

**SET UP FOR FAILURE? THE IMPACT OF ASSIGNMENT COMPLEXITY ON  
PLAGIARISM BY SOUTH AFRICAN POSTGRADUATE STUDENTS**

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**ABSTRACT**

Students are more likely to resort to plagiarism in assignments that are complex, especially when certain factors out of their control are present. This article reports on a study that investigated how postgraduate students' reliance on different types of plagiarism is different between a less complex essay (Bloom's Level 4) and a more complex essay (Bloom's Level 6). The essays of 128 students at a comprehensive university in South Africa were coded for six types plagiarism, which were identified in literature. The first pertinent finding was that students furnished fewer citations in a more complex essay. Secondly, copying substantial

portions of text with limited alteration (a type of plagiarism) remained prevalent between the two essays. Faculty need to ensure that students are adequately prepared in terms of paraphrasing and academic writing to be able to complete more complex essays.

## 1 INTRODUCTION

Plagiarism is on the increase (Eret & Gokmenoglu, 2010), and is exacerbated by the Internet allowing easy access the work of others (Walker, 2010). Various theories have been utilised to understand why students plagiarise, for example (i) utility theory, which posits that “individuals evaluate each choice on the basis of the value (utility) of each possible outcome of that choice [...], the choice is whether to plagiarize or not” (Heckler, Rice & Bryan, 2013:231); (ii) expectancy valence theory, which argues that “expectations and valences together determine a person’s motivation to undertake a particular behavior” (Honig & Bedi, 2012:108), and (iii) “[E]fficiency gain ... to get a better grade and to save time” (Park, 2003:479).

Addressing student plagiarism using a pedagogical approach has been on the agenda of educations. Various once-off interventions, such as developing writing skills using Turnitin™ similarity reports (Mckay, 2014; Rolfe, 2011; Walker, 2010) have been reported. The use of a rubric to address plagiarism has also been examined (Razi, 2015). Another approach was to examine how students plagiarise. Two lines of research have focused on especially non-native English-speaking students’ writing pertaining to copying from source texts. One area of interest focusses on students’ reliance on specific types of plagiarism (for example, Vieyra, Strickland and Timmerman. (2013) and Walker (2010)). A second considered the practices, beliefs, and decisions of students, particularly non-native English-speaking students, when copying text (for example, Pecorari and Petrić (2014) and Shi (2012)). The issue of time constraints surfaced in these studies. Insights from the latter approach highlighted difficulty and complexity as reasons why students resort to plagiarism.

It is argued that the ‘why’ and ‘how’ of student plagiarism cannot be separated from each other, and that previously used theories fall short in explaining student plagiarism in relation to the complexity of the work. The results of this study provide a deeper understanding of student plagiarism, which could yield insights into the design of effective assessment strategies to ensure students gain the intended skills and knowledge from the learning experience, whilst address the issue of plagiarism.

## 2 LITERATURE REVIEW

Three factors impact the relationship between level of complexity and plagiarism, namely task context, time constraints, and individual factors, which are addressed first in the literature review. This is followed by a discussion of the characteristics of the essays — the results of the above factors — and the types of plagiarism in which students engage.

### 2.1 Task context

The context of a task consists of two factors. Firstly, the difficulty of a task is the “condition of being hard to accomplish” (OED Online, 2017). Francis (2014:¶3) states that difficulty “is based upon amount of effort needed to answer a question, solve a problem, or complete a task”. The second factor is complexity, “the kind of thinking, action, and knowledge needed in order to answer a question, solve a problem, or complete a task and how many different ways [there are] to do this” (Francis, 2014:¶4). The relationship between these two concepts and plagiarism is discussed below.

#### 2.1.1 Difficulty

While it has been argued that the difficulty of a task is related to plagiarism, the term ‘difficulty’ has been treated as synonymous with ‘complexity’. Nevertheless, an association between difficulty and plagiarism is observable, and inclusive of different environments, namely the task itself, the course, as well as the qualification. It has been reported that students’ decisions to engage in plagiarism will increase relative to the difficulty of the assignment (Tayan, 2016; Eret & Ok, 2014; Eret & Gokmenoglu, 2010; Jian, Sandnes, Huang, Cai & Law, 2008; Szabo & Underwood, 2004). Krishnan and Kathpalia (2002) draw attention to the difficulty novice writers experience in composing their literature reviews. In contrast to the consideration of difficulty, Szabo and Underwood (2004) present evidence that tedious assignments encourage plagiarism.

The notion of difficulty was also extended to two immediate environments, namely the course as well as the qualification. Yazici, Yazici, and Erdem (2011) found that the difficulty of the material or course has a substantial effect on the incidence of plagiarism. This finding was supported by Kelly, Gutmann, Schneiderman, DeWald, McCann and Campbell (2008) as well as Eret and Gokmenoglu (2010). Jian *et al.* (2008) argue that students may rely less on plagiarism when they perceive that they are able to meet the demands of the course. Jian *et al.* (2008), in a study of undergraduate and postgraduate

students from Hong Kong, China, Norway, and Taiwan, found no differences related to geographic location or level of study in the patchwriting (inadequate paraphrasing) strategies that non-native English speakers employ to deal with difficult courses. It has been reported that a lack of interest in the topic or course leads to students plagiarising (Eret & Gokmenoglu, 2010).

Garnica (2010) considered difficulty and complexity separately, and found a positive association between poor understanding (due to complexity) of the course material and Turnitin™ similarity scores, and a positive association between the experienced level of difficulty of course materials and similarity scores.

### **2.1.2 Complexity**

Complexity, notably associated with paraphrasing, is cognitively demanding in order to move beyond conveying information to producing new knowledge. Students may be particularly prone to resorting to patchwriting if the complexity of the material increases, as paraphrasing is cognitively demanding ( Marsh, Landau & Hicks, 1997). Students are required to synthesise material (Chandrasoma, Thompson & Pennycook, 2004), and inferential thinking (either deductive or analogical) is required (Yamada, 2003). Jones and Freeman (2003) argue that the demands posed by useful and necessary activities are different when paraphrasing using a source text, compared to creating a new understanding that requires higher-order thinking. Kuhlthau (2004) notes that students conveying information rather than knowledge and understanding is evident in patchwriting strategies. Garnica (2010) found a positive association between student plagiarism and cognitive overload (e.g., evaluating too many sources). Non-native English speakers have been found to resort to various plagiarism strategies (Pecorari, 2008), particularly when writing a literature review for a research project (Jian *et al.*, 2008). Petrić (2012) proposes that the linguistic and/or conceptual complexity of source texts may influence students' decision whether to quote verbatim or to paraphrase.

