

An error analysis and evaluative study of the technical writing skills of B.Sc. (Agri.) students

Dr. K Thangaraj

Assistant Professor of English, Tamil Nadu Agricultural University (TNAU), Anbil Dharmalingam Agricultural College & Research Institute, Tiruchirappalli, Tamil Nadu, India

Abstract

In continuation of the university sub project “An evaluative approach to enhance the technical writing skills of B.Sc. (Agri.) students,” a study on Error Analysis (EA) and the results on the impact of remedial exercises were taken for study. The samples for pre evaluation are the fifth semester mid semester written exam answer scripts of third year agricultural graduates and the sixth semester answer scripts for post evaluation study. All the 96 samples were collected through stratified random sampling method. None of the students in the class is omitted from this study. Everyone is included for pre as well as post evaluation. Pre evaluation study was undertaken to assess their erroneous zones in technical writing skills. In the next level, remedial exercises with 19 modules were prepared and distributed to them by focusing at the weak spheres of the students based on the pre evaluation. Finally post evaluation was carried out to assess the impact and the results are presented in this paper.

Keywords: technical writing skills, impact study, remedial exercises, error analysis

Introduction

As English is the most prominent international language for education, research and publication work, sufficient attention has to be paid to the technical writing skills, and in general, to the communicative aspects in English. Written communication is a major component in higher education, especially for professional degree students to submit different forms of scientific papers in partial fulfilment of their degree programme. Grammar, sentence construction and clarity of ideas in simple language are the essential parts of any technical communication. The writing skills of the students of Agriculture, of Natural Resources and other allied subjects are tested in the forms of Seminar, Assignment presentation and Term papers as these kinds of research activities help the scientific writers to share their knowledge and experience with their fellow scholars worldwide.

Error free writing in any scientific presentation is a must, especially when scientific ideas are presented in a forum, either in the form of an assignment, record work, dissertation or thesis. The art of clear writing in error free language is an integral part of any scientific writing. The right selection of lexis, error free syntax and clear semantics are the essential components of scientific writing. Unless the writer identifies the weak areas of scientific communication he can't improve his writing better for which EA helps to retrospect the standards of the writer.

In order to evaluate the technical writing skills of the agricultural graduate students of TNAU (Tamil Nadu Agricultural University) a university sub project was undertaken to study the technical writing skills of III B.Sc. students. After pre evaluation remedial exercises were offered online and their impact was assessed in the post evaluation study. As 96 students from third year have appeared for the mid semester examination, 19 records of five different subjects were selected in order to avoid subject bias and one more record was chosen from a subject to make the sample 96 to ensure everyone was included for the study. As the records for the study were available in a good order, systematic random sampling was

adopted to collect the samples. The focus of this study is third year students because they are introduced courses in basic sciences and basic agricultural subjects in the first two years, and they become familiar with the technical terms and writing after the completion of their second year.

Background of the study

Corder (1967) ^[7] and his Fellows developed the study in the area of EA (Error Analysis) in Second Language Acquisition (SLA) during 1970s that made them realise that the reason for error occurrence was the influence of L1 on L2. His article “The significance of learner errors” (1967) changed the conventional outlook on acquiring second language insisting “systematically analyzing errors made by language learners makes it possible to determine areas that need reinforcement in teaching.” Corder breaks through EA with twin objects of theory and application work. The theoretical object is to realize what and how a learner learns when he studies an L2. The applied work focuses at the learner's ability to apply the knowledge of his L1 to enhance his learning of L2. A learning experience of L1 and L2 are not contradictory to each other, but complementary. As Corder feels that the diagnostic study of the errors indicates the learner's ability to express his usage of language during the learning process and the prognostic study indicates to the teacher the necessary changes to be made in the learning material to meet the requirements of the learners.

Relevance of the study

Acquiring a language skill in a foreign language is a growth process during which errors are inevitable but the graduates of scientific community are ought to be error free in their expression. The errors in their spoken and written expression are the visible proof that learning is taking place. Corder (1967) ^[7] believes that when errors are studied systematically, it can provide significant insights into how a language is really learned by an L2 learner. An analytical study of the errors committed by students acts as a complementary form for the

mutual benefits of the learner and the teacher. While it enlightens the students on the correct usage of language, it acts as a feedback for the teacher to improve his future course of action.

While committing errors are natural, helping the learners to get rid of them becomes essential for the teacher, and it is also a natural process. The teaching strategy and the exercises should help the learner to minimise the errors (particularly the negative intervention of L1) while acquiring L2. Again the teachers must pay attention to remedial exercises as these exercises not only set right the deviation from right usage but consolidates the learner's faith in his study of L2.

