the students' Originality Report. For example, if a student's Originality Report read 65%, then that paper would be classified as medium-scale plagiarism, see Table 2 below.

Table 2. Plagiarism categories

Category	% of plagiarized material
High-scale plagiarism	70–100
Medium-scale plagiarism	35–69
Low-scale plagiarism	1–34
Legitimate research	0

Table 3 shows the percentage of the number of students' papers that belonged to each of the above-defined categories. For example, in Class 1, 38.5% of the student papers were identified as high-scale plagiarism, which means that each one of them contained plagiarized material ranging between 70–100%. After categorizing all of the papers in all of the classes, overall averages were calculated for each category to find out which category most of the students papers fall into.

Table 3. Classes and plagiarism categories for Assignment 1

Classes	High-scale plagiarism %	Medium-scale plagiarism %	Low-scale plagiarism %	Legitimate research %
Class 1	38.5	38.5	23.0	0.0
Class 2	0.0	0.0	60.0	40.0
Class 3	0.0	0.0	81.8	18.2
Class 4	33.3	24.2	24.3	18.2
Class 5	0.0	0.0	66.7	33.3
Class 6	0.0	0.0	100.0	0.0
Class 7	3.2	19.4	74.2	3.2
Class 8	12.5	18.8	50.0	18.8
Class 9	0.0	6.3	81.2	12.5
Class 10	0.0	0.0	100.0	0.0
Total	87.5	107.2	661.2	144.2
Average	8.8	10.7	66.1	14.4

The lecturers graded the assignments and returned them to the students. It was at this point that the students were informed that their papers had been processed through plagiarism detection software. The students' reaction to this was mixed. Some were shocked that such a mechanism existed; some felt tricked that they were checked on without knowing; but most were happy with the software because they believed it would push them to work harder and write papers properly. Problematic areas were shown to the students, and the lecturers used this opportunity to talk to students more about how to properly write academic papers, including proper citation and referencing and acceptable academic writing. Students were then trained on how to use the software and submit their assignments.

Level of plagiarism after the introduction of Turnitin

For the second assignment, students were aware that their papers were going to be checked through Turnitin and were asked to submit their papers directly to the software. The overall plagiarism rate for this round was 16.2%, which was lower than the plagiarism level of the first assignment. The difference between the plagiarism rates for these two assignments provided a measure of the effectiveness of Turnitin use and specific academic advice to students in reducing plagiarism. The first assignment had an overall plagiarism rate of 20.5% and the second assignment had an overall plagiarism rate of 16.2%. This gives an overall deterrent effect of 4.3%. For the second assignment, it was also noted that cases of high-scale plagiarism and medium-scale plagiarism were greatly reduced, while cases of legitimate research were increased, as indicated by Table 4.

Table 4. Classes and plagiarism categories for Assignment 2

Classes	High-scale plagiarism	Medium-scale plagiarism	Low-scale plagiarism	Legitimate research
Class 1	16.7	25.4	48.9	9.0
Class 2	0.0	0.0	25.3	74.7
Class 3	0.0	0.0	50.2	49.8
Class 4	10.9	14.7	44.4	30.0
Class 5	0.0	0.0	15.5	84.5
Class 6	0.0	0.0	25.0	75.0
Class 7	0.0	2.4	30.9	66.7
Class 8	3.1	2.0	39.7	55.5
Class 9	0.0	6.3	81.2	12.5
Class 10	0.0	0.0	36.7	63.3
Total	30.7	50.8	397.8	521.0
Average	3.1	5.1	39.8	52.1

Why students plagiarize

Responding to the question of why they plagiarize, 75% of the participating students reported that they cheat mainly because of laziness, and 80% of the lecturers concurred. It is interesting to note that the majority of students did not think their cheating was because of lack of moral responsibility. Only 6.7% of the students indicated that they cheated because of lack of skills in proper academic writing. As one student said "honestly we are taught, it is not that we do not know how write papers the right way, we just choose not to for other reasons." Students said the reason they still cheated even when they had proper skills was because it requires a lot of effort and time to write a paper honestly and with material readily available on the Internet, it is highly tempting to take the easy way out and copy and paste material to submit as one's original work. One student said "we have many other assignments that we have to do, so getting material from the Internet saves you a lot of time to do other things." Students also reported that plagiarism cases in the university were not taken very seriously as they often see most of their colleagues get away with this kind of cheating. This tempts them to also engage in the behaviour. As one student asked, "why should you sweat to write a paper properly while someone just copies and gets a higher mark than you?" On the other hand, when questioned about their response to plagiarism incidents, a majority of lecturers reported that often when they suspect or identify plagiarism cases in their classes, they rarely take the issue beyond just talking to the students concerned. One lecturer stated that "the only kind of cheating that is taken seriously in this school is exam cheating, but as for the misconduct that happens during the course of the semester with assignments and projects, no serious measures are taken to penalize students for that."

