An Exploratory Factor Analysis of the Revision Strategies Questionnaire in an Underachieved ESL Writers' Context

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ABSTRACT

Although various aspects of the writing process have been studied extensively of late, research on weak students' revision strategies has been notably lacking. This paper focuses on the first of three parts involved in this research. It is the scale development stage in which the scales used in the study were validated mainly through confirmatory factor analysis (CFA). Then a model was hypothesized and tested through structural equation modelling approach to reflect the relationships between students' writing attitude, behaviour and difficulties in ESL writing. Finally an ESL writing strategies training program would be conducted to the participants to explore whether the writing strategies training programme embedded in a 'normal' course curriculum would have any impact on the students' ESL writing performance. For the purpose of this paper, CFA was performed to test the reliability and validity of the constructs, including item loading, construct reliability, and average variance extracted (AVE). CFA was executed via Structural Equation Modelling (SEM) technique utilizing Analysis of Moment Structure (AMOS) computer programme version 21. It is a requirement that item loadings for every factor to exceed 0.50 to be considered as items having sufficient loading values to represent its expected factor (Hair, et al., 2010). There were three sets of CFA that had been examined: (i) writing attitude, (ii) writing behaviour, and (iii) writing difficulties. Results demonstrate that the standardized loadings for each item were above 0.50, Cronbach's Alpha and composite reliability exceeded 0.70 and AVE values beneath 0.50   (Hair et al., 2010). Hence, the factors are reliable, and have a good convergent validity and reasonable to be used for the further analysis, that is in the structural model.

INTRODUCTION

A significant number of research and theoretical studies have been conducted on the topic of composing process in writing. It is generally accepted that writing is a complex skill, and concerns about how to teach it are not new. Various teaching strategies have been introduced and tried by second language educators to allay these concerns. In composition, second language educators have been moving towards an emphasis on process, rather than product, and in consequence, there are a variety of available sources providing research findings on how students learn to write, suggesting new teaching strategies, and arguing for curricular changes. All these are carried out in the interest of second language writing.

This new focus on the learners and what they do to learn the L2 more effectively is encouraging. Even more heartening are the studies that report positive interactions between

strategy use and language test performance (Cohen, 1987; Gu & Johnson, 1996; Huang & Van Naerssen, 1987; Park, 1996, Ghafournia & Afghari, 2013). The time is, therefore, for more research into the investigation of relationships between writing strategy use and L2 writing ability, given the crucial role played by the latter in the academic success and, by extension, the educational and career prospects of L2 learners. This emphasis on L2 writing ability underscores the need for studies that empirically investigate the relationships between L2 writing strategy use and L2 writing ability.

In order to fully understand the complexity of the writing skill, the current theory of composition instruction, namely the process approach will be considered first. It was not until the early 1970s that teachers and educators gave proper consideration to why some writers were good and others were not. This, in a way, was a recognition of the weaknesses in the product approach (Raimes, 1983) and thus signaled the emergence of the process approach, with its emphasis on writing as a process rather than a product. In relation to this, Hairston (1982: 85) noted that:
[Writing] is messy, recursive, convoluted, and uneven. Writers write, plan, revise, anticipate, and review throughout the writing process, moving back and forth among the different operations involved in writing without any apparent plan.

Hedge (2000: 359) stated that the focus of a process approach 'is not so much on what learners need to cover but on how they acquire language through performing it in the classroom'. The process approach generally considers writing to be a learner-focused cognitive activity (e.g., composing processes or strategies). Writing is essentially a cognitive activity, completely under the control of the individual learner and used primarily to impart information. Advocates of process pedagogy emphasise that writing is not a product but a process: one that helps students discover their own voice and helps others to recognise that students have something important to say. The process approach involves allowing students to choose their own topics; provides teacher and peer feedback; encourages revision; and uses student writing as the primary text of the course. As time progressed, research on the act of composing began to appear, providing empirical support for the teaching of writing as a process.

Following this developing research, an increasing number of teachers and programs began to emphasise what Susser (1994) identified as the two essential features of process pedagogy: awareness and intervention. Hairston (1982:122) characterised the move as "a process-centered theory of teaching writing'' and thus gave rise to the thought that the composition studies are probably in the first stages of a paradigm shift. There is no doubt that the process movement helped to call for attention to aspects of writing that had been neglected in many writing classrooms; it also contributed to the professionalisation of composition studies.

