



Four-Factor Analysis of L2 Writers' Emotional Experiences in the Various Stages of Research Writing in English

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Introduction

Academic Emotions

In the classroom, learners are subject to what Goetz, Zirogibl, Pekrun, and Hall (2003) call “academic emotions” (p. 11). These academic emotions are also dependent on the nature of the tasks that need to be completed, whether the task is enjoyable or not, and on the expected task outcome, getting a good grade or not (Pekrun, Goetz, Titz, & Perry, 2002a, cited in Goetz et al., 2003).

According to Goetz et al. (2003) academic emotions may also have a social or individual nature. The social nature of emotions is evident when learners feel that they are competing with other learners, while the individual nature is seen when learners feel disappointed about not meeting their personal goals. With the long hours spent by students attending classes and doing several activities, it can be said that academic emotions pervade the classroom (Pekrun & Stephens, 2010).

Emotions can affect how learners absorb learning tasks and if these emotions, particularly the negative ones, are not managed appropriately or completely neglected, they could create anxiety towards learners' school work (Dobson & Dobson, 1981, cited in Thayamani, Fathima, & Mohan, 2013). Students who may be experiencing emotional distress could feel helpless in handling their academic requirements. On the other hand, students who are generally feeling good about their life or simply enjoying a sense of well-being about themselves may handle their school work positivity and with confidence. How a learner feels will most likely influence how he/she thinks (Lawson, 2002), and could even determine if he/she continues or ends the learning process (Mendez Lopez, 2012).

The feelings and emotions engendered in educational contexts are said to be a result of the evaluations learners make of particular situations while learning (Pekrun, 2000, cited in Mendez Lopez, 2011). These evaluations are influenced by previous experiences, the social context, and learners' personal goals (Pekrun et al., 2002, cited in Goetz et al., 2003; Sansone & Thoman, 2005). Also, negative emotions of

students often result in lower grades compared to learners who had more positive emotions (Gumora & Arsenio, 2002).

Studies on Emotions in Teaching and Learning Writing at the College Level

Pasubillo (2016) identified reasons that make writing, in particular, a difficult skill for L2 students. First, writing requires learners be familiar with the rudiments of a grammar structure which is different from his/her first language. Second, some learners feel that writing is boring. Lastly, when learners engage in a writing task, they often spend more time agonizing over if what they have written makes sense or not, and if their teacher would accept their writing or subject it to criticism. It seems that L2 writing in the college/tertiary level poses many problems to learners. For instance, many college students are anxious about library research (Mellon, 1986) because the activity is something new to them (Daly & Wilson, 1983). College learners also consider research writing as demanding (Rose, 1980) because of the compulsory nature of the activity (Powers, Cook, & Meyer, 1979).

The Context of the Study

In the context of the present study, an English for Academic Purposes (EAP) writing courses, enrolled learners also face the same challenges in the production of academic research papers. They too must adhere to the rudiments of writing as well as negotiate an academic writing processes associated with producing an academic paper. It has been observed that EAP writing courses have always been met with negative feelings stemming from complying with academic writing requirements, such as writing numerous successive drafts, and finally, producing a polished research paper. All these phases of writing the final draft contribute to the anxiety experienced by learners. Such an environment can make the EAP writing classroom emotionally-charged at times since the learners may experience frustration and fear of hearing criticisms of their output.

Research question:

What are the learners' emotional experiences while writing research in English?

Method

Participants

The item generation part of the study involved 70 undergraduate university students. The validation part of the study had a total of 409 undergraduate university students, 199 (48.66%) were females, 184 (44.99%) males, and 26 (6.35%) did not disclose their gender. All of them were enrolled in a research writing English class at the time of data collection. Their ages ranged from 16 to 21 years ($M = 17.93$, $SD = 1.01$).

Measure

The Emotional Experiences in Research Writing scale was comprised of 39 statements describing college learners' emotional experiences related to their research writing class activities. The learners responded to each statement on a 6-point likert scale from 1 = *Not at all true of me*, to 6 = *Very true of me*. The factor structure of the scale is presented in the results section of this paper.

Procedure

Item generation procedure

Seventy learners from two classes of basic research writing course were asked to describe their emotional experience in doing specific tasks in the course after each of the four stages of research paper writing. A total 108 relevant statements were extracted from the students' written responses to the prompt question. The statements were reviewed by three experienced teachers of research writing based on their readability, clarity, and specificity to a research writing task. Consequently, the evaluators recommended acceptance of 52 items. The researchers subsequently removed 13 items due to their similarities with other items.