Students in this study also reported that the other thing that encourages plagiarism is the tendency of lecturers to give the same essays and tests every year so it is very easy to get a previous student's assignment and copy from it.

Views on the use of Turnitin to fight plagiarism

When questioned about their views concerning the use of Turnitin in fighting plagiarism, 65% of the students welcomed the software because they believed it would encourage them and their colleagues to put more effort into their studies and do their assignments properly. They stated that if students knew their work would be checked for plagiarism, it would reduce their chances of copying. However, 35% of the students indicated that they did not like the software at all as it would make them fail. One student said: "we are not here only to pursue our degrees, but also to have a decent living. If this is used, it will hinder us from graduating on time." All the lecturers who participated in the survey welcomed the use of the software in fighting plagiarism because they believed it will assist them to quickly identify plagiarism cases. However, the lecturers also pointed out that they did not think that the software alone would help to eliminate plagiarism among students; rather it is the responsibility of all the stakeholders to ensure that they develop a comprehensive approach to prevent and fight student plagiarism. One lecturer in the study said "what this software does is just confirm to us that, yes, there is plagiarism and point to us where it is in the students' papers, but as for how we prevent it and stop it, it is entirely up to us, the software just provides evidence."

Discussions and recommendations

Results from the project indicate that the initial average plagiarism percentage among UB students before the introduction of Turnitin was 20.5%. This percentage is slightly higher than what has been reported in most studies, which indicate an underlying plagiarism rate of college students between 17% and 20% (Weinstein & Dobkin, 2002). This indicates that plagiarism at UB is indeed an issue of concern that needs to be seriously addressed.

The study revealed that after Turnitin was introduced to the students, their plagiarism level dropped by 4.3%. It is worth noting that plagiarism did not completely disappear even after students knew that their papers would be checked through the software, rather the software had a significant impact in reducing the rate of high-scale plagiarism in which students lifted large portions of their work directly from the Internet. Low-scale plagiarism also decreased, and incidents of legitimate research increased, but there was still plagiarism going on. When asked why they still plagiarized even when they knew their papers will be checked through the software, 75% of the students reported that they reduced the amount of material plagiarised from the web and just copied small portions into their papers sparingly because they believed that they could still get away with that kind of cheating since it was at a lower scale. According to the Social Cognitive Theory, this shows that even though the students' learning environment was

altered by using the software, it was not enough to deter students from plagiarism, a clear indication that software alone cannot eliminate this problem. There is need to have other measures in place that would make plagiarizing undesirable. In his article "Calling it what it is," David Summergrad says that students who are caught cheating should be told that they are liars. He says students continue with this behaviour because they do not think it is a big deal, therefore it is important to make them realize that it is a big deal. He says "connecting cheating with lying unmasks the 'sleight of mind' that allows students to think of cheating as a justifiable way to act" (Summergrad 1999, p. 45).

In order to sufficiently address the issue of plagiarism, it is important to establish the underlying reasons why students plagiarize in the first place. The Social Cognitive Theory calls for an explanation of how people get to acquire certain behaviour. One of the most cited reasons as to why students plagiarize is lack of skill and knowledge. It is worth noting that in this study, a majority of students reported that the main reason why students cheat is because of laziness. Only 6.7% cited lack of skill as the reason for cheating, which leads to the conclusion that the university is doing its part in teaching students how to write properly. Lathrop and Foss (2000) say some students plagiarize simply because they lack ethical responsibility to respect other people's work. If students know how to write properly, but still choose to plagiarize, then it is a clear indication that plagiarism itself is not the main problem, but is a symptom of a bigger problem — in this case the students' lack of responsibility towards their learning. Therefore, the focus should not only be in identifying and punishing plagiarism, rather, there should be a more concerted effort to addressing the issue of students' attitudes towards their learning. The institution can put all the necessary measures in place to spot plagiarism; however, if students do not see the need to work hard and earn their degrees honestly, it will be difficult to win the battle against plagiarism. The use of the software could help to scare off students from plagiarizing, but it would not necessarily instill a sense of responsibility towards their education. That is why some educators say that even though the use of commercial plagiarism detection software such as Turnitin is a welcome development in terms of assisting to quickly spot plagiarism, it can become a quick fix to the underlying problem of why students plagiarize in the first place.

