

# **Plagiarism and its effects on the quality, credibility and integrity of student research at GZU.**

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## **Abstract**

Plagiarism, an academic offense and its detection and prevention is crucial for academic integrity. The main purpose of the study was to explore the existence of academic dishonesty as it impacts on the ability to write assignments and research projects by Great Zimbabwe University students from Gary Magadzire School of Agriculture. Submitted assignments and honours projects were retrieved and subjected to Turnitin and Urkund plagiarism check software's. A total of thirty-nine (30 assignments and 9 projects) were uploaded to each software. Descriptive statistics were used to categorise responses from students. A chi – square test was used to test the association between plagiarism and demographic parameters, while a t – test was used to check the level of plagiarism between tools and tasks. A binary logistic regression was performed to check the relationship between plagiarism and, gender, age and mode of learning. Plagiarism was significantly influenced ( $P < 0.05$ ) by gender, method of enrolment and task attempted. The similarity indices were higher than the recommended at 50.32 and 48.97% for Turnitin and Urkund respectively. The correlation for plagiarism between the two software's was high (0.80%). It can be concluded that students plagiarized and might not be aware of the consequences of such behaviour. There is need for training on plagiarism in order to at least enlighten both students and staff that plagiarism is an academic offense and efforts to stamp out the behaviour are critical.

Keywords: academic decadence, institutions of higher learning, psychopathic behaviour snooping

## **Introduction**

Academic dishonesty among college and university students has become a serious problem all over the world (Akakandelwa et al., 2013; Bachore, 2016; Baran & Jonason, 2020; Naghdipour & Emeagwali, 2013; Witherspoon et al., 2010), particularly among undergraduate students. The advances in information and communication technologies has further complicated the problem in the past two decades (Bachore, 2016). Unfortunately, this dilemma has become a stumbling block in genuine research activity (Baran & Jonason, 2020), crippling and weakening talent and the potential future leaders, no wonder the dominance of moral/ academic decadence in institutions of higher learning. As coined by Baran & Jonason, (2020), psychopathic behaviour is the major reason for academic dishonesty, because it includes a tendency to be impulsive, to engage in sensation-seeking, and resistance to stress, all of which are associated with academic dishonesty. Academic dishonesty consists of any deliberate attempts to falsify, fabricate and tamper with data, or any relevant material by the students' during their course of learning (Bachore, 2016; Marshall, L., & Varnon, 2017). All these activities are done with the intention to gain unfair academic advantage (Thomas & De Bruin, 2014). Unfortunately, these various types of academic dishonesty show the complexity of the issue as they vary from; unauthorized access to computers or privileged information, cheating and facilitating cheating, plagiarism, data falsification, improper use of internet sites and resources, and improper use of non-print media (Akakandelwa et al., 2013).

Anecdotal and reported evidence indicate that academic dishonesty is endemic in most universities, however the extent of the problem is yet to be established. Consequently, students are unaware of the implications of such a behaviour or they presume they can get away with it (Sariasih & Tisnawijaya, 2019). As poised by Bachore, (2016) student assessment should be regarded as a complex, multidimensional activity that requires alignment, balance and rigor in order to assure quality outcomes. Rigor is only achievable when academic cheating is minimized. Due to the nature and complexity of this problem, it is difficult to evaluate all the forms of academic dishonest, however the objective of this study was determine if plagiarism is evident among great Zimbabwe University (GZU) students. In this study, it was hypothesised that students are aware of plagiarism, and therefore uphold and conduct themselves accordingly. The research question was to test the level of plagiarism by Agricultural students at GZU, irrespective of the course or program of enrolment.

## **Methodology**

### **Study site**

The study was carried out at GZU, where assignments and projects submitted by students from Gary Magadzire School of Agriculture were considered.