However, the level of education also contributes to inadequate paraphrasing, as analytical skills required to deal with complexity as students advance through qualifications. Goh (2013) noted that patchwork plagiarism was more evident among first-year students, compared to those in their third year. Goh (2013) attributes this finding to students developing higher cognitive skills over time; third-year students have stronger analytical skills and are better able to express and support their thoughts. Hong and Cheng (2013) also found fewer instances of plagiarism among final-year undergraduate management

students, compared to second-year students. Petrić (2012) proposes that the linguistic and/or conceptual complexity of source texts may influence students' decision whether to quote verbatim.

It is important to consider a task's complexity relative to the level to which students' analytical skills have developed. A lack of complexity in an assignment also encourages plagiarism. Students resort to plagiarism when the assignment topic does not require original thinking or synthesis (McCord, 2008), and, as argued by Kuhlthau (2004), when students have not accessed their thinking skills beyond the level of application (based on Bloom's Taxonomy (Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich & Wittrock, 2001)). Faculty may contribute to this problem; Davis (1994) maintains that poorly defined and descriptive assignments are more likely to encourage cheating than more analytical assignments.

## **2.2 Time constraints**

The amount of effort required to complete a task has bearing on students' decisions to engage in plagiarism. Too much effort being required may not only limit the time available to deal with complex tasks, but also hinder students' mental engagement in paraphrasing tasks, resulting in them conveying information as opposed to furnishing information. Difficult tasks require more attention, exacerbating time constraints (Garnica, 2010). Szabo and Underwood (2004) and Eret and Gokmenoglu (2010) argue that students may engage in plagiarism when they are failing to cope with the added time pressure inherent in difficult assignments. In light of the multiple deadlines students face across a curriculum, Pecorari (2008) argues that the importance students accord their tasks may have a bearing on their decision to resort to plagiarism. Pecorari (2008) found that non-native English-speaking postgraduate students attempted to avoid plagiarism, but that this became a lesser priority in light of the time demands placed on them when conducting research. Petrić (2012) reported that additional time was taken by students to understand complex material, and, with less time remaining, they resort to major quotes and paraphrasing only a few additional lines. Pecorari (2008) presented similar findings, Pecorari (2008:102) claiming that, "If the intention of these [postgraduate student] writers had been to copy from the sources to save time and energy, it seems less likely that they would then have taken the trouble to make alterations ...". Starr (2002) posits that spending too much time on finding sources may cause students to plagiarise, because of the volume of source texts they are then required to evaluate (Beasley, 2004).

## 2.3 Individual factors

Previous writing experience, or rather lack thereof — largely the product of the educational systems — plays a role plagiarism. Shi's (2006) qualitative investigation found that English- and German-speaking students receive training in citation practices during their secondary schooling, while Asian students do not. Goh (2013) found that, as undergraduate students progress through university, patchwork plagiarism decreases, and argued that students developed higher cognitive abilities that make paraphrasing easier. A similar finding was reported by Hong and Cheng (2013). Szabo and Underwood (2004) and Eret and Gokmenoglu (2010) also postulate that a lack of academic writing skills is a contributing factor to plagiarism, especially in the case of novice writers (Tayan, 2016) and postgraduate students writing up their literature review chapter (Krishnan & Kathpalia, 2002). Pecorari (2008) reported that students at British and American universities do more writing than those in non-English-speaking countries. This is also the case in South Africa; for example, Ellery (2008) maintains that students in South Africa are not equipped during their secondary schooling to do academic writing and avoid plagiarism.

Regarding writing experience, students do not always understand attribution of source texts. Elander, Pittam, Lusher, Fox, and Payne (2010) argue that students do not have a clear understanding of the difference between paraphrasing and plagiarism, especially when faced with complex and unfamiliar texts. Non-native English-speaking students' citation practices may be different to those of native English-speaking students, due to the latter's exposure to and practice in writing using other texts (Pecorari, 2008).

A lack of precursors of writing skills, namely reading- and linguistic skills, may lead students to plagiarise, especially students who are non-native English speaking having to use the lingua franca in an academic context. Underdeveloped reading skills may prompt students to resort to patchwriting strategies, as the focus is on sentence level (words and phrases), rather than on the overall meaning of the text (Barks & Watts, 2001). Students lacking the required linguistic ability may resort to plagiarism (Fazel & Kowkabi, 2013), evident in the academic writing of non-native English-speaking students (Pecorari, 2008). In support, Tayan (2016) found that undergraduate students in management have difficulty completing assignments, due to a lack of language skills. Non-native English-speaking students are also more prone to plagiarising (Eret & Gokmenoglu, 2010), particularly when the source text is linguistically complex (Fazel & Kowkabi, 2013) or the ideas are complex (Petrić, 2012). Students with poor English proficiency focus mainly on verbatim copying (

Cumming, Rebuffot & Ledwell, 1989). In this regard, Amsberry (2009) noted that non-native English-speaking students employ the above copying strategies in an attempt to avoid blatant plagiarism. Pecorari (2008) and Tomaš (2011) found that non-native English-speaking students view paraphrasing as a process of making changes to copied text, as opposed to reformulating the text. This is further exacerbated by time constraints, resulting in students only changing a few words. Pecorari (2008) points out that these students regard such strategies as a means to get acquainted with academic writing in English.

The ineffective use of available time has also been linked to plagiarism. Academics have indicated that inadequate preparation by students, despite having sufficient time, also leads to cheating behaviours (Yazici, Yazici & Erdem, 2011). Schouwenburg and Groenewoud (2001) found that, for procrastinating students, the time frame in which to complete the assignment becomes unfavourable. Yet, Starr (2002) maintains that laziness is not a main contributing factor in plagiarism, as plagiarism involves only a small number of students. This finding is supported by Rinnert and Kobayashi (2005).

## **2.4 Characteristics of assignments**

Studies have yielded mixed results regarding the link between the length of an assignment and incidences of plagiarism. Orthaber's (2009) study found a medium positive correlation between word count of reports (with a mean of 441 words) and plagiarism (using Viper Plagiarism Checker). Bilić-Zulle, Frković, Turk, Ažman and Petrovečki (2005) concluded that the length of the assignment (with a mean of 507 words) was not related to plagiarism; they found a very low positive correlation between total word count and Turnitin™ similarity scores. In contrast, Segal, Gelfand, Hurwitz, Berkowitz, Ashley, Nadel and Katz (2010) reported a weak inverse correlation among native English-speaking postgraduate students.