Students in this study reported that it is tempting to plagiarize because lecturers give the same assignments year after year, which means instructors have a great role to play in terms of student plagiarism. Standler (2000) says new topics should be used every semester so that students do not use their colleagues' work. The nature of assignments given to students is also important. Instructors need to design assignments that are less prone to plagiarism by giving work that requires learners to apply knowledge they have acquired to a particular situation instead of just stating it. Leland (2002) says instructors should give assignments that are interesting to students and that will reduce their chances of cheating. It is important to minimize opportunities for cheating among students (Davis, 1993).

The dichotomy in this study is that all the participating lecturers welcomed the use of Turnitin because they say it was helpful in quickly identifying plagiarism. However, students on the other hand complain that plagiarism cases at the university are not taken seriously, and this contributes to students' tendency to engage in the behaviour. This indicates that plagiarism is a behaviour that has been partly acquired through observing and emulating peers and older colleagues who successfully advance in their academic endeavours without suffering any negative consequences from plagiarism. According to the Social Cognitive Theory, students maintain this kind of behaviour because the environment also fosters it. This poses a challenge for the institution to firmly address plagiarism cases. Often instructors are reluctant to pursue issues of plagiarism because they do not trust that they will be fully supported by the school administration. In his 1999 study, McCabe reported that when he questioned faculty about why they ignored the problem of plagiarism among their students, a majority of them stated that it was because they feared that the school administration would not back them and they may end up in legal troubles on their own (Weiss, 2000). In this study, lecturers also affirmed that they do not pursue plagiarism cases with their students, hence the continuation of the problem.

To address the issue of students' plagiarism, it is recommended that the university find a way to seriously educate students on the goal of education and the importance of earning their degrees honestly. This could be done through career fairs that invite people from government, parastatals, and the private sector to speak to students about the dangers of not going through the proper education channels in obtaining their degrees and the consequences this will have on them once they enter the world of work. Students should be warned that if they do not put more effort into their academic work and equip themselves with the right skills, they may find themselves struggling to find and keep employment because the market world has become very competitive.

Concerning the use of Turnitin in fighting plagiarism, participants recommended its continued use to identify plagiarism. The software should be used as a supplementary measure to ensure that students stay on course and do not get tempted to cheat. Standler (2000) says that it is important to make available to professors tools for detecting plagiarism. Leland (2002) states that the way we approach the issue of plagiarism with our students is very crucial. He says that if the issue is presented as a rule such as "Do not plagiarize" then students will relegate it to the many other rules that are in school. Therefore, Leland suggests that plagiarism should be presented as an issue for use of intellectual property.

Limitations and problems with the project

Assignments

Contrary to the initial plan, none of the participating classes submitted a third assignment to Turnitin, which limited comparison of plagiarism rates to only two sets of results. More assignments would have assisted to observe whether the plagiarism level continues to drop over time. Also, plagiarism rates were compared between different sets of assignments within classes; therefore, there could have been other factors that influenced the results, such as the nature of the assignments and characteristics of individual students.

Slow Internet

The biggest problem with the project was that, due to slow Internet connections in the university, the software took a very long time to process commands and launch various interfaces. The software has to check through the entire web and various databases for textual matches, a process that generally takes a long time on its own. This was very frustrating and discouraging to the lecturers as they had to spend more time working with the software.

Workload issues

Lecturers participating in the project were very busy; therefore, they needed constant follow-up and reminders to attend to Turnitin issues. Also the software did not automatically exclude properly quoted material when it gave the Originality Report. The lecturer had to open individual students' papers and exclude quoted material and bibliographies, which was time consuming. The two-hour training workshop was not enough; therefore, one-to-one training sessions were further required which was resource-intensive.