The purpose of the study was to examine the relationships between writing behaviour, attitude and difficulties, and second language (L2) writing ability in academic writing. This study utilized a questionnaire to gather writing strategy use, attitude and difficulties, and writing ability data from 800 undergraduate ESL participants. Exploratory factor analysis (EFA) will be used to identify the latent factors the students' writing behaviour, attitudes and difficulties.

METHOD FOR FACTOR ANALYSIS

Analysis of measurement model is achieved by inspecting the item loadings for exploratory

factor analysis, and confirmatory factor analysis separately. Exploratory factor analysis, a data reduction technique, is deployed to reduce a large number of variables to a smaller set of underlying factors, which categorize and summarize the essential information contained in the variables. Principal component analysis with Varimax rotation was chosen as the extraction method to the test the validity of the constructs. Researchers generally favour conceptually distinct factors produced by Varimax rotations in factor analyses, based on the expectation that they produce cleaner and independent factors (Tabachnick and Fidell, 1983).

Table 4.1 shows the original Questionnaire variables (refer Appendix 1 for the complete Questionnaire) along with the individual items designed to measure them. It also presents the internal consistency reliability estimates for the four strategy variables and the overall questionnaire. The strategy reliabilities are mostly high, ranging from 0.723 for the "planning" strategy to 0.824 for the "writing practice attitude".

WRITING STRATEGIES VARIABLE	ITEMS USED	WRITING BEHAVIOUR	ALPHA
P1	9		-
P2	10	PLANNING	-
P3	11		0.723
P4	12		
R1	16		-
R2	17	REVISION	
R3	18		0.745
R4	19		
A1	13	AWARENESS OF AUDIENCE	0.775
A2	14		
D1	15	DRAFTING	-
AWC1	20a.		
AWC2	20b.	AWARENESS OF WRITING CONVENTIONS	
AWC3	20c.		0.729
AWC4	20d.		
AWC5	20e.		
AWP1	21a.	AWARENESS OF WRITING PURPOSE	
AWP2	21b.		0.796
AWP3	21c.		
OEW1	24	OPPINION ABOUT ENGLISH WRITING	
OEW2	25		0.758
OEW3	26		
WPA1	27 a.		
WPA2	27 b.		0.824
WPA3	27 c.	WRITING PRACTICE ATTITUDE	
WPA4	27 d.		-
WPA5	27 e.		
WPA6	27 f.		0.824

WPA7	27 g.		
WPA8	27 h.		
WPA9	27 g.		
GD1	22 a.	GENERAL DIFFICULTIES	
GD2	22 b.		
WD1	22 c.	WRITING DIFFICULTIES	0.801
WD2	22 d.		
WD3	22 e.		
WD4	22 f.		
WD5	22 g.		
WD6	22 h.		
WD7	22 i.		
SD1	22 j.	STRATEGIES DIFFICULTIES	0.796
SD2	22 k.		
SD3	22 l.		
SD4	22 m.		

Table 4.1: Cronbach's Alpha readings

In exploratory factor analysis, which is conducted via Statistical Package for Social Sciences (SPSS) computer programme version 21, item loadings for every factor need to exceed 0.50 to be considered as items having sufficient loading values to represent its expected factor (Hair, Black, Babin, Anderson, & Tatham, 2010). The strength of an item is indicated by high factor loadings and low standard errors.

FINDING AND DISCUSSION FOR FACTOR ANALYSIS

Table 4.2 details out loading for each item that exceeds the threshold value of 0.50. The items loadings seem to range between 0.594 and 0.997. However, five items, item P1, P2, D1, R1and WPA4, have to be removed from further analysis as having item loadings below the benchmark value of 0.50. Hence, the each factor item is satisfactory to belong to its respective factor. Furthermore, as discussed earlier, all factor had Cronbach's alpha value above acceptable level of 0.70, implying all variables are reliable and have high internal consistency. The questions omitted are:

P1- When you write an essay, how many sources (e.g. books, journals) did you use?
P2- When you write an essay, if you did use any source (s), what kind of source(s) did you use?
D1- When you write your essay, how many drafts did you do?
R1 - When you write your essay, did you revise (e.g. read your essay to correct spelling/grammar/punctuation mistakes, etc.) before handing in for marking?
WPA4 - Some common mistakes that students make when answering essay questions: Not sticking to word length

Several possible reasons could lead to this. For example, weak factor loadings can indicate that students did not comprehend the meaning of an item in the context of the factor it was intended to represent. Table 4.2 below shows the loadings for all the accepted questionnaire items.