Many agricultural graduates go to pursue their higher studies in national and international premier institutes and naturally they are under the constant pressure of publishing their project work, undertaken in their final year as a partial fulfilment of their degree programme and its results and findings in a journal for their career prospects and professional recognition. Getting their work published is a way to meet their professional goals and to get academic recognition. Hence error free writing becomes very important to the agricultural and natural science students. In this connection, it can be said that the syllabus designers can accept the two tier objective of teaching learning process as given in the graphic representation.

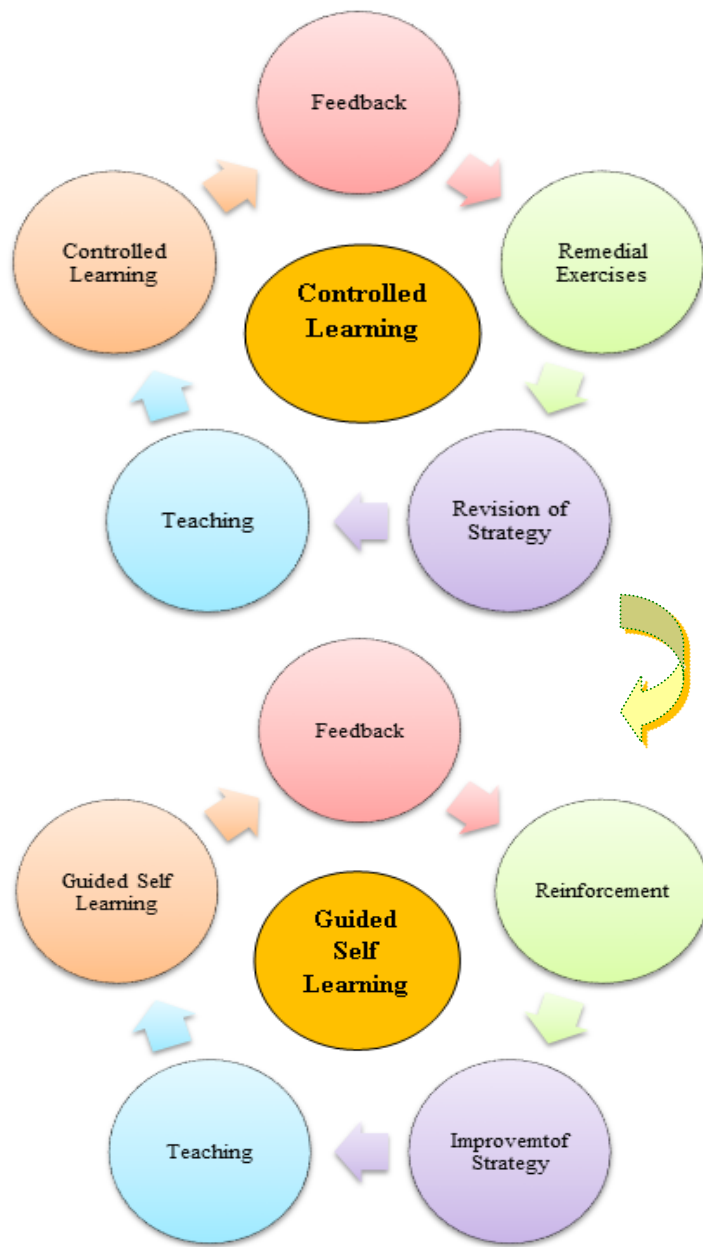


Fig 1

Materials and Methods

The process has the three stage objective of error analysis of technical writing of agricultural graduate students, application of suitable remedial exercises and the study of post evaluation. For the pre evaluation study, 96 samples (written answer

scripts) of the mid-semester exam of fifth semester students were collected through systematic stratified random sampling method. The answer scripts of the following five technical courses were selected to assess the existing cognition in technical writing skills at their entry behavioural level.

Table 1

S. No.	Course No.	Course Title	Credit hours (Theory + Practical)
1.	SAC 301	Crop and Pesticide Chemistry	(2+1)
2.	PBG 301	Principles and Methods of Plant Breeding	(2+1)
3.	AEC 301	Production Economics and Farm Management	(2+1)
4.	ABT 301	Applied Plant Biotechnology	(2+1)
5.	FPE 301	Post Harvest and Food Engineering	(2+1)

After carefully studying the mid semester written answer scripts of 96 samples from the above five courses, list of errors were

classified based on their performance in written communication and the errors identified are listed below.