Ethical issues

The nature of this project implied that students' papers were initially submitted to commercial software without their consent and this raises ethical issues concerning students' privacy. However, this was regarded as the best way to find out how much students plagiarized before introducing a deterrent factor to the situation.

Conclusion

This paper reports on a pilot project in which Turnitin was used to detect plagiarism among students' papers. The pilot was very limited in scope; however, the results gave insight into the level of plagiarism among UB students and the effects that plagiarism detection software had on this level. The pilot indicated that plagiarism within UB was slightly higher than the average for other institutions, as reported in the literature. The use of the software did not completely eliminate plagiarism, which indicates that plagiarism is a complex problem that cannot simply be solved by introducing a detection mechanism. It is evident from this study that in order to effectively fight plagiarism, it is important to go back to the drawing board and re-address the value of education to students and work to change their attitudes towards learning. It is important for students to understand that when they plagiarize, they not only violate the rights of the authors they are copying from, but they are also cheating themselves out of an opportunity to improve their knowledge and skill in their respective fields.

This study argues that learning-environment factors that foster plagiarism need to be changed to make it more difficult to plagiarize. This requires institutions to make an introspection to find out what is it that they are doing on that encourages plagiarism. Recommended actions include giving assignments that are less prone to plagiarism and are interesting to students. It can also be argued that punishment of plagiarism can play a significant role in discouraging the behaviour because those engaged in it will not be eager to continue, while those observing will not be encouraged to emulate it. In conclusion, plagiarism detection software should be one of the resources in a holistic and comprehensive approach to promoting academic honesty among students.

The results of this pilot were used to assist the institution in making a decision as to whether using Turnitin was a worthwhile system to adopt in fighting plagiarism and what issues to address in the continual effort to eliminate this problem. It was decided to continue using Turnitin to spot plagiarism; however, the university is currently mapping out a strategy that take into consideration various issues, including those raised in this study, to strive to eliminating plagiarism.

Disclaimer

This article does not in any way intend to promote the commercial interest of Turnitin over any detection software, but simply presents the experiences of an institution in using the tool to fight plagiarism among students.

References

Alschuler, A. S. & Blimling, G. S. (1995). Curbing epidemic cheating through systemic change. *College Teaching, 43*(4), 123–126.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: Freeman.

Batane, T. (2006, March). Curriculum development: Technology supported learning. Lonaka Bulletin of the Centre for Academic Development, Quality Assurance in Higher Education, 47–54.

Carroll, J. (2005). Deterring, detecting and dealing with student plagiarism. [JISC briefing paper]. Retrieved October 17, 2006, from the JISC website: http://www.jisc.ac.uk/index.cfm?name=pub_plagiarism

CAVAL Collaborative Solutions (2002, September). Victorian Vice-Chancellors' Electronic Plagiarism Detection Pilot Project: PDP project report. Australia: CAVAL.

Cole, S. and D. Conklin (1996). Academic integrity policies and procedures: Opportunities to teach students about moral leadership and personal ethics. *The College Student Affairs Journal, 15*(2), 30–39.

CQ Researcher, (2003). Combating plagiarism: Is the Internet causing more students to copy? *Congressional Quarterly INC, 13*(32), 773–796.

Cromwell, S. (2006). What can we do to curb student cheating? Retrieved January 19, 2007, from the Education World website: http://www.educationworld.com/a_admin/admin/admin375.shtml/

Davis, B. G. (1993). *Tools for teaching*. San Francisco: Jossey-Bass.

Hansen, B. (n.d.) Combating plagiarism. Retrieved May 10, 2006, from the San Mateo County Community College District website: http://www.smccd.net/accounts/finkm/cqresrre2003091900.htm

Jones, D. (2006). Authorship gets lost on the web: Some bloggers don't give credit where it's due. *USA Today*. Retrieved August 19, 2006, from http://www.usatoday.com/printedition/money/20060801/net_plagiarism. art.htm

Lathrop, K. A. & Foss, K. (2000). Student cheating and plagiarism in the internet era: A wake-up call. Englewood, CO: Libraries Unlimited.