Table 4.2: Item Loadings

Items	Label	Loadings	Total Variance Explained	Percentage Variance Explained	Cronbach's Alpha
Planning	**P**		**1.825**	**45.621**	**0.723**
When you write an essay, did you make a rough plan before starting to write?	P3	0.946			
If your answer to Question 11 was YES, what type of plan did you make?	P4	0.933			
Awareness of Audience	**AAD**		**1.871**	**62.374**	**0.775**
When you write your essay, did you have an audience (readers of your essay) in mind when writing?	A1	0.960			
If your answer to question **9** was **YES**, which audience did you have in mind?	A2	0.956			
Revision	**R**		**1.675**	**41.874**	**0.745**
If your answer to question **16** was **YES**, how important were the following when revising your last essay?.	R2	0.594			
Did you have others to help you revise (e.g. read your essay to check spelling/grammar/punctuation mistakes, etc.) your last essay before handing in for marking?	R3	0.823			
If your answer to question **18** was *YES*, who helped you revise your last essay?	R4	0.740			
Awareness of Writing Conventions	**AWC**		**2.418**	**48.361**	**0.729**
Proper referencing	AWC1	0.613			
Organizing/structuring ideas	AWC2	0.727			
Using appropriate academic language	AWC3	0.683			
Engaging/interacting with content/subject Matter	AWC4	0.713			
Develop understanding of content/subject matter	AWC5	0.734			
Awareness of Writing Purpose	**AWP**		**1.667**	**55.579**	**0.796**
To summarize the available literature (information on a particular topic)	AWP1	0.649			
To summarize the available literature and add your own comments/criticisms /	AWP2	0.821			
To use literature in order to generate your own comments, ideas or response to the topic in general	AWP3	0.756			
Opinion about English Writing	**OEW**		**1.796**	**59.877**	**0.758**
Do you enjoy writing essays?	OEW1	0.833			
How confident are you in essay writing?	OEW2	0.786			
To what extent does essay writing help you understand the content (subject matter) of what you are writing?	OEW3	0.696			
Writing Practice Attitude	**WPA**		**3.788**	**42.084**	**0.824**
Plagiarizing (using someone's ideas without saying so	WPA1	0.677			
Improper referencing format format	WPA2	0.567			
Little or no use of references	WPA3	0.598			
Not sticking to word length	WPA5	0.757			
Poor essay organization (no introduction, main body, and conclusion)	WPA6	0.682			
No evidence of research	WPA7	0.738			

No links between ideas	WPA8	0.655			
Not developing an argument	WPA9	0.680			
Writing Difficulties	**DGW**		**3.495**	**38.832**	**0.801**
Understanding essay question	GD1	0.644			
Finding sufficient/relevant information	GD2	0.560			
Writing introduction	WD1	0.685			
Writing main body	WD2	0.686			
Writing conclusion	WD3	0.712			
Paraphrasing/ summarizing other authors' ideas	WD4	0.532			
Expressing ideas clearly/logically	WD5	0.612			
Writing well linked (coherent) Paragraphs	WD6	0.630			
Using appropriate academic writing Style	WD7	0.515			
Strategies Difficulties	**SD**		**2.508**	**62.700**	**0.796**
Revising	SD1	0.849			
Peer-reviewing	SD2	0.868			
Editing	SD3	0.807			
Referencing and writing bibliography	SD4	0.619			

Comrey and Lee (1992) suggest that loadings in excess of 0.71 are considered excellent, 0.63 very good, 0.55 good 0.45 fair, and 0.32 poor. Choice of the cut-off for size of loading to be interpreted is a matter of researcher preference (cited in Tabachnick and Fidell, 2001: 625). As mentioned earlier, Hair et al. (2010) factor loading of 0.50 and above is accepted as sufficient.