Table 2

S. No	Error components	No. of students committed error	% of error
1	Adjective	2	0.60
2	Adverb	3	0.90
3	Article	29	8.73
4	Broken Sentences / Sentence Structure	28	8.43
5	Concord	35	10.54
6	Conjunction	8	2.41
7	Deg of Comp	7	2.11
8	Gerund/ Infinitive	11	3.31
9	Indianism	18	5.42
10	Preposition	26	7.83
11	Pronouns	7	2.11
12	Punctuation	27	8.13
13	Rudendency	1	0.30
14	Unauthorised Shortened Forms	48	14.46
15	Singular Plural	1	0.30
16	Spelling	12	3.61
17	Tense	17	5.12
18	Verb	37	11.14
19	Voice	9	2.71
20	Error Free	6	1.81
	Total	332	100

Findings of the pre evaluation study

The 19 constituents shown in the above table are essential for the technical composition. Remedial exercises were prepared and forwarded to the students for the above components. From the pre evaluation study the following five error prone components stood glaring and they are:

1. Unauthorised Shortened Forms (14.46%)
2. Unclear Usage of Verbs (11.14%)
3. Inadequate exposure to Concord (10.54%)
4. Vague knowledge of Articles (8.73%)
5. Being prone to Broken Sentences (8.43%)

More emphasis was laid upon the above error prone components while preparing the remedial exercises and the students were motivated to overcome the above said errors through intervention.

Intervention and Post evaluation

The special remedial exercises prepared to overcome the listed errors were posted to the target students online at regular intervals through a specially created google group. The students were advised to interact with the exercises and the teacher. They were also guided to discuss the exercises among themselves. The post analysis has shown that the efforts of the project leader have yielded desirable results in the following areas of technical writing.

- Punctuation
- Conjunction

- Intervention of L1 on L2
- Numbers

Results of Pre and Post Evaluation

Table 3

Error Components	Pre evaluation	Post evaluation
Punctuation	27	7
Tense	17	14
Conjunction	8	2
Spelling	12	13
Preposition	26	20
Adjective	2	3
Broken Sentences	28	28
Pronouns	7	8
Indianism	18	12
Verb	37	32
Concord	35	36
Gerund/ Infinitive	11	14
Shortened form	48	39
Article	29	21
Deg of Comp	7	4
Voice	9	12
Singular Plural	1	11
Rudendency	1	2
Adverb	3	2
Total Errors	326	280

Significance Analysis of Pre and Post Evaluation

Table 4

Variables	Pre Evaluation	Post evaluation	Difference	Significance
Punctuation	0.26	0.04	0.22	0
Tense	0.17	0.14	0.03	0.56
Conjunction	0.08	0.02	0.06	0.052
Spelling	0.12	0.13	-0.01	0.832
Preposition	0.26	0.2	0.06	0.316
Adjective	0.01	0	0.01	0.319
Broken Sentences	0.28	0.28	0	1
Pronouns	0.07	0.08	-0.01	0.79
Indianism	0.19	0.06	0.13	0.005
Verb	0.37	0.32	0.05	0.46
Concord	0.35	0.36	-0.01	0.883
Gerund	0.11	0.14	-0.029	0.541
Shortened Forms	0.48	0.39	0.09	0.201
Articles	0.29	0.21	0.08	0.193
Degrees of Comparision	0.07	0.03	0.04	0.196
Voice	0.06	0.12	-0.06	0.14
Number	0.01	0.11	-0.1	0.003
Redundancy	0.01	0.02	-0.01	0.563
Adverb	0.03	0.02	0.01	0.653

Results and Discussion

A comparative study of pre and post evaluation indicates that the target students has shown a significant progress in the usage of

1. Punctuation
2. Conjunction
3. Reduction of Negative Influence of L1 on L2.
4. A moderate progress is seen in the usage of contracted forms, articles, degrees of comparison, and significantly in the usage of English verb structure.

The reasons for such a progress may be that these topics of English grammar except verb, are comparatively easy to study and understand. The students have shown a progress in the

usage of verb surprisingly and it may be due to the impact the remedial exercises have created on them.

The other prime areas of grammar like Tense, Voice, Adjective, Adverb, Concord, Preposition and the rules of spelling are comparatively difficult to be internalised. What the target students could not do over a period of nearly 8 years cannot be done in a very short period of one semester and that too in the absence of a face to face interaction between the teacher and the student. The students did show progress in these areas but it is not so significant. It is interesting to note that the number of students who wrote error free English was 6 during the pre evaluation stage. This number has gone up to 19 after the practice of remedial exercises.