However, an essay marked by complexity and difficulty may influence the association between the length of an essay and plagiarism. The difficulty students encounter when sourcing appropriate source material that is linguistically complex (Fazel & Kowkabi, 2013) or the ideas are complex (Petrić, 2012), including the complexity associated with interpreting and evaluating (too many) texts Garnica (2010), may result in less time to compose the essay. Thus, a reduction in the number of references may be expected in light of the time constraints. Fewer references being available to the student may result in a shorter essay. Therefore, the length of an academic essay may not necessarily increase

as difficulty and complexity increase. The length of an essay marked by complexity, may evidence stronger and positive associations between word count and plagiarism.

The interaction between difficulty and complexity of a task may have an impact on the duration to complete a task. Hence, students will submit assignments marked by difficulty and complexity closer to the deadline. Cognitive demands of paraphrasing (Marsh *et al.*, 1997), especially due to complex source material and tasks that require effort (e.g., the writing process (Pecorari, 2008) and sourcing and evaluating appropriate texts for the assignment (Beasley, 2004)), result in additional time required to complete the task Petrić (2012), in particular for non-native English-speaking students. Lacking required skills (such as academic literacy) may exacerbate the time constraints.

## 2.5 Types of plagiarism

Neville (2010) identified three main types of plagiarism. The first is copying another author's writing verbatim, without quotation marks, or, as Jones and Freeman (2003:174) labelled it, "word-for-word reproductions". Here, two distinctions are evident. The first is a lack of conventional signals, i.e. quotation marks and citation(s) (Vieyra *et al.*, 2013; Colquitt, 2012; Tomaš, 2011; Walker, 2010; Pecorari, 2008) and page numbers (Colquitt, 2012), where the copied text is presented as the student's original work (Walker, 2010). The second, called "sham paraphrasing" (Walker, 2010:46), contains selected conventional signals, i.e. no quotation marks are used, but citation(s) are included (Tomaš, 2011; Walker, 2010; Park, 2003).

The second type of plagiarism identified by Neville (2010) is referred to as "patchwriting" (Howard, 1995:788), "pastiche" (Edlund, n.d., ¶10), or "close copying" (Wager, 2014:41). Howard (1995:788) defines patchwriting as "copying from a source text and then deleting some words, altering grammatical structures, or plugging in one-for-one synonym-substitutes". Copied material is improperly paraphrased, resulting in "...mimic[ed] passages from prior work" (Colquitt, 2012:749), whereby students slightly change copied material (Wager, 2014) or superficially modify it (Shi, 2012). Two sub-types are noticeable. The first involves copying substantial portions of text with limited alteration (substituting selected words) or "without new contributions" (Honig & Bedi, 2012:106), which entails deleting (Howard, 1999) one to four words from the original text (Walker, 2008) and inserting a limited number of words (Walker, 2008; Jones & Freeman, 2003), and/or substituting words with synonyms (Vieyra *et al.*, 2013; Tomaš, 2011; Davis & Carroll, 2009; Walker, 2008; Howard, 1999). The second is word reversal (Walker, 2008). In contrast to



substituting words, this strategy entails syntax rearrangement (Tomaš, 2011; Shi, 2004; Jones & Freeman, 2003; Nitterhouse, 2003; Howard, 1999). Vieyra, Strickland, and Timmerman (2013) also included the practice of changing the tenses of verbs.

Neville's (2010) third type of plagiarism is the practice of blending copied material with original material. This is also called "plagiphrasing" (Krishnan & Kathpalia, 2002:193) and "structure-based changes" (Barrón-Cedeño, Vila, Martí & Rosso, 2013:920). Jones and Freeman (2003), based on the writing of Bereiter and Scardamalia (1987:179,170), considered the above practices "knowledge telling", which is in contrast to "knowledge transforming", which "implies reflection, problem solving, and planning; it involves associative thinking while critically analysing the information available, in the light of clear goals, in order to create new understandings".

The lack of attribution of material, in addition to inadequate paraphrasing, is also associated with plagiarism. At one end of the continuum, similar to Neville's (2010) criterion that plagiarism excludes citations, is 'major,' outright, intentional or unintentional plagiarism, which is a lack of referencing, acknowledgment, or appropriate quotation marks (Price & Price, 2005), whether copied material is verbatim without quotation marks or improperly paraphrased (Wager, 2014; Walker, 2010; Warn, 2006; Price & Price, 2005; Walker, 1998). At the other end of the continuum, 'minor' plagiarism, sometimes unintentional, is characterised by missing quotation marks, although the source is cited (Price & Price, 2005).

### **3 PROBLEM INVESTIGATED**

In addition to upholding and protecting academic integrity and scholarship (Jabulani, 2014; Choo & Paull, 2013), universities are responsible for preparing students for the workplace, to create future leaders and innovative thinkers. In reality, at the core of leadership in organisations is the ability to deal with complexity in order to take appropriate short- and long-term decisions requiring innovative thought in highly competitive contexts. Failing to address plagiarism in light of complex tasks may have dire financial and reputational consequences for organisations, limit the employability of students in leadership positions, and limit the conversion of information into knowledge. The latter is evident in non-native English-speaking students who, when faced with complexity in conjunction with time constraints, face a decision to paraphrase (thus not merely conveying information) or not (Heckler *et al.*, 2013). In this regard, Pecorari and Petrić (2014) propose that a deeper understanding of non-native English speakers' writing strategies is required.

## 4 RESEARCH OBJECTIVES

Following the problem statement, the aim of this study was to compare students' reliance on inadequate paraphrasing strategies in two essays of different levels of complexity (the 'how') as well as selected 'why' factors evident in the characteristics of the two essays. This was achieved through two objectives, namely to:

- identify the differences in the writing strategies observable in the types of plagiarism between a more complex essay, compared to a less complex one; and to
- examine the differences between the two essays in terms of the characteristics of the essays resulting from the writing strategies, between the two essays.

Therefore, the contribution of this study is the extension of current knowledge on the notion of complexity by considering the 'how' and 'why' of student plagiarism in two essays of different levels of complexity, by considering not only the types of plagiarism students resort to, but also the impact of time constraints evident in the characteristics of the essays and the length of time before the deadline the work was submitted.