### **Subjects and Sampling Techniques**

Submitted assignments and honours projects from the School; Department of Livestock Wildlife & Fisheries were retrieved and subjected to Turnitin and Urkund plagiarism check software's. A total thirty-nine; 30 assignments and 9 projects (soft copy) were uploaded to each software. Lecturers willing to participate were requested to submit all the assignments and projects for analysis. Both assignments and projects were grouped according to student gender (male/ female), age (< 25 / >25) and nature of enrolment (conventional / block).

### **Methods of data Analysis**

Descriptive statistics was used to categories responses from the students. A chi – square test was used to test the association between plagiarism and demographic parameters, while a t – test was used to check the level of plagiarism between tools and tasks. A binary logistic regression was performed to check the relationship between plagiarism, gender, age and mode of learning using the following model:

$$\ln [p/1-p] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k + \varepsilon$$

p = probability of students ranked cheating/ plagiarized

$\beta_0$  = intercept

$\beta_1 \dots \beta_k$  = regression coefficients of ranked factors on  $\ln [p/1-p]$  (plagiarized; non-plagiarized)

$[p/1-p]$  odds ratio referred to the odds of ranked plagiarized first for each estimator [ $\beta_1 \dots \beta_k$ ]

Plagiarism was considered positive where similarity index exceeded 15% for both projects and assignments.

## **Results**

The level of plagiarism was evaluated and the results are presented in Table 1.

Table 1. LS means of plagiarism among Agricultural students at GZU.

	Gender		Age		Task		Enrolment method	
	F	M	<25	>25	Assignments	Projects	Conventional	Block
Turnitin	41.3±4.58	53.6±4.28	47.1±4.64	52.8±4.98	54.3±4.21	37.9±4.59	47.1±4.64	52.8±4.98
Urkund	30.4±3.89	55.8±5.67	44.3±6.21	52.6±6.40	59.6±3.28	15.8±2.67	44.3±6.21	52.6±6.64

An interaction between plagiarism software gender and task was observed ( $P < 0.05$ ). Male students showed higher ( $P < 0.05$ ) plagiarism values when Urkund was used, at the same time assignments were more plagiarised when Urkund was used compared to Turnitin ( $P < 0.05$ ). In general, Turnitin showed higher ( $P < 0.05$ ) plagiarism values compared to Urkund. It is interesting to note that males, and block students above 25 years of age showed higher ( $P < 0.05$ ) plagiarism values. Plagiarism is profound ( $P < 0.05$ ) when students undertake assignments and a considerable degree of caution was exercised with regards to projects. Overall plagiarism levels are above the general prescribed limit. The association between demographic parameters and the extent of plagiarism was evaluated and the results are presented in Table 2.

The rate at which students plagiarise is dependent upon gender and the type of task. Male students plagiarise more than female students, while plagiarism is rampant with assignments than it is with projects ( $P < 0.05$ ). The logistic regression was used to evaluate indicators for each method and the results are presented in Tables 3 and 4.

Table 2 The relationship between plagiarism and demographic parameters for GZU Agricultural students

		Gender of student		Age		Enrolment method		Task	
		F	M	<25	>25	Conventional	Block	Assignment	Project
Plagiarism rate									
Turnitin	No plagiarism	3 (37.5)	5(62.5)	3(37.5)	5(62.5)	3(37.5)	5(62.5)	6 (75.0)	2(25.0)
	Plagiarised	8(24.2)	25 (75.8)	15(45.5)	18(54.5)	15 (45.5)	18(54.5)	25(75.8)	8 (24.2)
Urkund	No plagiarism	6 (40.0)	9 (60.0)	7(46.7)	8 (53.3)	7(46.7)	8(53.3)	5(33.3)	10(66.7)
	Plagiarised	5 (19.2)	21(80.8)	11 (42.3)	15 (57.7)	11(42.3)	15 (57.7)	26(100.0)	0 (0.0)

Table 3 Turnitin logistic regression of Agricultural students at GZU.

