

*Full Length Research Paper*

# An assessment of the metacognitive knowledge of Botswana ESL university student writers

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This research explored metacognitive knowledge of the University of Botswana (UB) students taking the Advanced Writing Skills course, and related this knowledge to their writing performance. The specific objectives of this study were: (a) To explore the metacognitive knowledge of the Botswana students taking the Advanced Writing Skills (GEC 211) course; (b) To examine the relationship between the metacognitive knowledge of the students and their *writing* performance. Data for this study were collected using two questionnaires: The Biographic Information Questionnaire and the Metacognitive Style Questionnaire adapted from the instrument used by Kasper. Data were analysed both quantitatively and qualitatively. The quantitative data were analysed descriptively by calculating means and standard deviations of the autobiography, task and strategy variables of the metacognitive questionnaire. It was also analysed inferentially using two-tailed ANOVA to test for significant difference between the means. Qualitative data were analysed to look for common patterns between the students' responses and to see whether the data supported the statistical data. The results showed that the UB Advanced Writing Skills of students had moderate metacognitive knowledge and that they tended to focus more on the linguistic aspect of writing rather than on communicating with the audience. For that reason they fell short of being effective writers.

**Key words:** Metacognitive knowledge, autobiographic variable, task variable, strategy variable, linguistic information, communicating with audience.

## INTRODUCTION

### Background

The important position of metacognition in learning has been documented in cognitive psychology (Paris and Winograd, 1990; Pintrich, 1999; Zimmerman and Schunk, 2001) and in second language learning (Bolitho et al., 2003; Chamot et al., 1999; Mokhtari and Reichard, 2002). In cognitive Psychology, metacognition is defined as:

*"One's knowledge concerning one's own cognition processes and products or anything related to them . . . active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects on which they bear, usually in the service of some*

*concrete goal or objective (Flavell, 1976: 232)".*

Metacognition consists of both metacognitive knowledge and metacognitive experiences or regulation (Flavell, 1979). Metacognitive knowledge is the knowledge people have about their own cognitive processes and those of others, about a task and strategies for completing such a task (Flavell and Wellman, 1977). According to Flavell (1979), it is a knowledge base they acquire formally or informally, deliberately or incidentally. Strong metacognitive knowledge has been found to be critical for successful learning. According to Devine (1993: 109), "a good learner has ample metacognitive knowledge about the self as a learner, about the nature of the learning task

at hand, about appropriate strategies for achieving cognitive goals". It has also been found that metacognitive knowledge is linked to performance in reading and writing as documented in earlier studies (Devine, 1993; Jacobs, 2004; Kasper, 1997). For example, in a study involving 120 ESL students representing diverse ethnic, cultural, and linguistic backgrounds, Russian et al. (1997) investigated the relationship between metacognition and ESL writing performance. The study found that students who were successful on the final writing assessment obtained higher ratings on the personal, task and strategy metacognitive variables. The results indicated a positive correlation between metacognitive knowledge and writing performance, but that did not imply a causative relationship between these variables. Another study that investigated the association between metacognitive knowledge and writing performance is that by Devine et al. (1993). The study found a potential link between students' metacognitive models and their actual writing performance. They concluded that the link between metacognition and writing performance has important implications for ESL writing instruction and that ESL students should be helped to meet the critical challenge of academic writing.

### The aim and setting of the study

The focus of this article is on exploring the metacognitive knowledge of University of Botswana (UB) students taking a communication skills course entitled "Advanced Writing Skills". The study also examines the relationship between these students' metacognitive knowledge and their writing performance. Botswana is a Southern African country with approximately 1.7 million people. In Botswana English is an official language used in education and commerce and for other official purposes. It is also a primary medium of instruction and a compulsory subject from Standard Three (i.e., the third year of formal schooling) onwards. It is therefore important for Botswana students to pass English in order to proceed to upper levels of education, and to speak and write it at work. However, experience shows that Botswana students, particularly at the UB, are generally not proficient in English despite its significance.