## 5 RESEARCH METHOD

### 5.1 Sample

The essays of three cohorts of postgraduate students (registered between 2012 and 2014,  $N = 154$ ) at a comprehensive university's Faculty of Management, were considered. Thirteen repeating students and those who did not submit both essays in the same year of registration ( $n = 13$ ) were excluded from the study. The final sample ( $n = 128$ ) consisted of predominantly women (75.8%) and non-native English-speaking students (73.4%). Two forms of previous education were represented, with vocational education slightly less than half (45.83%). The mean age was 26 years ( $SD = 6.64$ ). The possibility of sub-samples was explored. Based on significant differences between the types of plagiarism revealed by a Friedman test ( $\chi^2(11, n = 128) = 93.968; p < .001$ ), preliminary comparisons between various groups were conducted. Mann-Whitney  $U$ -tests revealed four instances where students from the 2014 cohort, those who received plagiarism training, committed less plagiarism, specifically *Alteration major* and *Blend (minor and major)* in Essay 1, and *Blend minor* in Essay 2.

## 5.2 Assignments

Two different out-of-class assignments from two separate courses were included in the analysis. The requirements for both essays were approximately 15 pages in length with at least 15 references. Assignment 1, the less complex essay, required students to solve an organisational challenge of their choice, drawing on the content of the specific module. This assignment focused on ‘analysing’, i.e. Level 4 of the cognitive domain of Bloom’s taxonomy (Anderson *et al.*, 2001). In the more complex assignment, students were expected to evaluate an organisation (in terms of its mission, internal conditions, and capabilities, as well as the external environment), identify desirable options, and develop short- and long-term objectives according to relevant academic theories, engaging Level 6 of Bloom’s cognitive domain (i.e. ‘evaluation’) (Anderson *et al.*, 2001). Essay 2 was submitted approximately three weeks after Essay 1. Students had approximately three weeks to prepare and submit Essay 1. The concept of plagiarism was briefly addressed in each course’s learning guide, but was excluded from the formulation of the assessment task.

## 5.3 Measures

### 5.3.1 Types of plagiarism

Detectable plagiarism was measured with six variables, summarised in Table 1. In addition to the type of plagiarism, i.e. *Reproduction*, *Alteration*, and *Blend*, the use of citations was included, to distinguish between minor plagiarism (citation provided) and major plagiarism (no citation provided).

**Table 1: Types of detectable plagiarism at sentence level examined in this study**

Citation behaviour		Copying strategies from source text
Citation(s) provided	No citation provided	
<i>Reproduction</i> <i>Minor</i>	<i>Reproduction</i> <i>major</i>	Text copied verbatim, without quotation marks
<i>Alteration</i> <i>Minor</i>	<i>Alteration</i> <i>major</i>	Substantial portions of text copied, with limited alteration
<i>Blend</i> <i>Minor</i>	<i>Blend</i> <i>major</i>	Additional words or phrases added to copied text

Source: Chrysler-Fox and Thomas (2017)

### 5.3.2 Characteristics of the essays

The characteristics of the essays were measured using four variables. *Word count* reflected the total number of words in an essay, inclusive of the list of references. *References* referred to the total number of references in an essay's list of references. *Timeliness* was measured as the number of minutes an essay was submitted before the deadline. Lastly, *Similarity* was the percentage of words in an essay similar to other texts (iParadigms, 2011). Data were extracted from the essays' Turnitin™ originality reports.

### 5.4 Data collection

A total of 256 Turnitin™ similarity reports (128 per essay), where each sentence highlighted as similar to other texts, were coded according to the variables described above (see Table 1). Excluded from the coding exercise were common phrases that cannot be regarded as plagiarism, as well as tables of contents, figures, and tables. Bullet points were coded according to full sentences (whether per bullet point or as one sentence continuing over several bullet points).

Examples of the coded sentences (unedited) representing the six types of plagiarism are displayed in Figure 1.

**Figure 1: Examples of the six types of plagiarism in the dataset**

	With citation ('minor')	Without citation ('major')
<b>Reproduction</b>	Diversity requires a type of organizational culture in which each employee can pursue his career aspirations without being inhibited by gender, race, nationality, or other factors that are irrelevant to performance (Henry & Evans, 2007).	McClelland also suggests that as effective managers need to be successful leaders and to influence other people; they should possess a high need for power.
<b>Alteration</b>	According to Ivancevich and Matteson (1999), the application of reason to bring about change is supported on the dissemination of information prior to the intent to change.	Long time ago, women were not allowed to work simply because it was the duty of their husbands to provide the family.
<b>Blend</b>	Many authorities have expressed some of the tasks that are identified in the above definition for example Andrews, (1987) suggested that the study of strategic management emphasizes the evaluation of external opportunities and threats, in light of an organization's strengths and weaknesses.	In addition to this, is the diversification strategic option to realise its goal of personalised health science nutrition to prevent and treat health conditions such as diabetes, obesity, cardiovascular, and Alzheimer diseases which aims to respond to the vision of the company which is providing Good Life to its customers.

The resulting frequencies were combined with the anonymised biographical data of the students. The frequencies were normalised to 10 000 words, similar to the study of Biber (2006) and Petrić (2012), to allow comparison between essays of different word counts.

## 5.5 Statistical analysis

Nonparametric tests were employed, as the assumption of normality was violated (Shapiro-Wilk tests were significant ( $p < .001$ )). Outliers considered accurate representation of the data were included in the analyses (Hair, Black, Babin & Anderson, 2010). Absolute values of the types of plagiarism were normalised to 10 000 words, to counter the intervening effect of essays of different lengths (Petrić, 2012; Biber, 2006). Friedman tests were used to test whether differences existed between the types of plagiarism committed. Wilcoxon signed-rank tests were employed to test for significant differences between the types of plagiarism between the two essays, as well as the characteristics of the essays. SPSS Version 24 (IBM Corp., 2016) was used for all tests, except where the Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995), using the R Stats Package (R Core Team, 2016), was used, to avoid Type 1 errors and correct the  $p$ -values for the multiple comparisons. Only statistically significant and pertinent results are reported (full results are available upon request).

## 6 RESULTS AND FINDINGS

The aim of this study was to compare students' reliance on inadequate paraphrasing strategies in two essays of different levels of complexity.

### 6.1 Plagiarism strategies in the essays

The first objective was to identify the differences between the types of plagiarism committed in the more complex essay, compared to the less complex one. Following a significant Friedman's chi-square test result ( $\chi^2(11, n = 128) = 93.968; p < .001$ ) testing for differences among the different types of plagiarism between the essays, a series of Wilcoxon signed ranks tests were conducted. Statistically significant differences in students' use of different types of plagiarism between a less complex essay (Bloom's Level 4) and a more complex one (Bloom's Level 6) are reported in Table 2. The  $z$ -values of the Wilcoxon signed ranks tests are reported for each comparison. The differences were all of small effect size, unless a medium effect ( $\$$ ) is indicated. The 'X' in the horizontal comparisons represents the type of plagiarism most used.

