TECHNICAL WRITING COMPETENCE OF THE PRE-SERVICE TEACHERS

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ABSTRACT

Writing comprises many dimensions; one of its dimensions is the technical writing. Teaching technical writing among pre-service teachers is significantly needed as preparation for on the job skills required in teaching career. This study aims to determine the level of Technical Writing Competence of the Pre-service Teachers in terms of parts, language and content; The Pre-service teachers' level of competence in technical writing; and the Pre-service teachers' level of perception on the contribution of student, school and teacher as factors in their technical writing competence and the significant relationship between the pre-service teachers' level of competence in technical writing and their level of perception regarding the different factors. The study utilized descriptive-correlation design where communicative writing test was used to find out the technical writing competence of the Pre-service Teachers. The study yielded that the pre-service teachers acquired average competency. The null hypothesis stating that there is no significant relationship between the Pre-service Teachers' level of competence in technical writing and their level of perceptions on the contribution of student, school, and teacher factors is accepted. Therefore, it is concluded that the Pre-service teachers' technical writing competence needs further enhancement, in doing so, the students, school, and teachers may consider working collaboratively to equip their skills in technical writing.

INTRODUCTION

Writing is one of the crucial skills that a learner needs to learn. Aside from its structure, the content, coherence, style and format in writing should also be learned. This skill cannot be mastered in only one setting, but it can be developed through constant practice. In using the English language, it cannot be denied that even an expert commits mistakes. Richard [1973] as cited by Dahlan [2010], states that in writing using a second or foreign language committing errors cannot be avoided. Even the native speakers themselves are not free from committing errors in writing.

However, there are teachers who are successful in their chosen field but with less mastery in their technical writing skills. But in fact, an employee will spend at least 20 percent of his or her time writing as points out by Gerson, [2013]. Most of the written works are in technical writing-letters, memos, reports, brochures, proposal, instruction and even email or web page.

Writing comprises many dimensions; one of its dimensions is the technical writing. According to Evans et al. [2010], technical writing is an act of communicating through writing. It expresses what a person thinks and feels about job, business, industry, profession and organization. Thus, it produces written output like minutes of the meeting, announcement, business letter, etc.

As a profession, teaching also demands higher degree of competence in technical writing. For this profession requires writing the reports, minutes of meetings, announcement, proposal, trip reports, and many others. Hence, the pre-service teachers are also expected to be competent in the area of technical writing so that they can effectively communicate through memos, proposal, letters and the like.

Based on the study of Magolis and Homishak [2014], teaching technical writing among pre-service teachers is significantly needed. In the technical writing skills of the future writing teachers desire more creativity and better ways of communicating course content.

In Cotabato City State Polytechnic College, it is observed that the pre-service teachers' output in technical writing like letter writing and proposal as observed by some English teachers is conditionally unsatisfactory.

Thus, the researcher finds interest on the pre-service technical writing competence as preparation for on the job skills required in the teaching career. Hence, this study is considered essential.

Objectives

This study aims to find out the level of the Pre-Service Teachers' Competence in Technical Writing and the factors that contribute to the level of their performance in technical writing.

Specifically, it seeks to answer the following sub-problems:
1. What is the pre-service teachers' level of competence in technical writing in terms of;
      1.1 parts,
      1.2 language, and
      1.3 content?
2. What is the pre-service teachers' level of competence in technical writing?

3. What is the pre-service teachers' level of perception on the contribution of student, school and teacher factors in their technical writing competence?

4. Is there a significant relationship between the pre-service teachers' level of competence in technical writing and their level of perception regarding the different factors?

Hypothesis

      The null hypothesis was tested at the 0.05 level of significance:
      Ho 1. There is no significant relationship between the pre-service teachers' level of competence in technical writing and their level of perceptions on the contribution of student, school, and teacher factors in their technical writing competence.