It was important, therefore, to conduct this research to find out whether the UB students' metacognitive knowledge was related to their performance in writing English. The students from whom data were collected were at the beginning of a 15 weeks post-year-one course offering training in advanced writing skills. The purpose of the course was to expose students to various types of written discourse; and to give them practice in producing selected genres such as descriptive, narrative, persuasive, argumentative and expository essays. Training activities focused on developing textual themes, intra- and inter-paragraphic cohesion/coherence, accurate/acceptable use of language and topic relevance. This

research was done at the beginning of the course so that its findings could be used to help the students to think about their writing abilities. They would also be assisted to plan and monitor their writing and to use appropriate strategies when performing their writing tasks.

### Rationale and significance of the study

This study is important because there are few studies that measure metacognitive knowledge of students taking a writing course and relate it to performance (Kasper, 1997). In the author's knowledge this is the first study to address this topic in Botswana. This study will therefore provide a very important contribution to the ESL field.

### Research objectives

The specific objectives of this study are:

1. To explore the metacognitive knowledge of the Botswana students attending the Advanced Writing Skills course?
2. To examine the relationship between the metacognitive knowledge of the students and their *writing* performance?

### METHOD

#### Participants

A total of 30 students completed three questionnaires in class in one sitting. Of these students 46.7% ( $n = 14$ ) were males and 53.3% ( $n = 16$ ) females. 33% ( $n = 10$ ) were doing second year, 33% ( $n = 10$ ) third year, and 33% ( $n = 10$ ) fourth year. At the time of the study, 31% ( $n = 9$ ) of them were aged between 16 and 20; 55.2% ( $n = 16$ ) between 21 and 25 and 13.8% ( $n = 4$ ) 25 and above. Table 1 give more information about the students.

#### Procedure for grading the participants

To pass the Advance Writing Skills course all the enrolled students had to pass continuous assessment (CA) and a final two hours long written examination. The CA for the cohort of students used in this study comprised two take-home assignments, which were discussed in groups but submitted individually. In the first assignment the students were asked to choose a topic and research on it and then submit both a piece of written work showing all the initial steps taken to prepare for the essay and a written outline of the essay. The second assignment required the students to submit a complete essay either based on the topic used for the first assignment or on a different topic. The assignments were then respectively peer-assessed by both these students in groups and by their lecturer. The students' and lecturer's assessment were then averaged for each student. The final examination comprised a choice of questions from two sections. The first section comprised theoretical questions on essay writing and the second section practical questions such as a short essay consisting of two or three paragraphs. The final mark of the Advanced Writing Skills course

**Table 1.** Number of students according to programme of study.

	Bachelor of Arts (Humanities)	Bachelor of Education	Bachelor of Science	Bachelor of Architecture	Bachelor of Nursing	Bachelor of Law	Total N
n	14	7	4	1	1	3	30
%	46.7	23.3	13.3	3.3	3.3	10	100

was computed by averaging the CA and the examination mark for each student.

For the purpose of this research the final marks of the students were classified using the University of Botswana overall percentage scale in which 80% to 100% is graded A or Outstanding; 75-79.9 = B+ or Excellent; 70-74.9 = B or Very Good; 65-69.9 = B- or Good; 50-64.9 = C or Marginal pass to satisfactory; and 35-49.9 = D or Fail to Marginal fail. Therefore, in this study students designated as successful are those in the Good-Outstanding and Satisfactory-Marginal Pass brackets, and those designated as unsuccessful are in the Fail-Marginal Fail.

### Questionnaires

The first of the two instruments used in this study was used to collect demographic data. The second was the metacognitive questionnaire adapted from the instrument used in Kasper (1997) study. This metacognitive tool has also been used by Sandman (1993) and Devine et al. (1993).

The metacognitive questionnaire was subdivided into two questionnaires. The first was a writing Autobiography questionnaire consisting of nine questions. These questions were designed to evaluate the personal component of the metacognitive model for writing. Students were asked to reflect on their writing and say whether it was good and whether they enjoyed it. They were also asked to identify their writing strengths and weaknesses.