**Table 2: Comparison of students' use of types of plagiarism in essays with two levels of complexity**

		Var.	Less complex Essay 1 (Bloom's Level 4)						More complex Essay 2 (Bloom's Level 6)					
			Minor plagiarism			Major plagiarism			Minor plagiarism			Major plagiarism		
			Repro.	Alt.	Blend	Repro.	Alt.	Blend	Repro.	Alt.	Blend	Repro.	Alt.	Blend
Essay 1	Min.	Repro.	X							-2.754*			-2.314*	
		Alt.		X						-4.330***			-2.768**	
		Blend			X					-2.413*				
	Maj.	Repro.	—	—	—	—	—	—	—	—	—	—	—	
		Alt.	—	—	—	—	—	—	—	—	—	—	—	
		Blend	—	—	—	—	—	—	—	—	—	—	—	
Essay 2	Min.	Repro.	—	—	—	—	—	-3.596***	X	—	—	—	—	
		Alt.				-3.158**	-2.723*	-4.789***		X				
		Blend	—	—	—	—	—	—	—	—	—	—	—	
	Maj.	Repro.				-2.684*	-2.286*	-3.709***				X		
		Alt.	-3.466**	-2.119*	-4.060***	-5.038***§	-4.735***	-6.290***§					X	
		Blend						-3.216**					X	
Min.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Mdn		0.00	2.43	2.19	0.00	0.00	0.00	0.00	2.84	0.00	0.00	4.12	0.00	
75%		9.37	10.80	7.65	3.32	5.89	2.79	6.46	10.61	4.75	12.65	23.52	6.93	
Max.		162.74	76.00	52.92	248.67	87.94	40.82	146.75	143.78	33.16	340.57	239.52	50.84	

Note: Repro. = Reproduction; Alt. = Alteration.

\* $p < .05$ , \*\* $p < .01$  and \*\*\* $p < .001$ , based on the adjusted Benjamini-Hochberg  $p$ -values.

As can be seen in Table 2, five statistically significant differences in the use of different types of plagiarism indicated that students, in the more complex Essay 2, compared to Essay 1, relied more on:

- *Reproduction minor* than *Blend major* in Essay 1;
- *Reproduction major* than all types of major plagiarism used in Essay 1;
- *Alteration minor* than all types of major plagiarism used in Essay 1;
- *Alteration major*, compared to all other (*minor* and *major*) types of plagiarism used in Essay 1; and
- *Blend major* than *Blend major* in Essay 1.

*Alteration major*, where substantial portions of text were copied but not furnished with citations, was the prominent type of plagiarism in Essay 2, where half of the sample's number of transgressions ranged between 0.00 and 23.52 (*Mdn* = 4.12). *Blend minor*, where additional words or phrases were added to copied text and citation were provided, was relied on the least (where three-quarters of the sample's number of transgressions ranged between 0.00 and 4.75, *Mdn* = 0.00).

Overall, the results indicate that plagiarism increases as the complexity of essays increases. Firstly, it was found that the students furnished fewer citations in the more complex essay. This supports previous views (Petrić, 2012; Elander *et al.*, 2010; Jian *et al.*, 2008) that complexity may influence students' decisions to plagiarise, in particular, to resort to patchwriting strategies (Chandrasoma, Thompson & Pennycook, 2004; Marsh *et al.*, 1997). However, the 'process of writing' is an alternative explanation. In light of the time constraints and complexity, students may focus more on compiling a draft document with text copied from source documents that are not always appropriately cited. With a looming deadline, rather than revising the essay, time is spent on paraphrasing and inserting citations where they were originally not included, resulting in spending additional time to look for the citations. Thus, students' process of writing may lead them to exclude citations. It seems that students deem appropriation (use of source text) and attribution (providing citations) of text as two separate activities.

Furthermore, the students relied predominantly on copying substantial portions of text with limited alteration (*Alteration*). This may be explained by Petrić's (2012) finding that time constraints may influence the type of plagiarism. This could also be ascribed to students' way of paraphrasing, i.e. the process of making changes before a deadline (Tomaš, 2011; Pecorari, 2008), which would point to a lack of academic writing skill. Time constrains,

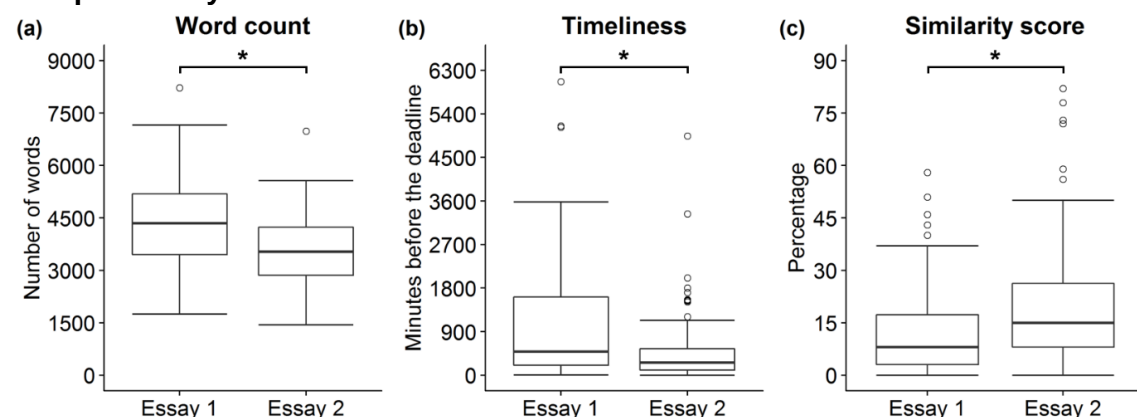
exacerbated by the need to paraphrase, which is cognitively demanding, may explain the reliance on this type of behaviour (Marsh *et al.*, 1997).

Finally, when considering, holistically, the five statistically significant differences in Table 2, an intriguing pattern emerged. It seems more likely that students' decisions in light of difficulty (effort) and complexity (mentally taxing) in avoiding plagiarism (at the last minute), are based on the 'least effort given a time constraint,' and balanced between (i) whether to attempt paraphrasing (cognitively demanding) versus (ii) providing a citation (when it was at hand (e.g., available in the draft document)). Thus, there is an interaction (systemic) between the task environment (difficulty, complexity, and time constraints) and the individual factors. Thus, the type of plagiarism in the essays cannot only be explained, for example, by poor academic writing skills (Tayan, 2016; Eret & Gokmenoglu, 2010; Szabo & Underwood, 2004), or the finding of Cumming *et al.* (1989), who maintain that students with poor English proficiency copy text verbatim. In fact, not all sentences in the essays were plagiarised (when reviewing the descriptive statistics in Table 2).