Theoretical Framework

      This study is anchored on the different theories. Bandura [1961] in his theory of Social Learning as published by Mcleod [2011] updated in [2016], stated that "Children pay attention to some of these people (models) and <u>encode</u> their behavior. At a later time they may imitate (i.e. copy) the behavior they have observed." In connection to technical writing, students can learn model through imitating or observing (i.e. copy) it first. This is also agreed on the theory of Operant Conditioning of Skinner [1938], he believed that "we do have such a thing as a mind, but that it is simply more productive to study observable behavior rather than internal mental events."Skinner is regarded as the father of Operant Conditioning, but his work was based on <u>Thorndike's [1905] law of effect</u>. He introduced a new term into the Law of Effect - Reinforcement. Behavior which is reinforced tends to be repeated (i.e. strengthened); behavior which is not reinforced tends to die out-or be extinguished (i.e. weakened).

      In teaching technical writing, various approaches and methods are taken up but Communicative Language Teaching (CLT) or the Communicative Approach may be suggested in teaching technical writing. This adheres to Ionescu, [n.d.] study on "A communicative Approach in Teaching Writing." She stated that in order to reinforce the communicative approach, students are encouraged to take advantage of all kinds of life occasions for writing, from short messages to each other and their teachers or apologies, to initiate arrangements for meetings and business letter reports and essay writing. The communicative way of teaching writing develops the student's self-confidence to succeed in professional and social encounters within an English-speaking global community.

      There are some arguments that teaching technical writing is individually focused or collaboratively. Writers naturally write alone and that, as Ong [1975] argued that "the writer's audience is always a fiction," they would happily seclude themselves in their study or carrel. If students write alone, they may write ideas and goals. According to Cooper [1986] on his book "The Ecology of Writing" College English 48, the escape of solitary author from the social world leads him to see ideas and goals as originating primarily within himself and directed at an unknown and largely hostile other. However, some authors disagreed on this concept. Bruffee [1984] emphasized the importance of social or collaborative learning context. He praises collaborative learning as a means of helping students writers escape the inevitable solitariness of writing, whose self-imposed isolation is often seen as particularly troubling for beginning writers. In addition, Collaborative learning in writing is associated with the Social Constructivism of Vygotsky [1986]. In his book "Mind in Society" he states that social interaction and cultural contexts play a vital role in the development of the cognition of learners. Cognitive constructivism and social constructivism are the two main strands of constructivist approach. While cognitive constructivism is based on how individuals understand things and construct knowledge

discovered through interactions with the environment, social constructivism believes that learning takes place through social interaction, dialogues and collaboration.

METHODOLOGY

Research Design

The study used the descriptive-correlation method to find out the Technical Writing Competence of the Pre-Service Teachers of Cotabato City State Polytechnic College during the school year 2016-2017. The students' competence in writing business letter, minutes of meeting and announcement was also described based on the rating given by the two (2) raters. The different factors such as student, school, and teachers' factors were determined through the use of the aforementioned research design.

Subject and Sampling of the Study

This study was conducted at Cotabato City State Polytechnic College, Sinsuat Avenue, Cotabato City. The subjects of the study were the 20 English pre-service teachers of the Cotabato City State Polytechnic College. They were chosen using Random Sampling Technique.

Research Instrument

The study utilized a researcher-made communicative writing test to assess the technical writing of the pre-service teachers on business letter, minutes of meeting and announcement with an authentic task given. And a validated survey questionnaire to determine the student, school and teacher factors that contribute to the technical writing competence of the pre-service teachers.

Statistical Treatment of Data

The study used the descriptive statistics particularly the weighted mean to answer problems 1, 2and 3.

To answer sub-problem 4, the Pearson's Product Moment Correlation was used to find out whether the relationship between students' competence in technical writing and the factors associated with it is significant or not significant at 0.05 level.

On the other hand, the scores of the Pre-Service teachers in writing business letter, minutes of meeting and announcement were rated using the 5-point scale below.