The second metacognitive questionnaire was a cognitive style questionnaire designed to evaluate the task and strategy components. It consisted of two questions: The first asked the students to define good writing. The purpose of this question was to assess students' understanding of the writing task and its requirements. The second question was designed to draw the students' attention to the goals they set and the strategies they used when writing. It asked them to describe what they did when they had trouble writing. The metacognitive written protocols such as the one used in this study have been found to be reliable and useful when used by second or foreign language students. According to Scholfield (1995: 65), these protocols "show a greater ability than might have been expected to introspect usefully about their conscious learning strategies and communication processing activities for the language they are learning, as well as what they say in it."

### Procedure for administering the questionnaires

The questionnaires were administered by the researcher in one sitting. Consent was sought from the students before they could complete the questionnaires. The students were asked to answer the questions as honestly as possible and were informed that there were no right or wrong answers. They were assured that their answers were only needed for the purpose of research and that they would be kept confidential.

### Analysis

Responses from the metacognitive questionnaire were analysed by

the researcher. The researcher assigned each student in the sample a rating ranging from zero to five to correspond to each of the three components of metacognitive model: personal, task, and strategy. The ratings were scored in terms of whether the student thought the main focus of writing was grammar and correctness, personal voice, or communication. Grammar and correctness included mention of punctuation, grammatical usage, and/or spelling as major concerns in writing. Personal voice consisted of creativity and self expression, and Communication comprised sensitivity to audience and communicating thoughts clearly. It is important to note that the ratings used in this study are based on the ratings used in the Kasper (1997) study. If a student identified grammar and correctness as the dominant focus, he/she was awarded a rating of 1. If he/she identified personal voice as the dominant focus, he/she was given a rating of 2. If he/she identified communication as a dominant concern in writing he/she received a rating of 3. If he/she identified any two of the above he/she was given a 4. Finally, if he/she indicated that effective writing should communicate a message clearly, express the writer's feelings, and be grammatically correct, thus identifying all three areas as important, he/she was awarded a maximum rating of 5.

After all the ratings had been assigned, they were averaged for the personal, task, and strategy components. The ratings for successful students were then compared to those for unsuccessful students. If the ratings for successful students were higher than those for less successful students it would be deduced that the former have more metacognitive knowledge about writing than the latter. The results were further analysed for statistical significance using the one-way ANOVA test.

## RESULTS

The results are presented first in terms of the statistical analysis of the students' responses and then in terms of the examination of the students' written protocols.

### Statistical analysis of the students' metacognitive responses

Overall, the students scored a mean rating of 2.50 (SD = 1.33, N = 30) for the Autobiography metacognitive variable. This suggests that these students mainly focus on creativity and self-expression when writing. The mean for the task variable was 2.93 (SD = 1.76, N = 30), which again suggests that the students think that the purpose of writing is to produce a creative piece of work expressed well in English. Finally, the mean for the strategy variable was 1.23 (SD = 0.89, N = 30). This suggests that the strategies the students generally use to write English are focused on correct grammar, punctuation and spelling.

The students' responses were also compared by performance. The results show that for the Autobiography

**Table 2.** Mean metacognitive ratings by proficiency.

	Personal			Task			Strategy		
	M	SD	N	M	SD	N	M	SD	N
Good - Outstanding	3.36	1.362	11	4.00	1.183	11	1.64	1.120	11
Satisfactory - Marginal Pass	4.00	1.183	11	2.13	1.642	8	1.13	0.641	8
Fail - Marginal Fail	2.10	1.101	10	2.70	1.829	10	1.00	0.667	10

variable, Good-Outstanding students scored a mean of 3.36 (SD = 1.36, N = 11), which was slightly lower than the mean for students in the Satisfactory-Marginal Pass bracket (M = 4.00, SD = 1.18, N = 11), but much higher than the average for Fail-Marginal Fail students (M = 2.10, SD = 1.10, N = 10). Therefore, successful students (Good-Outstanding and Satisfactory-Marginal Pass) focus more on communicating with the audience than do unsuccessful students. Furthermore, the one-way ANOVA results showed that there was a significant difference between the Autobiography/Personal means ( $F(2, 28) = 4.38, p = 0.023$ ). The LSD post hoc test showed that the significant differences were between the Good-Outstanding and the Marginal Pass-Satisfactory students ( $p = 0.01$ ) and Good - Outstanding and Fail-Marginal Fail students ( $p = 0.03$ ).