## 6.2 Differences in essay characteristics

The next objective was to determine the differences in the characteristics of the essays as a result of the writing strategies employed. Following a series of Wilcoxon signed rank tests, statistically significant differences (all of medium effect) between the less complex and more complex essay were found, displayed in Figure 2.

**Figure 2: Differences in essay characteristics between the less complex and more complex essay**



\* $p < .001$ .

The total number of words decreased significantly ( $z = -7.207$ ;  $p < .001$ ,  $r = -.45$ ) between Essay 1 ( $Mdn = 4\ 349$ ) and Essay 2 ( $Mdn = 3\ 530$ ). After excluding 21 students who had



submitted their essays after the deadline, a significant decrease ( $z = -5.997$ ;  $p < .001$ ;  $r = -.41$ ) was found between the time students ( $n = 107$ ) submitted Essay 1 ( $Mdn = 487$  minutes; ~8 hours), compared to Essay 2 ( $Mdn = 257$  minutes; ~4 hours). Students' similarity scores increased significantly ( $z = -5.710$ ;  $p < .001$ ,  $r = -.36$ ) between Essay 1 ( $Mdn = 8\%$ ) and Essay 2 ( $Mdn = 15\%$ ). No significant difference ( $z = -1.471$ ;  $p = .14$ ;  $r = -.09$ ) was found between the number of references used in Essay 1 ( $Mdn = 12.00$ ) and Essay 2 ( $Mdn = 12.00$ ).

What is striking about the results is that, compared to Essay 1, Essay 2 had a lower word count, was submitted closer to the deadline, and contained more plagiarism, indicated by Turnitin™'s similarity index. A first finding is that plagiarism (i.e. similarity scores) increased when the complexity of the essay increased, which supports previous arguments and findings (Petrić, 2012; Yazici *et al.*, 2011; Elander *et al.*, 2010; Jian *et al.*, 2008; Chandrasoma *et al.*, 2004; Marsh *et al.*, 1997) that complexity may lead to plagiarism.

A second finding is that the effort required for and complexity of the essays seem to have a bearing on the timeliness, as students submitted the more complex essay closer to the deadline, lending support to Petrić's (2012) finding that, to understand complex material, students (especially non-native English-speaking students (Tomaš, 2011)) need additional time. The writing process, influenced by the effort and cognitive demands placed on students (Petrić, 2012), may explain this behaviour.

The last finding was that the more complex essays contained fewer words than the less complex essays, despite similar requirements. It was expected that, as the total number of references increased, the length of the assignment would also increase; however, there was no statistically significant difference between the total number of references between the essays. A possible explanation may be that students experienced difficulty in evaluating source documents and selecting appropriate material for the task, resulting in less material being included in the assignments. In light of there being no significant difference between the essays in the total number of references, Starr's (2002) argument that students spending too much time finding relevant sources may lead to plagiarism is not supported. Time constraints may also have influenced the extent to which material was selected for inclusion in Essay 2, compared to Essay 1, when considering the linguistic and/or conceptual complexity of source texts leading to plagiarism (Petrić, 2012).

## **7 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

This study has a few limitations. Firstly, findings would have been enriched by a mixed-method approach. A follow-up examination of the essays would have yielded more insight into how the students wrote, in particular how copied sentences were combined into paragraphs, together with an indication of how copied material was combined with proper paraphrasing. Such an approach would indicate whether students consider a larger section of the source text, rather than focussing only at sentence level (Barks & Watts, 2001). In addition, interviews with selected students would have provided more insight into: (a) the process of writing, in particular when and how words in sentences were emended to avoid plagiarism; (b) the decisions surrounding how copied sentences were integrated into paragraphs; and (c) how they dealt with the effort, time constraints, and complexity with respect to plagiarism. Future research may utilise mixed methods incorporating a quantitative assessment, followed up by an inspection of the actual writing and students' perceptions of their writing.

A further limitation was that the essays were done outside of the classroom; it is thus impossible to confirm authenticity. A future endeavour may consider a quantitative experimental approach, to ensure the students' identity. Lastly, the coding of the essays was done only by the present researcher. Co-coding with another specialist may have yielded different interpretations in certain cases, and may have slightly altered the statistical results and interpretations.

## **8 PRACTICAL MANAGERIAL IMPLICATIONS**

Educationists need to be mindful when designing learning experiences, especially when complex tasks are introduced in academic essays. More specifically, in light of the challenges presented in the literature review and the findings presented, the practice of scaffolding can be employed to stagger the tasks from less to more complex. In conjunction with the introduction of more complex tasks, students should be allowed the necessary time to cognitively engage with the task and to paraphrase appropriately. Attention can also be given to the writing process, in conjunction with the appropriation and attribution of text as part of drafting an essay. The above is particularly important in a South Africa, where the majority of students are non-native English speakers. Educationists developing students' report-writing skills and knowledge may not only foster confidence in dealing with complexity, but also contribute towards their employability. Implications for institutions are also noted. The design and assessment of learning

experiences described above may also be extended to the teaching and learning policies, especially with regard to formative assessment. University writing centres could provide a supportive environment, using non-credit-bearing interventions to aid vulnerable students in acquiring the required reading and paraphrasing skills to deal with complex essays.

## **9 CONCLUSIONS**

As the complexity of tasks increase, students are more prone to resorting to plagiarism if they have not developed the appropriate level of cognitive ability. In addition, contextual factors outside the control of students encourage plagiarism. The effort required of students may exacerbate time constraints, leaving less time to engage in critical thinking, which may ultimately lead to plagiarism. As a consequence, opportunities for learning are minimised (Postle, 2009).

It was argued that the 'why' and 'how' of student plagiarism cannot be separated from each other, and, that previously proposed theories fall short in explaining student plagiarism in the context of complexity. Therefore, the contribution of this study is the extension of current knowledge on the notion of complexity by considering the 'how' and 'why' of student plagiarism in two essays of different levels of complexity, by considering, not only the types of plagiarism students resort to, but also the impact of time constraints, evident in the characteristics of the essays and time submitted before a deadline. The findings indicate that students furnish fewer citations in a more complex assignment, alternatively resorting to copying substantial portions of text with limited alteration and without citations. This may be explained by students' decisions during the writing process in weighing up the amount of effort required, given the looming deadline, as reported by Pecorari (2008). It appears that students regard the practice of citation and writing, specifically paraphrasing, as two isolated activities. Furthermore, when complexity is present, students produce shorter essays, submitted closer to the deadline. Their decision that it would be less time-consuming to provide citations rather than paraphrasing may require more time, may have resulted in the complex essays which were shorter in length and submitted closer to the deadline.