The aim of the questionnaire is to establish what are the issues associated with the students' performance in English writing. This raises the question as to what are the students' English writing activities, for example: planning, awareness of audience, revision, awareness of writing conventions, awareness of writing purpose, opinion about English writing, writing practice attitude, writing difficulties and strategies difficulties.

Comparing the responses for the nine compulsory clusters mentioned above, we are able to consider whether we do appear to be identifying a construct reflecting the students' writing behaviours, attitudes and difficulties. Using factor analysis to identify the factors, the overall variance in responses was explained with a Cronbach's Alpha of 0.723 to 0.824 indicating a very high level of reliability. Using a cut-off point of 0.50 for the factor loading, below which items were excluded, this single factor included 39 items in the questionnaire relating to the students' writing experience. This is going to be discussed according to the nine clusters.

WRITING BAHAVIOUR:
CLUSTER 1: Planning

Items	Loadings	Cronbach's Alpha
When you write an essay, did you make a rough plan before starting to write?	0.946	**0.723**
If your answer to Question 11 was YES, what type of plan did you make?	0.933	

The questions in this cluster ask the students whether they do any plan before embarking on essay writing and what types of plan they usually do. The table above shows that the two questions were highly correlated with the overall planning factor with factor loadings of 0.946 for Making plans before writing and 0.933 for types of plans. The questions ask the students

to choose either they do a mental, a basic plan, an extended plan, a rearranged plan or an evolving plan. The results suggest that planning is a performance indicator for the students' English writing skill.

CLUSTER 2: Awareness of Audience

Items	Loadings	Cronbach's Alpha
When you write your essay, did you have an audience (readers of your essay) in mind when writing?	0.96	**0.775**
If your answer to question **9** was **YES**, which audience did you have in mind?	0.956	

As for the second cluster, again the loading are both very high, i.e. 0.96 for having an audience in their mind while writing and 0.956 for the types of audience. These results also suggest that awareness of audience is another performance indicator for the students' English writing skill.

CLUSTER 3: Revision

Items	Loadings	Cronbach's Alpha
Did you have others to help you revise (e.g. read your essay to check spelling/grammar/punctuation mistakes, etc.) your last essay before handing in for marking?	0.823	**0.745**
If your answer to question **18** was *YES*, who helped you revise your last essay?	0.74	
If your answer to question **16** was **YES**, how important were the following when revising your last essay?.	0.594	

Revision is the next factor and the loadings for this factor differs quite significantly but still above 0.50. The first question in this cluster asks whether the writers gauge the help of their friends to revise their essay and the loadings is the highest at 0.823. In second place is the people that help them to revise at 0.74 and the final question, at 0.594, asks whether revision is important. In other words, revision is another performance indicator for students' English writing skill.

CLUSTER 4: Awareness of Writing Conventions

Items	Loadings	Cronbach's Alpha
Develop understanding of content/subject matter	0.734	**0.729**
Organizing/structuring ideas	0.727	
Engaging/interacting with content/subject Matter	0.713	
Using appropriate academic language	0.683	
Proper referencing	0.613	

The students were then asked to rate the five aspects of writing conventions. They are, according to loadings weight, understanding of contents, organizing ideas, interacting with the essay topic, importance of using appropriate academic language and proper referencing. Thus, awareness of writing convention is also another performance indicator for students' English

writing skill.

CLUSTER 5: Awareness of Writing Purpose

Items	Loadings	Cronbach's Alpha
To summarize the available literature and add your own comments/criticisms /	0.821	**0.796**
To use literature in order to generate your own comments, ideas or response to the topic in general	0.756	
To summarize the available literature (information on a particular topic)	0.649	

The fifth cluster is awareness of writing purpose. The loadings for all the three questions were also considered excellent (Comrey and Lee, 1992) because they are between 0.649 and 0.821. The questions ask the students whether they summarize literature and add their own comments, use the literature to generate their own comments or only summarize the available literature. The one with the highest loading is they summarize literature and add their own comments. Therefore, awareness of writing purpose is another performance indicator for students' English writing skill.