Score Rating	Description
5	Very High
4	High
3	Average
2	Low
1	Very Low

In the sub-problem 3, the rating scale below was used.

Rating Scale	Description
4	Strongly Agree
3	Agree
2	Disagree
1	Strongly Disagree

In the interpretation of the average ratings, the following cut-off points were also used:

Score Range	Description
4.50-5.00	Very High
3.50-4.49	High
2.50-3.49	Average
1.50-2.49	Low
1.00-1.49	Very Low

Formula

$$\overline{X_W} = \frac{\sum fx}{n}$$

Figure 1. Weighted Mean

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y)^2]}}$$

Figure 2. Pearson's Product -Moment Correlation

The above formula were used to evaluate the weighted mean of level of technical writing competence of the pre-service teachers and the significant relationship of the student, school and teacher factors as contribution to their technical writing competence.

RESULTS AND DISCUSSION

Table 1. Pre-Service Teachers' level of Competence in Business letter, Minutes of Meeting and Announcement

Technical Writing	Writing Area	Area Mean	Description
Business Letter	Parts	3.10	Average
	Language	3.00	Average
	Content	2.65	Average
Minutes of Meeting	Parts	3.02	Average
	Language	2.70	Average
	Content	2.65	Average
Announcement	Parts	3.05	Average
	Language	3.02	Average
	Content	2.88	Average

The Pre-Service Teachers took a Communicative Writing Test that measured their Technical Writing Competence. These writing tests are Business letter, Minutes of Meeting and Announcement test. These tests were rated based on Parts, Language and Content.

The pre-service teachers' level of competence in technical writing in the different aspects of business letter falls in the average level in terms of parts with an area mean of 3.10 labeled as average, in terms of the use of appropriate language the pre-service teachers' level of competence is also average with an area mean of 3.00 described as average, and in content their competence level is also average with 2.65 area mean. This means, in totality, the level of competence in writing business letter, minutes of meeting and announcement in terms of parts, language and content has minimum competency as justified by their satisfactory score in the communicative writing test in which all the writing area have shown the description of average. The data suggest that the Pre-Service teachers still need reinforcement for provision of varied communicative writing tasks that can enhance their writing skills. Doing so helps the Pre-Service Teachers improve their communication skills: a crucial Technical writing skill, since it is useful after their education in

the field of job. Teaching technical writing effectively, according to Gerson [2013], it is necessary so students will know the types of documents they will write on the job. In addition, we should prepare them for what comes next- their jobs.

Table 2. Pre-Service Teachers' level of Competence in Technical Writing

Technical Writing	Grand Area Mean	Description
Business Letter	2.92	Average
Minutes of Meeting	2.79	Average
Announcement	2.98	Average
Overall Technical Writing Competence	2.90	Average

Considering the three (3) technical writing write-shop, the pre- service teachers' level of competence in writing business letter is average with the grand mean of 2.92, in writing minutes of meeting their level of competence is also average with a grand mean of 2.79 described as average, and in writing announcement, their level of competence is also average with a grand mean of 2.98. The pre-service teachers' level of competence in technical writing is average with the overall area mean of 2.90. It shows that majority of the Pre-Service Teachers acquired average competency on in technical writing. Thus, the data suggest reinforcement to the Pre-Service Teachers who demonstrated average performance in this area. To achieve such a development, they need to master more of the parts, language and content of a technical writing since technical writing is used in practical way and future use. Igoy et.al [2004] emphasized that technical writing must be centered on communicative situations that are likely to be encountered by the students as they enter the world of work. So, it is necessary to technical students to develop their basic language skills for practical use and Egipto [2011] asserted that the knowledge on technical writing shall bring an individual closer to the future job endeavors.