An appreciation of the impact of task complexity on students' academic essays interplay with factors not within their control will enable educationists to not set students up for failure and through punitive consequences that may limit their employability and access to future leadership positions.

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### **10.1 Competing interest**

This study has not received any financial assistance that could have influenced the results.

### **10.2 Author contributions**

This study was conceptualised, executed, and written up in this article by the author.

## 11 REFERENCE LIST

- Amsberry, D. (2009). Deconstructing plagiarism: International students and textual borrowing practices. *The Reference Librarian*, 51(1):31–44.
- Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J. & Wittrock, M.C. eds. (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. New York, NY: Longman.
- Barks, D. & Watts, P. (2001). Textual borrowing strategies for graduatelevel ESL writers. In D. Belcher & A. Hirvela, eds. *Linking literacies: Perspectives on L2 reading-writing connections*. Ann Arbor, MI: University of Michigan Press: 246–367.
- Barrón-Cedeño, A., Vila, M., Martí, M.A. & Rosso, P. (2013). Plagiarism meets paraphrasing: Insights for the next generation in automatic plagiarism detection. *Computational Linguistics*, 39(4):917–947.
- Beasley, J.D. (2004). The impact of technology on plagiarism prevention and detection: Research process automation, a new approach for prevention. In *Plagiarism: Prevention, Practice and Policies 2004 Conference*.
- Benjamini, Y. & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society. Series B (Methodological)*, 57(1):289–300.
- Bereiter, C. & Scardamalia, M. (1987). *The psychology of written composition*. Hillsdale, NJ: Erlbaum.
- Biber, D. (2006). *University language: A corpus-based study of spoken and written registers*. Amsterdam: John Benjamins Publishing Company.
- Bilić-Zulle, L., Frković, V., Turk, T., Ažman, J. & Petrovečki, M. (2005). Prevalence of plagiarism among medical students. *Croatian medical journal*, 46(1):126–131.
- Chandrasoma, R., Thompson, C. & Pennycook, A. (2004). Beyond plagiarism: Transgressive and nontransgressive intertextuality. *Journal of Language, Identity & Education*, 3(3):171–193.
- Choo, T.E. & Paull, M. (2013). Reducing the prevalence of plagiarism: A model for staff, students and universities. *Issues in Educational Research*, 23(2):283–298.
- Chrysler-Fox, P.D. & Thomas, A. (2017). Managing plagiarism of South African Honours students: Does an intervention have any effect? *KOERS*: In review.
- Colquitt, J.A. (2012). From the editors: Plagiarism policies and screening at AMJ. *Academy of Management Journal*, 55(4):749–751.
- Cumming, A., Rebuffot, J. & Ledwell, M. (1989). Reading and summarizing challenging texts in first and second languages. *Reading and Writing*, 1(3):201–219.

- Davis, M. & Carroll, J. (2009). Formative feedback within plagiarism education: Is there a role for text-matching software? *International Journal*, 5(2):58–70.
- Davis, S.J. (1994). Teaching practices that encourage or eliminate student plagiarism. *Middle School Journal*, 25(3):55–58.
- Edlund, J.R. (2004). What is 'plagiarism' and why do people do it? Available from [http://www.ee.hawaii.edu/~dong/EE461/Writing/W1\\_Plagiarism\\_John\\_R.htm](http://www.ee.hawaii.edu/~dong/EE461/Writing/W1_Plagiarism_John_R.htm) (Accessed 30 December 2015).
- Elander, J., Pittam, G., Lusher, J., Fox, P. & Payne, N. (2010). Evaluation of an intervention to help students avoid unintentional plagiarism by improving their authorial identity. *Assessment & Evaluation in Higher Education*, 35(2):157–171.
- Ellery, K. (2008). An investigation into electronic-source plagiarism in a first-year essay assignment. *Assessment & Evaluation in Higher Education*, 33(6):607–617.
- Eret, E. & Gokmenoglu, T. (2010). Plagiarism in higher education: A case study with prospective academicians. *Procedia Social and Behavioral Sciences*, 2(2):3303–3307.
- Eret, E. & Ok, A. (2014). Internet plagiarism in higher education: Tendencies, triggering factors and reasons among teacher candidates. *Assessment & Evaluation in Higher Education*, 39(8):1002–1016.
- Fazel, I. & Kowkabi, N. (2013). Students' source misuse in language classrooms: Sharing experiences. *TESL Canada Journal*, 31(1):86–95.
- Francis, E.M. (2014). Difficulty vs. Complexity: What's the Difference? H.O.T./D.O.K. Available from <http://maverikeducation.blogspot.co.za/2014/03/difficulty-vs-complexity-whats.html> (Accessed 14 August 2017).
- Garnica, M. (2010). Relationship between cognitive load, task complexity, and indicators of plagiarism: Implications for instructional design. Unpublished doctoral thesis. Minneapolis, MN: Capella University.
- Goh, E. (2013). Plagiarism behavior among undergraduate students in hospitality and tourism education. *Journal of Teaching in Travel & Tourism*, 13(4):307–322.
- Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2010). *Multivariate data analysis*. 7th ed. Upper Saddle River, NJ: Pearson Prentice Hall.
- Heckler, N.C., Rice, M. & Bryan, C.H. (2013). Turnitin systems: A deterrent to plagiarism in college classrooms. *Journal of Research on Technology in Education*, 45(3):229–248.
- Hong, L.C. & Cheng, T.L. (2013). Comparative study on the usage of an online plagiarism detection service when presenting distance learning courses. *Asian Association of Open Universities Journal*, 8(1):23–31.
- Honig, B. & Bedi, A. (2012). The fox in the hen house: A critical examination of plagiarism among members of the academy of management. *Academy of Management Learning and Education*, 11(1):101–123.