Variables in the Equation		B	S.E./	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1a	Gender(1)	-.738	.891	.687	1	.407	.478	.083	2.739
	method(1)	-.417	.828	.254	1	.615	.659	.130	3.339
	Task(1)	-.160	.970	.027	1	.869	.852	.127	5.703
	Constant	2.008	1.089	3.398	1	.065	7.449		
Step 2a	Gender(1)	-.694	.850	.667	1	.414	.499	.094	2.642
	method(1)	-.422	.827	.261	1	.610	.655	.130	3.316
	Constant	1.877	.739	6.460	1	.011	6.534		
Step 3a	Gender(1)	-.629	.836	.566	1	.452	.533	.104	2.744
	Constant	1.609	.490	10.793	1	.001	5.000		
Step 4a	Constant	1.417	.394	12.930	1	.000	4.125		

a. Variable(s) entered on step 1: Gender, method, Task.



None of the predictors were significant, however the odds ratio are higher for task and method of learning. The propensity to plagiarise increase by 0.85 and 0.66 with an increase in one unit of task and method respectively. Using turnitin gender was the main predictor influencing the decision to plagiarise or not.

Table 4 Urkund logistic regressions results for Agricultural students at GZU

Variables in the Equation		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1a	Gender(1)	-.059	1.228	.002	1	.962	.943	.085	10.466
	method(1)	-.099	.999	.010	1	.921	.906	.128	6.414
	Task(1)	22.843	12707.725	.000	1	.999	8332941042.471	.000	.
	Constant	-21.125	12707.725	.000	1	.999	.000		
Step 2a	method(1)	-.095	.995	.009	1	.924	.909	.129	6.396
	Task(1)	22.861	12708.139	.000	1	.999	8478585110.230	.000	.
	Constant	-21.156	12708.139	.000	1	.999	.000		
Step 3a	Task(1)	22.852	12710.140	.000	1	.999	8400471952.122	.000	.
	Constant	-21.203	12710.140	.000	1	.999	.000		

a. Variable(s) entered on step 1: Gender, method, Task.

Again none of the predictors were significant however the ranking by Urkund is different from Turnitin, in this case task was the main cause for plagiarism. Using both Turnitin and Urkund, the Wald statistic was weak and values are closer to zero hence this parameter cannot be used to infer plagiarism for this study.

The correlation between the plagiarism tools was also evaluated and results are presented in Table 5.

Table 5 Correlation between plagiarism detection tools for GZU Agricultural Students.

Correlations		Turnitin Percentage	Urkund percentage	Mean	SD
Turnitin Percentage	Pearson Correlation	1	0.796**	50.32	22.055
	Sig. (2-tailed)		0.000		
	N	41	41		
Urkund percentage	Pearson Correlation	0.796**	1	48.97	29.490
	Sig. (2-tailed)	0.000			
	N	41	41		

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the methods in determining plagiarism was significant, the ability between the tools used was positive, indicating consistency and trustworthy of the tools.

### Discussion

The levels of plagiarism from the current study are worrisome. The reasons for such a behaviour is not fully understood, however from the results, it is clear that students lack adequate information and training on academic dishonesty. Similar conclusion have been made by Amin et al., (2021), in which they reported that students mostly misunderstand plagiarism and for that, it is necessary to consider it an issue requiring urgent attention. In agreement, Nematı (2016) showed that low level of English and insufficient training regarding plagiarism is students` reason for plagiarizing. This is also in line with previous reports that student from non-native English speaking nations tend to plagiarise more (Shi 2004). In addition, plagiarism is viewed differently depending on continent and cultural values (Shi 2004; Stapleton 2012; Foltýnek et al., 2020). Ahmadi (2014), in another study explored students` reasons for plagiarizing and the results are not compelling, since the study revealed that students did not show any negative feelings and attitude about plagiarizing. A similar study is necessary to further investigate student attitudes when they are found to be cheating. On the contrary Amin et al., (2021); Nematı (2016) and El et al. (2011) have concluded that, students plagiarise because they are not taught about the dangers of

plagiarism. Earlier reports by Hard, Conway, and Moran (2006) posit that there is little theoretical or empirical literature that relates to this student academic misconduct, and while it could be true the current results point to gender as the major contributing factor to dishonesty. The fact that students would cheat on assignments more than projects is indicative of the fact that they are aware of plagiarism and its possible effects on their academic conduct. However, Gideon and De bruin (2012) noted that there is limited research on factors that influence faculty actions to address student dishonesty. In this regard, it is the duty of academic staff to instil this discipline in students and reports from other studies (Saidin and Isa 2013) have shown that staff can actually promote plagiarism.