For the task variable, the mean for Good-Outstanding students was higher than that for both the Satisfactory-Marginal Pass students and the Fail-Marginal Fail students. The one-way ANOVA results showed that there was a significant difference between these means ( $F(2, 28) = 3.71, p = 0.038$ ). The LSD post hoc test showed that the significant differences were between the Good-Outstanding and the Marginal Pass-Satisfactory students ( $p = 0.01$ ) only. These results suggest that successful students are more concerned about making their readers understand their writing. For the strategy variable, the mean for Good-Outstanding students was again higher than that for both the Satisfactory-Marginal Pass students and the Fail-Marginal Fail students (Table 2). But the one-way ANOVA results showed that there was no significant difference between means. Again these results suggest that successful students (Good-Outstanding and Satisfactory-Marginal Pass) are more concerned about making their readers understand their writing.

### **Analysis of the students' written protocols**

The students' written responses were examined further to clarify the statistical responses. First to be considered is the Autobiography variable and then the Task and Strategy Variables.

#### **Autobiography variables**

The Autobiography questions asked the students to

identify their strengths and weaknesses and to say what lead them to believe that they had those strengths and weaknesses. Their responses indeed show that most of the students across all performance levels were less inclined towards communicating with the audience. However, their comments did not reveal substantive differences between successful and unsuccessful students.

Across all performance levels, the students mostly attributed their writing difficulties to grammar, vocabulary and organization of writing and also to anxiety, mood and lack of interest in writing. However, some of the students from the Good-Outstanding and Satisfactory-Marginal Pass categories indicated that their writing problems were related to communicating with the reader. Again, most students across all performance levels indicated that their writing strengths were in the areas of creativity and grammar, vocabulary and expression. However, it is important to note that only Good-Outstanding students indicated that they were strong at impressing the reader and at presenting good ideas. In terms of writing weaknesses students, across all levels of performance, thought that they were weak at grammar, vocabulary, expression and organization, and that they lacked confidence and interest in writing. None of the students mentioned anything related to communicating with the audience (Table 3).

#### **Task and strategy variables**

The students were asked to define good writing. The responses of the students across all levels of performance almost equally emphasised the importance of developing fluency and readability in writing (Table 4). However, Good-Outstanding students emphasized more than students from other categories that the purpose of writing is to capture the interest of the reader. For example, one of the Good-Outstanding students said, "*Creativity, coherence, ability to generate interest of the reader and take his attention, observance of cardinal writing rules such as punctuation, and use of catchy, especially humour generating phrases and originality is also an aspect of good writing*". In contrast, one of the Fail-Marginal Fail students said, "*Writing words which are all correctly spelled, words linked correctly and grammar and vocabulary should be good.*"

The students were further asked to say what kind of

**Table 3.** Personal/Autobiography variable – open-ended questions by performance.

	Good - outstanding	Satisfactory – marginal pass	Fail – marginal fail
<b>What makes writing difficult</b>			
Grammar, vocabulary, organisation	4	6	5
Anxiety, mood, interest	3	1	2
Think about the reader	1	1	-
Being restricted by instructions	2	-	-
Marks	-	-	2
<b>Strengths</b>			
Creativity	4	1	6
Impress the reader	2	-	-
Grammar, vocabulary, expression	4	6	1
Ideas/Content	1	-	-
Confidence	1	-	1
<b>Weaknesses</b>			
Grammar, vocabulary, expression, organisation	5	4	6
Confidence, interest	2	2	4
Ideas/Content	1	-	-
Marks	1	-	-
<b>How did you know about your strategies and weaknesses</b>			
From others (e.g. teacher, friends)	8	3	1
From reviewing my own work	2	4	2
Marks/Performance	2	1	6

action they take when they have trouble writing. The purpose of the question was to explore the strategies they used to overcome writing problems. Only Good-Outstanding and Satisfactory-Marginal Pass students answered this question by stating that they take a break from writing in order to refresh and to unblock the writer's block. It should be noted that most of these students came from the Good-Outstanding category (Table 4). For example, one of them said, *"If I have to write as a must I normally take a break and take a walk to put my mind at ease and unblock the writer's block but it is as a matter of option I normally share the exercise."*