Scale development and validation

The final scale consisted of 39 statements describing students' emotional experiences in research writing class. These statements were administered to 409 students who are taking the same English research writing course.

Data Analysis

Data screening was undertaken to check if the data satisfied the assumption of multivariate normality. Guided by Sharma (1996), the Mahalanobis plot of the 39 items of the emotional experiences scale showed linearity, thus suggesting normality in the distribution. Exploratory factor analysis (EFA) was then conducted to examine the factor structure of learners' emotional experiences in research writing class, using axis factor method of extraction.

Results

Data Adequacy

The 39 items were moderately correlated ($r = -.34$ to $.65$) and may be grouped into homogeneous factors that measure the same underlying dimensions. The measure of sampling adequacy was $KMO = .85$, suggesting that the data was adequate for factoring (see Sharma, 1996). Bartlett's test of sphericity gave a p -value $< .001$ level of significance, indicating that there is redundancy between items that can be summarized into factors, and therefore factor analysis is appropriate (Sharma, 1996).

Factor Solution

Considering that the data was not normally distributed, the principal axis factoring method was used to extract the factors from the data (see Wegener, MacCallum, & Strahan, 1999). With the assumption that the factors will be correlated, considering the valence of emotions and the tasks being situated in a specific course or subject, oblique rotation was employed using promax method. Exploratory Factor Analysis generated nine factors with eigenvalues above 1.0, but the scree plot indicated four factors. Upon inspection of the items, however, the 4-factor model was found to be most viable based on the presence of theoretically sound meanings of the items in each factor and the internal consistency of the items. The 4-factor model explains 45% of the variance as shown in Table 1.

TABLE 1
Eigenvalues and Percentage of Variance Explained by the Factors

Factor	Eigenvalues		
	Total	% of variance	Cumulative %
1	6.56	16.82	16.82
2	5.12	13.13	29.95
3	3.97	10.19	40.14
4	2.06	5.29	45.43

All but one item yielded factor loadings above 4.0, but two items with significant factor loadings cross-loaded in two factors. Only 36 items significantly loaded in only one of the four factors. Factor loadings of all the items are shown in Table 2. Items that cross-loaded in at least two factors and those that did not significantly load in any factor were excluded from the description of the 4-factor structure.

The four-factor solution revealed the most meaningful convergence of statements of learners' emotional experiences in their research writing class. The four factors highlighted the distinctive features of these emotional experiences in terms of valence (i.e., positive and negative emotions) and object focus (i.e., writing outcomes, writing task, and working with peers).

Factor 1, **negative emotions in writing tasks**, pertains to learners' emotional experiences in research writing class that are activated by their appraisals of the writing tasks as either having a negative or no value to them, and their appraisals of control as either high or low. A total of thirteen items significantly loaded in this factor, with a Cronbach's alpha of .86. The statements indicated learners' emotions of nervousness, worry, anxiety, fear, and laziness in doing specific tasks related to research writing. These emotions have negative valence and are all tied to specific writing task as their object focus.

Factor 2, **negative emotions in working with peers**, involves learners' emotions in research writing class which are tied to their experience in working with their classmates. Five items indicating negative emotions (feeling distressed/annoyed by partner) loaded in this factor with positive correlation coefficients. In addition, four items indicating positive emotions (feeling confident/comfortable with partner) also loaded in this factor with negative correlation coefficients, thus suggesting a reverse valence of emotions. In total, nine items significantly loaded in this factor, with a Cronbach's alpha of .86.

Factor 3, **positive emotions in writing outcomes**, is comprised of items that represent learners' positive emotional experiences (feeling accomplished/determined) related to their control and value appraisals of actual and prospective outcomes of their writing tasks. Nine items significantly loaded in this factor, with a Cronbach's alpha of .80. It is interesting to note that emotions pertaining to their teachers' support and suggestions did not load with the items about the learners' experiences with their peers (Factor 2). Instead, these loaded with the items that focus on their emotions toward the paper completion and their anticipated success in the writing task. One likely explanation for this is that the learners associate successful outcome with the positive assessment from the professor; hence, they tend to believe that following the comments and recommendations by their professor will result to high grade.