The effect of gender on plagiarism in the current study was not expected, however Koul et al. (2009), also observed significant differences between perceptions of female and male students regarding plagiarism. The current study espoused an unfamiliar behaviour by students where there are marked differences of plagiarism between tasks. It is clear that students intentionally plagiarise when attempting assignments, but deliberately reduced the level of plagiarism when it comes to projects. Inferring from this behaviour it is clear that students in the current study are familiar and probably know the consequences of plagiarism. In agreement Stapleton (2012) revealed that the class which was unaware of Turnitin had significantly higher rates of matching text, near copies and intentional plagiarism than the class which was aware of Turnitin. To this end it is better and a must that all academic fields use plagiarism detection soft-wares to stop or to eliminate students cheating, copying and modifying documents when they know that they will be found (El et al. 2011). The debate on why students plagiarise is ongoing, however, El et al. (2011) reported that 100% of the students plagiarise because it is easy to plagiarize, 78% do not have a good command of English; 63% usually do not have enough time to meet the deadlines; 78% do not know much about the severity of plagiarism and its consequences and 73% feel the original text is well-written and difficult to be changed. Although there is a consensus in academia that plagiarism is an academic offense, there is not any positive attitude in motivating researchers to follow plagiarism hence it remains prohibited. Unfortunately, Saidin and Isa (2013) presumed that it is highly likely that teachers who had cheated in examinations, demonstrate a similar lack of integrity in their task of imparting knowledge on this scourge haunting academic integrity.

The differences between plagiarism tools similarity indices was expected. Previous reports (Warn 2006; Jones and Moore 2010; Zeman, Steen, & Zeman, 2011; Kale, 2019) have shown

wide variations among these tools ranging from zero to 100% differences. The sources of these discrepancies emanate from a plethora of software inefficiencies or weakness, for example Jones and Moore (2010) pointed out that Turnitin in some ways replace the letter “I” with number “1”, which are the same in *Times New Roman* font, thus the font type can lead to discrepancies. Moreover, Warn, (2006) and Amin, (2017) have reported that turnitin cannot distinguish whether matching words are within quotation marks or not. These are some of the reasons to explain the higher similarity indices when Turnitin was used. Irrespective of these limitations Turnitin has been the widely used plagiarism detection software throughout the world (Turnitin, 2017). In addition, Turnitin which can be used for online grading, provide more significant feedbacks, enhance the learning process, and save time (Turnitin, 2017). In another report the use of Turnitin significantly impacted student writing (Zeman, Steen, & Zeman, 2011) and its regular use have produced approximately 45% reduction of unoriginal content in students’ writing (Stapleton, 2012). The positive correlation between software’s in the current study further cements the negativity possibly associated with their effectiveness in exposing plagiarism.

## **Conclusion**

Students showed academic dishonesty as exhibited by very high levels of plagiarism. This affected the quality, credibility and integrity of their research and learning in general. The levels of plagiarism range from zero to 100%. Plagiarism was high for assignments than is for projects. Plagiarism was influenced by gender of student, enrolment method and type of task. In this study it was identified that anti-plagiarism software; Turnitin and Urkund are effective in determining possibility of plagiarism. There was evidence of both textural and prototype plagiarism in the current study, although it could highly be a consequence of patchwriting. Based on the results, it is recommended that a university wide study be conducted to stimulate interest for both students and staff on the effects of plagiarism. Similar studies would then be appropriate at all universities in order to promote institutional and national integrity.

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