In contrast, the responses of students from the Fail-Marginal Fail category suggest that they lack confidence, persistence and self-reliance because most of them said they ask for help from other people such as teachers and friends. However, it is interesting to note that most of them again said that they arrange their thoughts, write again and revisit their writing (see Table 4). This suggests that they reread and revisit their work in order to correct the content, grammar and organization of the writing. For example, one of them said, *"I just take a piece of paper then I start writing down points or everything that I think might be related to the topic. Later I arrange these ideas to come up with a good writing."*

## DISCUSSION

The objective of this study was to explore the metacognitive knowledge of the University of Botswana students of different writing performance levels attending the Advanced Writing Skills course. Overall, the results show that the students scored the mean of 2.50 for the Personal/Autobiography variable, 2.93 for the Task variable and 1.23 for the strategy variable. Where the score of 1 means that the students mainly focus on grammar and correctness, 2 on personal voice or creativity and 3 on communication, 4 a combination of any two of these factors, and 5 a combination of all of them, it can be concluded that the above means suggest that the metacognitive knowledge of these students is moderate and that they mainly focus on grammar and creativity when they write. These results are supported by findings from the written protocols whereby across all levels of performance the majority of the students thought that the main purpose of writing was to produce an organized, readable and grammatically good text. Thus, they are not really effective writers because effective writers have been found to focus on the audience when writing in addition to focusing on the linguistic aspects of writing (Kasper, 1997).

**Table 4.** Task and strategy variables.

	Good - outstanding	Satisfactory – marginal pass	Fail –marginal fail
<b>Task</b>			
Fluent, good grammar, organized, readable.	8	6	10
Capture the interest of the reader.	5	1	2
<b>Strategy</b>			
I write simple and straightforward language.	1	-	-
I take a break to refresh and to unblock the mind.	4	1	-
I ask for help.	2	1	5
I consult a dictionary.	1		2
I arrange my thoughts, write again and revisit my writing.	2	2	4
I give up	2	-	1
I read a lot and practice writing a lot	-	2	-

As expected, the findings of this study generally show that there is a relationship between metacognitive knowledge and performance. The results show that for the Personal/Autobiography variable successful students (Good-Outstanding and Satisfactory-Marginal Pass students) scored means that were higher than the mean for unsuccessful students (Fail-Marginal Fail students). The ANOVA test showed that the difference between these means was statistically significant ( $p < 0.05$ ). Similarly, for the Task and Strategy variables the means for successful students were higher than the mean for unsuccessful students, but the differences for the Strategy variable were not statistically significant. The above findings confirm the findings by Kasper (1997) whereby successful students scored higher metacognitive ratings on the personal, task and strategy variables than less successful students. The relationship between metacognition and performance has also been confirmed by Collins (1994) and Schoenfeld (1987). They found that performance improves as students can describe what they know and what they do not know and if they can regulate their learning. However, it should be noted that the mean for Satisfactory-Marginal Pass students was slightly higher than that for Good-Outstanding students although the difference was not that much.

The written responses provided more insight into the way the UB Advanced Writing Skills students learn writing. Firstly, it seems that the students tend to focus their writing on the linguistic aspects of the product or the essay rather than on the purpose of writing or the target audience. For example, the results show that across all levels of performance most of the responses indicated that the students were strong at creativity, grammar and organization. Furthermore, the students said that the areas mentioned above made writing difficult for them

and that they would like to improve their performance in them. These results may be explained in terms of the styles of teaching in these students' writing classes. Research shows that student writers acquire their priorities from the response of the styles of their instructors (Zak, 1990). It may be that the UB Advanced Writing Skills instructors mainly focus their teaching and assessment on the linguistic quality of the final product or the essay, but do not focus the students' attention towards managing the process of writing. According to Garner (1994: 715), the ESL writing faculty should be nonjudgmental and encourage the students to write freely and to redirect "responsibility for their writing development from the instructor to the students themselves".