Table 3. Pre-Service Teachers' Level of Perception on the Contribution of Student as a Factor in their Technical Writing Competence

Item	Weighted Mean	Description
1. Find writing interesting.	3.75	Strongly Agree
2. Spend leisure time in writing.	3.55	Strongly Agree
3. Find fulfillment through expressing feelings through writing.	3.75	Strongly Agree
4. Submit entry in school publication.	2.75	Agree
5. Study the correct use of punctuation marks to write effectively.	3.65	Strongly Agree
6. Proofread and edit my written works.	3.65	Strongly Agree
7. Conscious of an appropriate word to be used in writing.	3.55	Strongly Agree
8. Study the different parts of writing a letter.	3.75	Strongly Agree
9. Study grammar rules to write effectively.	3.75	Strongly Agree
10. Appreciate the classroom activity like writing a letter.	3.75	Strongly Agree
Overall Weighted Mean	3.59	Strongly Agree

Reflected in the table is the Pre-Service Teachers' Level of Perception on the Contribution of Student as a Factor in their Technical Writing Competence. The table shows that the item 1 got the weighted mean of 3.75 with the description of strongly agree. Item 2 has obtained the weighted mean of 3.55 described as strongly agree. Another weighted mean of 3.75 is obtained by item 3 which also described as strongly agree. Item 5 has weighted mean of 3.65 described as strongly agree. Item 6 has also obtained a weighted mean of 3.65 described as strongly agree. For item 7, it has a weighted mean of 3.55 described as strongly agree. Items 8 and 9 have weighted mean of 3.75 respectively which fall in the description of strongly agree. And similarly, item 10 has obtained a weighted mean of 3.75 also described as strongly agree. Among the 10 items only item 4 has obtained a weighted mean of 2.75 described as agree. In the study, the pre-service teachers have very high levels of consideration that they themselves are factors in achieving a good technical writing competence as indicated by the overall weighted mean of 3.59 described as strongly agree. The data show that the pre-service teachers perform well in some of factors. Thus, the data suggest thorough reinforcement to the pre-service teachers for them to improve their writing competence, perform a task and write effectively. Inok-Adao [2015] suggested that Communication through writing can enrich the vocabulary of students, and familiarize them with a

simple style of writing. It also stimulates and forces them to think that gives them opportunities to improve their writing abilities.

Table 4. Pre-Service Teachers' Level of Perception on the Contribution of School as a Factor in their Technical Writing Competence

Item	Weighted Mean	Description
1. Free from noise	3.35	Agree
2. Have well-ventilated classrooms	3.10	Agree
3. Have well-lighted classrooms	3.60	Strongly Agree
4. Offers availability of reference books	3.60	Strongly Agree
5. Offers availability of newspapers	3.55	Strongly Agree
6. Offers library services like the EMC	2.75	Agree
7. Provides remedial writing sessions	3.00	Agree
8. Includes technical writing in the College of Education curriculum	3.50	Strongly Agree
9.Conducts In-campus seminar-workshop for technical writing	3.35	Agree
10. Sends students to seminar-workshop on technical writing	3.40	Agree
Overall Weighted Mean	3.32	Agree

Reflected in the table is the Pre-Service Teachers' Level of Perception on the Contribution of School as a Factor in their Technical Writing Competence. The Table 4 shows that the items 3, 4, 5 and 8 have the same description of strongly agree with the weighted mean of 3.60, 3.60, 3.55 and 3.50. On the other hand, Items 1, 2, 6, 7, 9 and 10 with the mean of 3.35, 3.10, 2.75, 3.00, 3.35 and 3.40 have the descriptions of agree. Considering all the weighted mean, Table 4 reflects an overall weighted of 3.32 categorized as agree. This implies that the school needs more program to offer for the pre-service teachers perform well especially in writing. Therefore, acquiring the writing skills, according to Zheng (2009), seems to be more laborious and demanding than acquiring the other skills. To have effective communication skills especially in writing, it should be tailored to the needs of various groups of students in the technical field.