- Howard, R.M. (1995). Plagiarisms, academic death penalty. *College English*, 57(7):788–806.
- Howard, R.M. (1999). *Standing in the shadow of giants: Plagiarists, authors, collaborators*. Stamford, CT: Albex Pub.
- IBM Corp. (2016). Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.
- iParadigms. (2011). Turnitin instructor user manual Chapter 2: Originality check. Available from [https://turnitin.com/static/resources/documentation/turnitin/training/Instructor\\_Originality\\_Report\\_Chapter\\_2.pdf](https://turnitin.com/static/resources/documentation/turnitin/training/Instructor_Originality_Report_Chapter_2.pdf) (Accessed 5 May 2017).
- Jabulani, S. (2014). An analysis of the language of attribution in university students' academic essays. *South African Journal of Education*, 34(3):1–10.
- Jian, H.-L., Sandnes, F.E., Huang, Y.-P., Cai, L. & Law, K.M.Y. (2008). On students' strategy-preferences for managing difficult course work. *IEEE Transactions on Education*, 51(2):157–165.
- Jones, A.A. & Freeman, T.E. (2003). Imitation, copying, and the use of models: Report writing in an introductory physics course. *IEEE Transactions of Professional Communication*, 46(3):168–184.
- Kelly, A.M., Gutmann, M.E., Schneiderman, E., DeWald, J.P., McCann, A. & Campbell, P.R. (2008). The prevalence of academic dishonesty in Texas Dental Hygiene Programs. *Journal of Dental Education*, 72(11):1247–1260.
- Krishnan, L.A. & Kathpalia, S.S. (2002). Literature reviews in student project reports. *IEEE Transactions on Professional Communication*, 45(3):187–197.
- Kuhlthau, C.C. (2004). *Seeking meaning: A process approach to library and information services*. Westport, CT: Libraries Unlimited.
- Marsh, R.L., Landau, J.D. & Hicks, J.L. (1997). Contributions of inadequate source monitoring to unconscious plagiarism during idea generation. *Journal of Experimental Psychology*, 23:889–897.
- McCord, A. (2008). Improving online assignments to deter plagiarism. In *Proceedings of TCC Worldwide Online Conference 2008*. TCC Hawaii: 41–49. Available from [www.learntechlib.org/p/43817](http://www.learntechlib.org/p/43817) (Accessed 22 April 2017).
- Mckay, T.M. (2014). Combating plagiarism using a community of practice approach. *South African Journal of Higher Education*, 28(4):1315–1331.
- Neville, C. (2010). *The complete guide to referencing and avoiding plagiarism*. 2nd ed. Maidenhead: Open University Press / McGraw-Hill.
- Nitterhouse, D. (2003). Plagiarism—not just an 'academic' problem. *Teaching Business Ethics*, 7(3):215–227.
- OED Online. (2017). difficulty, n. Oxford University Press. Available from <http://www.oed.com.ujlink.uj.ac.za/view/Entry/52490?redirectedFrom=difficulty> (Accessed 12

May 2017).

- Orthaber, S. (2009). Detecting and preventing plagiarism in a foreign language e-learning course. *International Journal of Advanced Corporate Learning*, 2(2):20–25.
- Park, C. (2003). In other (people's) words: Plagiarism by university students—literature and lessons. *Assessment & Evaluation in Higher Education*, 28(5):471–488.
- Pecorari, D. (2008). *Academic writing and plagiarism: A linguistic analysis*. London, UK: Continuum International Publishing Group.
- Pecorari, D. & Petrić, B. (2014). Plagiarism in second-language writing. *Language Teaching*, 47:269–302.
- Petrić, B. (2012). Legitimate textual borrowing: Direct quotation in L2 student writing. *Journal of Second Language Writing*, 21(2):102–117.
- Postle, K. (2009). Detecting and deterring plagiarism in social work students: Implications for learning for practice. *Social Work Education*, 28(4):351–362.
- Price, J. & Price, R. (2005). Finding the true incidence rate of plagiarism. *International Education Journal*, 6(4):421–429.
- R Core Team. (2016). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. Available from <https://www.r-project.org/>.
- Razi, S. (2015). Development of a rubric to assess academic writing incorporating plagiarism detectors. *SAGE Open*, 5(2):1–13.
- Rinnert, C. & Kobayashi, H. (2005). Borrowing words and ideas: Insights from Japanese L1 writers. *Journal of Asian Pacific Communication*, 15(1):15–29.
- Rolfe, V. (2011). Can Turnitin be used to provide instant formative feedback? *British Journal of Educational Technology*, 42(4):701–710.
- Schouwenburg, H.C. & Groenewoud, J. (2001). Study motivation under social temptation; Effects of trait procrastination. *Personality and Individual Differences*, 30(2):229–240.
- Segal, S., Gelfand, B., Hurwitz, S., Berkowitz, L., Ashley, S., Nadel, E. & Katz, J. (2010). Plagiarism in residency application essays. *Annals of Internal Medicine*, 153(2):112–121.
- Shi, L. (2006). Cultural backgrounds and textual appropriation. *Language Awareness*, 15(4):264–282.
- Shi, L. (2012). Rewriting and paraphrasing source texts in second language writing. *Journal of Second Language Writing*, 21(2):134–148.
- Shi, L. (2004). Textual borrowing in second-language writing. *Written Communication*, 21(2):171–200.
- Starr, K. (2002). *Plagiarism 101: How to write term papers without being sucked into the black hole*. New York, NY: State University of New York. Available from



- <http://library.albany.edu/usered/plagiarism/> (Accessed 22 April 2017).
- Szabo, A. & Underwood, J. (2004). Cybercheats: Is information and communication technology fuelling academic dishonesty? *Active Learning in Higher Education*, 5(2):180–199.
- Tayan, B.M. (2016). Academic misconduct: An investigation into male students' perceptions, experiences & attitudes towards cheating and plagiarism in a Middle Eastern university context. *Journal of Education and Learning*, 6(1):158.
- Tomaš, Z. (2011). Textual borrowing across academic assignments: Examining undergraduate second language writers' implementation of writing instruction. Unpublished doctoral dissertation. Salt Lake City, Utah: The University of Utah.
- Vieyra, M., Strickland, D. & Timmerman, B. (2013). Patterns in plagiarism and patchwriting in science and engineering graduate students' research proposals. *International Journal for Educational Integrity*, 9(1):35–49.
- Wager, E. (2014). Defining and responding to plagiarism. *Learned Publishing*, 27(1):33–42.
- Walker, A.L. (2008). Preventing unintentional plagiarism: A method for strengthening paraphrasing skills. *Journal of Instructional Psychology*, 35(4):387–395.
- Walker, J. (2010). Measuring plagiarism: Researching what students do, not what they say they do. *Studies in Higher Education*, 35(1):41–59.
- Walker, J. (1998). Student plagiarism in universities: What are we doing about it? *Higher Education Research and Development*, 17(1):89–106.
- Warn, J. (2006). Plagiarism software: No magic bullet! *Higher Education Research & Development*, 25(2):195–208.
- Yamada, K. (2003). What prevents ESL/EFL writers from avoiding plagiarism?: Analyses of 10 North-American college websites. *System*, 31(2):247–258.
- Yazici, A., Yazici, S. & Erdem, M.S. (2011). Faculty and student perceptions on college cheating: Evidence from Turkey. *Educational Studies*, 37(2):221–231.