Leland, B. (2002). Plagiarism and the Web. Retrieved May 10, 2007, from http://www.wiu.edu/users/mfbhl/wiu/ plagiarism.htm

Luftig, J. (2006). Strengthening honour codes through plagiarism detection software. Retrieved September 10, 2006, from http://www.turnitin.com/static/pdf/success_stories_colorado.pdf

McCabe, D. (2003). Academic dishonesty survey study. Unpublished study, Rutgers University.

McCabe, D. (1999). Academic Dishonesty among high school students. Retrieved June 17, 2007, from http://findarticles.com/p/articles/mi_m2248/is_136_34/ai_59810226/pg_4

McKenzie, J. (1998). The new plagiarism: Seven antidotes to prevent highway robbery in electronic age. *From Now On, 7*(8).

McMurtry, K. (2001). e-Cheating: Combating a 21st century challenge. Retrieved March 11, 2007, from http://www.thejournal.com/articles/15675

Mihailova, T. (2006, November 9). Plagiarism detection program questioned. *Yale Daily News*. Retrieved, March 11, 2008, from http://www.yaledailynews.com/articles/view/18872

Mulcahy, S., & Goodacre, C. (2004). Opening Pandora's box of academic integrity: Using plagiarism detection software. *Proceedings from ASCILITE Conference 2004*, Perth, WA.

Noynaert, J. E. (1997). Plagiarism detection software. Retrieved July 17, 2008, from http://www.micsymposium.org/mics_2005/papers/paper97.pdf

Renard, L. (2000). Cut and paste 101: Plagiarism and the net. *Educational Leadership, 57*(4), 38–42.

Rimer, S. (2003, September 3). A Campus fad that's being copied: Internet plagiarism. *The New York Times*. Retrieved January 10, 2007, from http://www.swarthmore.edu/NatSci/cpurrin1/plagiarism/docs/ Plagiarism_on_campus_NYT_.pdf

Russouw, R. (2005, February 26). Net closes on university cheats. *Saturday Star*. Retrieved October 9, 2006, from http://www.iol.co.za/index.php?set_id=1&click_id=13&art_id=vn20050226112531241C573402

Savage, S. (2004). Staff and students' response to a trial of Turnitin Plagiarism Detection Software. *Proceedings of the Australian Universities Quality Forum*, Sydney, Australia. Retrieved March 13, 2008, from http://www.indiana.edu/~tltc/technologies/savage.pdf

Singhal, A., Cody, M., Rogers, E., & Sabido, M. (2004). Entertainment-education and social change: History research and practice. New Jersey: Lawrence Erlbaum Associate Publishers.

Standler, R. (2000). Plagiarism in colleges in USA. Retrieved June 5, 2007, from http://www.rbs2.com/plag.htm

Stovall, J. L. (1988). Academic integrity: A joint responsibility of administrators, faculty and students. *Carolina View, 4,* 36–38.

Summergrad, D. (1999). Calling it what it is. *Education Week*, 45–46.

Weinstein, J. & Dobkin, C. (2002). Plagiarism in US higher education: Estimating Internet plagiarism rates and testing a means deterrence. Retrieved September 15, 2007, from http//webdisk.berkeley.edu/~Weinstein/ Weinstein-JobMarketPaper.PDF

Weiss, K. (2000, February 15). Focus on ethics can curb cheating. *L. A. Times.* Retrieved July 10, 2007, from http://lamission.org/ethics/collegecheat.htm

Wilson, R. (1999, October 15). Colleges urged to better define academic integrity and to stress its importance. *Chronicle of Higher Education, A 18*.

Appendix A

Part of students' survey

1. In your opinion, why do students plagiarize?

Laziness ☐ Lack of skill in citing and referencing material ☐ Lack of moral responsibility ☐

Do not think can be caught ☐ Other ☐ specify_____

2. Do you believe the university provides you with enough skills to write properly without plagiarizing?
   Yes ☐ No ☐

3b. If yes, why continue to plagiarize?

_____

3c. If no, what could be done to improve the situation?

_____

4. Do you support the use of Turnitin to fight plagiarism among students?
   Yes ☐ No ☐

4b. Explain why.

_____

5. Did you continue to plagiarize even after knowing that your paper will be checked through Turnitin?
   Yes ☐ No ☐

5b. Explain why.

_____

6. What role do you think lecturers play in encouraging plagiarism?

_____

7. What are your views on the university's response to plagiarism cases?

_____