Secondly, the written responses indicate that the UB Advanced Writing Skills students lack interest, motivation and confidence in writing. The majority of them across all levels of performance said that anxiety and lack of interest made writing difficult for them, and that lack of confidence was their main area of weakness. The lack of confidence may emanate from the fact that the students are not in total control of their writing. Although some of the responses show that the students review their own work and take a break to unblock the mind, the majority of the responses showed that the students knew about their strategies and weaknesses from others such as teachers and friends. Again, most of the unsuccessful students indicated that the strategy they use is to ask for help from others. According to Garner (1994), to make instruction effective the students should be taught to set and clearly define writing goals and then to regulate and monitor their own progress toward these goals. Furthermore, research shows that metacognition can promote academic learning and motivation (Paris and Winograd, 1990; Mokhtari and Reichard, 2002). So, perhaps if these

students are taught metacognitive strategies of writing their motivation and interest in writing may increase and they may perform better.

## IMPLICATIONS

The implications that come out of this study are that there is a need to increase the UB Advanced Writing Skills students' metacognitive knowledge and to boost their motivation to learn writing.

Firstly, Advanced Writing Skills training should incorporate instructional activities that can increase the students' awareness of the metacognitive strategies needed to improve their writing. The training can be direct (Goh and Taib, 2006), and it should help learners to become autonomous and to self-appraise and self-regulate their learning (Wenden 1998). According to Blakey and Spence (1990), students' attention should be focused on how tasks are accomplished most efficiently, and that the process goals, in addition to the content goals, should be established and evaluated with the students. However, as Paris and Winograd (1990: 22) caution, "metacognition should not be regarded as a final objective for learning or instruction". Instead, it should be seen as an opportunity to "provide students with knowledge and confidence that enables them to manage their own learning and empowers them to be inquisitive and zealous in their pursuits". Kasper (1997) points out that students can achieve English language writing competence and can develop metacognitive models of writing if they are made aware of their attitudes toward writing, and are alerted to what they do when they are in the process of writing.

Secondly, students should be assisted to explore their own learning and development in writing. It has been suggested by different researchers (Devine et al., 1993; Kasper, 1997) that the students can be given the metacognitive questionnaire to complete so that they can gain knowledge of both the sufficiency and the accuracy of their metacognitive models. According to Sandman (1993), they can learn from their writing autobiographies about their writing weaknesses, strengths, attitudes and other behaviours that can shape their writing skills. The information from the metacognitive questionnaire will also help the instructors to discover the strategies used by individual students and it will be used to help them develop the students' writing competence. The information will also provide a base for the instructors to discuss cognitive and metacognitive aspects of thinking (Mokhtari and Reichard, 2002) with students. According to Paris and Winograd (1990) raising the students' consciousness about metacognitive strategies and motivation has twin benefits of: (a) transferring the responsibility and monitoring of learning from the teachers to the students and (b) promoting self-perceptions and motivation among students. In this way the students will become independent thinkers and writers.

## Limitations

The main limitation of this study is the small number of respondents, which makes it difficult to generalize the findings of this study. Another limitation is that the students used in this study come from different levels of learning and for that reason their levels of metacognitive knowledge may have varied because of their different experiences. The findings of the present study show that UB Writing Skills students still lack a wider knowledge of the metacognitive strategies necessary for improving writing. Although they

## Conclusion

This study has successfully achieved its overall aim of assessing the metacognitive knowledge of UB Advanced Writing Skills students. It has found that they have moderate metacognitive knowledge of writing and that they focus their attention more towards linguistic aspects of writing than towards communicating with the audience. Devine (1993) points out that metacognitive variables play a more significant role in than linguistic competence in writing.

It has also replicated Kasper's (1997) study and confirmed its findings that successful students have a higher metacognitive knowledge than unsuccessful students. It has also confirmed the value of the metacognitive questionnaire, which is useful for tapping into students' personal or autobiographic knowledge of writing, knowledge of the task of writing and the strategies that can be used to enhance writing.

This study therefore recommends that the UB Advanced Writing Skills students should be assisted to explore their metacognitive knowledge by using the metacognitive instrument and other tools that can help them to do so. They should be directly trained to use metacognitive strategies when writing and this can be achieved by employing instructional activities that incorporate these strategies. Finally, more research is needed to explore the metacognitive development of the UB students as they continue to learn how to write effectively.

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