Factor 4, **positive emotions in writing tasks**, refers to learners' positive emotional experiences in doing their writing tasks. These emotional experiences (feeling excited/enjoyment) are activated by their appraisals of the positive value of the tasks, and their appraisals of high control over task performance. Five items significantly loaded in this factor, with a Cronbach's alpha of .78. The statements expressed learners' emotional experiences of enjoyment, excitement, and happiness in doing the tasks related to research writing which are in direct contrast with the emotional experiences reported in Factor 1.

TABLE 2

Factor Loadings from EFA Using Principal Axis Factoring Method with Oblique Rotation for the 39 Items on Emotional Experiences in Research Writing Class

	Items	Factor			
		1	2	3	4
1	I feel pressured when writing the draft.	.592	.006	.058	.014
4	I feel nervous in revising my paper.	.610	.074	-.196	-.067
7	I feel lazy to revise my paper	.398	.028	-.212	-.225
11	I feel insecure about how I go about my writing.	.668	.078	-.034	-.124
13	I feel lazy in finding sources for my paper.	.413	.116	-.172	-.193
14	I feel scared to make mistakes in writing my paper.	.613	.168	.028	-.008
15	I feel stressed by the research writing requirement.	.610	.095	.052	-.227
18	I feel nervous in choosing the right research topic.	.496	.134	.139	.054
25	I feel worried about the requirements of the subject.	.729	.081	.021	-.119
27	I feel tired in writing the research paper.	.435	.010	.139	-.205
28	I feel tensed while writing research.	.746	.118	-.063	-.146
30	I feel anxious about the quality of my draft.	.590	.158	-.007	-.045
36	I feel tired in revising the paper.	.516	.035	.048	-.070
3	I feel distressed by partner's/group mates' indecisiveness.	.275	.577	-.003	.126
16	I feel burdened from doing everything for my group mates.	.201	.592	.015	.106
17	I feel annoyed with my partners/group mates.	.131	.693	-.136	.093
19	I feel happy when working with classmates to produce a paper. (R)	.156	-.512	.395	.317
23	I feel confident about the help given by my classmates. (R)	.142	-.656	.370	.215
29	I feel comfortable working with my partners/group mates. (R)	.025	-.795	.326	.193
31	I feel confident working with partners/group mates. (R)	-.019	-.751	.324	.236
34	I feel hesitant to work with my partners/group mates in doing this paper.	.317	.561	-.131	.090
38	I feel frustrated with my partners/group mates.	.204	.713	-.171	.168
5	I feel accomplished after completing my paper.	.022	-.255	.567	.094
6	I feel guided by the professor's corrections and suggestions.	.021	-.093	.501	.127
10	I feel hopeful that I will get good a good score.	-.103	-.186	.597	.296
12	I feel surprised of what I was able to achieve in writing this paper.	.115	-.143	.622	.292
20	I feel happy after receiving support from my professor.	.157	-.157	.552	.231
21	I feel proud after completing the paper.	.006	-.222	.647	.218
32	I feel determined to meet the deadlines.	-.054	-.191	.477	.248
35	I feel excited to receive feedback about my paper.	.010	-.009	.474	.292
37	I feel proud submitting the paper.	-.141	-.244	.576	.310
22	I feel extremely happy about the research task.	-.151	-.116	.398	.615
24	I feel excited to do research writing in class.	-.078	.054	.143	.653
26	I feel happy in doing my note cards.	.047	.000	.205	.529
33	I enjoy research writing.	-.326	.031	.281	.749
39	I enjoy writing my research paper.	-.229	-.048	.337	.693
8	I feel confident with what I am writing about.	.191	-.045	.382	.377
2	I feel excited of what is ahead of the research writing process.	-.068	-.185	.433	.424
9	I feel excited in revising my paper.	-.340	-.057	.420	.431

The literature on achievement emotion points out that achievement emotions are domain specific. In a research writing subject, there are many learning domains, including the tasks, the outcomes, and learners' interaction with other learners as they do their course tasks. It is expected that learners' emotional experiences in these domains are relatively divergent. To inspect this theoretical assumption, the four factors generated from EFA were tested for their zero-order correlations. Results, including the

descriptive statistics, are shown in Table 3. The coefficients indicate weak correlations among the four factors, which suggest that the factors may be distinct from each other.