WRITING ATTITUDE:
CLUSTER 6: Opinion about English Writing

Items	Loadings	Cronbach's Alpha
Do you enjoy writing essays?	0.833	**0.758**
How confident are you in essay writing?	0.786	
To what extent does essay writing help you understand the content (subject matter) of what you are writing?	0.696	

The questions in this cluster ask for the students' opinion on whether they enjoy writing English essays, confident in writing the essays and also the extent the essay writing help them to understand the content of what they are writing. The loadings show that the students' opinion about English writing is also another performance indicator for students' English writing skill.

CLUSTER 7: Writing Practice Attitude

Items	Loadings	Cronbach's Alpha
Not sticking to word length	0.757	**0.824**
No evidence of research	0.738	
Poor essay organization (no introduction, main body, and conclusion)	0.682	
Not developing an argument	0.68	
Plagiarizing (using someone's ideas without saying so	0.677	
No links between ideas	0.655	
Little or no use of references	0.598	
Improper referencing format format	0.567	

As for cluster 7, the students were asked to identify their writing practice attitude. The loadings for this questions ranges from 0.567 to 0.757. They were asked to rate some common mistakes that students make when answering essay questions. Nine mistakes were listed but one was omitted to low loadings, i.e. unreadable hand writing. Hence, the students' writing practice attitude towards essay writing errors is also a performance indicator for students' English writing skill.

WRITING DIFFICULTIES:
CLUSTER 8: Writing Difficulties

Items	Loadings	Cronbach's Alpha
Writing conclusion	0.712	
Writing main body	0.686	
Writing introduction	0.685	
Understanding essay question	0.644	
Writing well linked (coherent) Paragraphs	0.63	**0.801**
Expressing ideas clearly/logically	0.612	
Finding sufficient/relevant information	0.56	
Paraphrasing/ summarizing other authors' ideas	0.532	
Using appropriate academic writing Style	0.515	

The second last cluster is asking the students about their writing difficulties. In the questionnaire the students were presented with thirteen issues to rate and issues were dropped due to low loadings. They are Revising, Peer-reviewing, Editing, Referencing and writing bibliography. From the table above, writing conclusion, main body and introduction scored significantly high followed by writing coherent paragraph, expressing ideas logically, finding sufficient information, paraphrasing and lastly, using appropriate academic writing style. In other words, these factors are also performance indicators for students' English writing skill.

CLUSTER 9: Strategies Difficulties

Items	Loadings	Cronbach's Alpha
Peer-reviewing	0.868	
Revising	0.849	
Editing	0.807	**0.796**
Referencing and writing bibliography	0.619	

Last but not least, in cluster 9, the students were asked to rank the difficulty of writing strategies usually employed when writing. All four strategies have quite high loadings, i.e. peer reviewing as the highest followed by revising, editing and, referencing and writing bibliography. Therefore, these writing strategies are also performance indicators for students' English writing skill.

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CONCLUSION

The current study concentrates primarily on the performance indicators of these underachieved writers when writing in English. The Cronbach's Alpha indicate that for this group of students the hampering factors are their writing practice attitude that came first, followed by writing difficulties, awareness of writing purpose, strategies difficulties, opinion about English writing, revision and lastly, awareness of writing convention.

Items	Cronbach's Alpha
Writing Practice Attitude	0.824
Writing Difficulties	0.801
Awareness of Writing Purpose	0.796
Strategies Difficulties	0.796
Opinion about English Writing	0.758
Revision	0.745
Awareness of Writing Conventions	0.729

However, when analyzed according to the average factor loadings or each items, their writing strategies difficulties came first, followed by opinion about English writing, awareness of writing purpose, revision, awareness of writing conventions, writing practice attitude and writing difficulties coming as the last factor.

Items	Average Loadings
Strategies Difficulties	0.786
Opinion about English Writing	0.772
Awareness of Writing Purpose	0.742
Revision	0.719
Awareness of Writing Conventions	0.694
Writing Practice Attitude	0.669
Writing Difficulties	0.62

Therefore, the results of this study should be beneficial to teachers of English writing because it is based on an extensive data involving 1400 student scoring from MUET band 1 to MUET band 5 and all of them are from the state of Sabah. The issues mentioned above should be taken into consideration in the teachers' course plans.

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