Table 5. Pre-Service Teachers' Level of Perception on the Contribution of Teachers as a Factor in their Technical Writing Competence

Item	WeighteMean	Description
1. Provides us activities to write business letter	3.50	Strongly Agree
2. Presents us samples of announcement	3.45	Agree
3. Discusses the parts of an announcement	3.30	Agree
4. Discusses the parts of business letter	3.50	Strongly Agree
5. Explains the appropriate language used in writing business, announcement and minutes of meeting	3.35	Agree
6. Presents the parts of the minutes of meeting	2.60	Agree
7. Trains us to write samples of announcement	2.85	Agree
8. Trains us to write minutes of the meeting	3.60	Strongly Agree
9. Explains the characteristics of a good business letter	3.50	Strongly Agree
10. Explains the grammar rules necessary in writing	3.55	Strongly Agree
Overall Weighted Mean	3.32	Agree

It can be gleaned in Table 5 that items 1, 4, 8, 9 and 10 have weighted mean of 3.50, 3.50, 3.60, 3.50 and 3.55 which are all described as strongly agree. Furthermore, items 2, 3, 5, 6 and 7 have weighted mean of 3.45, 3.30, 3.35, 2.60 and 2.85 which fall of the description of agree.

Generally, Table 5 has an overall weighted mean of 3.32 labeled as agree. The results consider the teacher factors to have high level to the technical writing competence of the pre-service teachers. Since teachers have big factors in improving the skills of the pre-service teachers especially the technical writing, the data recommends that the teachers according to Igoy et.al [2004] should serve as guide on what specific information should be imparted and what communicative skills should be developed for a particular group of students.

Table 6. The Association between the Pre-Service Teachers' Level of Competence in Technical Writing and Their Level of Perceptions on the Contribution of Student, School, and Teacher Factors in Their Technical Writing Competence

Paired Variable	Computed r-Value	Description
1.Writing Business Letter and Student Factor	-0.328	Not Significant
2.Writing Business Letter and School Factor	-0.311	Not Significant
3.Writing Business Letter and Teacher Factor	-0.139	Not Significant
4.Writing Minutes of Meeting and Student Factor	-0.092	Not Significant
5.Writing Minutes of Meeting and School Factor	-0.232	Not Significant
6.Writing Minutes of Meeting and Teacher Factor	-0.303	Not Significant
7. Writing Announcement and Student Factor	-0.580	Significant
8. Writing Announcement and Student Factor	-0.299	Not Significant
9. Writing Announcement and Student Factor	-0.063	Not Significant

Legend: Computed r-Value to be significant at 0.05 level should be at least ± 0.444

The results of the study show that when the relationship of the pre-service teachers' writing competence level is correlated to the identified factors as perceived by the students. The results are as follows: in writing business letter, the pre-service teachers perceived student factors, school factors, and teacher factors to be not significant related as shown in the computed r- values of -0.328 for student factors and writing business letter, an r- value of -0.311 for writing business letter and school factor, and an r- value of 0.139 in writing business letter and teacher factor. In writing the minutes of the meeting, the pre-service teachers also perceived the students, school factors, and the teacher factors to have no bearing to their competence level in writing minutes of the meeting as indicated in the r- values of 0.092 classified as not significant for student factors, -0.232 for school factors, and 0.303 for teacher factors. In writing announcement, the student factor is perceived to be significantly related with the students' writing competence with an r- values of 0.580 described as significant. The school factors are perceived as not significantly related to students' writing competence with an r- computed value of -0.299, and the teacher factors are also perceived to be not significantly related as shown in the r- computed value of -0.63 also described as not significant. On the basis of the above discussion, except for hypothesis number 7 claiming no significant relationship between the pre-service teachers' level of competence in technical writing and their level of perceptions on the contribution of student, school, and teacher factors in their technical writing competence which was rejected, all the rest of the hypotheses previously stated were accepted.

CONCLUSION

Based on the findings of the study, the researcher concluded that the pre-service teachers' technical writing skills need further enhancement, in doing so, the students, school, and teachers may consider working collaboratively to enhance the pre-service teachers' competence in technical writing.

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