TABLE 3

Descriptive Statistics and Correlations among the Four Factors of Emotional Experiences in Research Writing Class

Factor	<i>M</i>	<i>SD</i>	1	2	3	4
1: Negative emotions in writing tasks	3.94	.80	---			
2: Negative emotions in working with peers	3.59	.62	.32*	---		
3: Positive emotions in writing outcomes	4.72	.71	.01	.17*	---	
4: Positive emotions in writing tasks	3.53	.89	-.20*	.25*	.31*	---

* $p < .001$

Discussion

From the results, several important points are worth examining. First, because writing is a demanding process, especially for ESL/EFL learners, there are negative emotional experiences described by the learners throughout the research writing process. Some negative emotional experiences happened during the pre-writing/drafting stage (*I feel nervous in choosing the right research topic.*); some are felt during the drafting stage (*I feel tensed while writing research*), while still others could be traced during the revising/post writing stage (*I feel nervous in revising my paper*). This is supported by previous studies such as McLeod (1987, in Erkan & Saban, 2011) who argued that the affective components of writing strongly influence all phases of the writing process. It could be inferred that these negative emotional experiences in writing tasks reflect the learners' negative self-appraisals of their writing ability which in turn reflects on their self- efficacy in writing. Sadly, negative attitudes about writing tend to be self-fulfilling (Daly, 1977). Another possible reason for the negative emotional experiences reported is the learners' previous writing experiences. Past success in writing tends to build and strengthen positive emotions while the opposite is likely to happen if there was failure in writing previously.

Second, for some learners' peers are a source of negative emotional experiences. The items in this factor indicate learners' emotional experiences of being annoyed, burdened, distressed, frustrated, hesitant, sad, and uncomfortable in working with their peers. The results prove that in many cases, writing is a social and collaborative activity where one is likely to feel positive or negative emotions depending on the security he has with the skills and attributes of his partner or group mates. It would seem that the some learners in the current study do not consider their partners/classmates to be reliable enough to make a meaningful contribution in the research task, to help their partners accomplish their own part of the project, or to make decisions for the pair/group.

Third, previous studies argued that teachers need to provide positive writing experiences to promote student enjoyment (Elbow, 2000, in Daisey, 2009). In this study, this was evident in Factor 3 where items pertaining to the learners' happiness surrounding their professor's support and feedback clustered together with items related to the learners' positive emotions in writing outcomes. This result implies that the encouragement needed by the learners comes from their professor and not from their peers. Factor 3 is in fact unique because it is the only factor that covers more than one domain: it has items where the focus is on a person (professor) and items which are related to their control and value appraisals of actual and prospective outcomes of their writing tasks (object).

Lastly, learners' positive emotions come from their appraisals of success in doing their writing tasks, such as feeling happy and accomplished, as well as from their appraisals of being in control of their success, such as feeling determined and excited. These positive emotional experiences happen while drafting and revising the research paper which supports "positive feelings of writers intensify over the course of composing" (Brand & Powell, 1986, p. 283). Therefore, when it comes to how they view research writing, the learners have both negative and positive emotional experiences.

Conclusions and Implications

The present study identifies the factors of learners' emotional experiences in writing research in English which are: negative emotions in writing tasks, negative emotions in working with peers, positive emotions in writing outcomes, and positive emotions in writing tasks. These factors emphasized the unique attributes of the learners' emotional experiences in terms of valence and object focus. Both positive and negative emotions appear at each stage of the research writing process, pre-writing, during writing, post-writing, and in particular during writing tasks. With the presence of social emotions experienced by the learners from their partners and teachers, the results likewise give support to the notion that writing is a social activity.

Several implications for research writing may be drawn from the results: To lessen negative emotions in writing tasks, teachers should provide positive writing environment for the learners. This may be done in several ways: One is by clarifying important research concepts with the learners at the start of the activity to minimize their "fear of the unknown". This also allows the learners to realize the relevance of doing and writing research. At the same stage, it is also crucial to know the prior knowledge and experiences of the learners by administering some diagnostic testing to avoid repeating tasks that they have already mastered, and instead spend more time on the skills that they still need to improve. Doing so would likely increase positive emotions toward research writing tasks. Moreover, learners probably will experience positive emotions as they anticipate outcomes of the writing activities if the teachers break down the research paper writing tasks in smaller, manageable tasks with constant updating as one task is done after another proves to be helpful as it could make the demanding task more attainable given the usual time constraint in doing research.

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