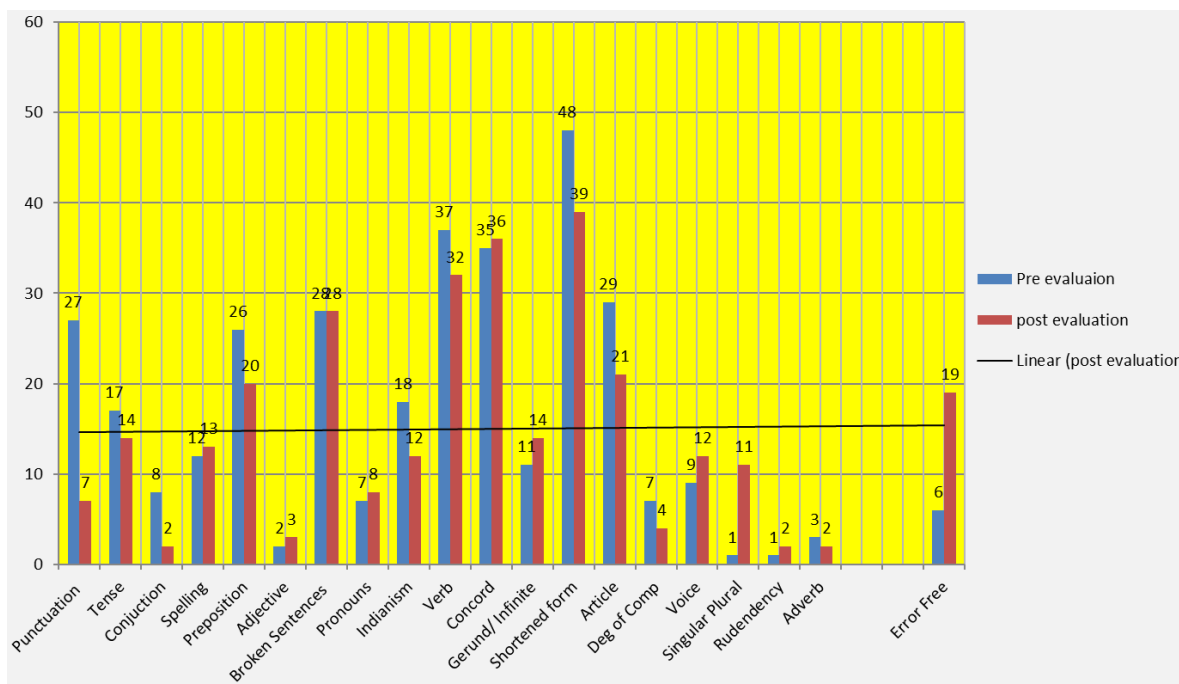


Fig 2: Comprehensive Graphic Representation of Pre and Post Evaluation

Conclusion

The project doesn't find any significant variation as far as the students' usage of the premier areas of English grammar viz. Tense, Voice, Preposition, Verb structure, Concord, Spelling, Articles and the usage of shortened forms is concerned. This may be due to

1. The non-inclusion of prime focus on these areas in school days.
2. Absence of face to face interaction in the class room.
3. Inadequate attention of the target students to the remedial exercises.
4. The overshadow caused by their subjects on language.

In spite of the above bottlenecks, the percentage of error free writing has increased from around 2 to 18. It is the indication that a comprehensive Bridge Course in English can bring about the desired results. It was recommended to the university to incorporate the following technical writing components while designing syllabus for the next academic year.

- Usage of Tense and voice in scientific writing
- Usage of Pronouns and Numbers in scientific writing
- Usage of Punctuation and Concord in scientific writing
- Students may be advised to avoid using contracted forms and symbols (like /, &) and Indianism (eg. over usage of only, then only, then, means, nothing but, mainly, actually, very very useful etc.)

References

1. Abushihab, Ibrahim. An Analysis of Grammatical Errors in Writing Made by Turkish Learners of English as a Foreign Language. *International Journal of Linguistics*. 2014; 6(4):213-223. ISSN.
2. Ancker W. Errors and corrective feedback: Updated theory and classroom practice. *English Teaching Forum*. 2000; 38(4):20-24.
3. Anderson, Jonathan, Millicent Poole. *Assignment and Thesis Writing*. New Delhi: Wiley India. Pvt. Ltd. 2011.
4. Brown C. *The interrelation between speech perception and phonological acquisition from infant to adult*. Great Britain: Blackwell Publishers Limited. 2000.
5. Brown HD. *Principles of language learning and teaching* (5th ed.). New York: Longman. 2007.
6. Candling RB. *Vocabulary and language teaching*. New York: Longman Inc. 2001.
7. Corder SP. The significance of learners' errors. *International Review of Applied Linguistics*. 1967; 5(4):161-169.
8. Darus, Saadiyah, Kaladevi Subramaniam. Error Analysis of the Written English Essays of Secondary School Students in Malaysia: A Case Study. *European Journal of Social Sciences*. 2009; 8(3):483-495.
9. Ellis R. *Second language acquisition research and language teaching*. Oxford: Oxford University Press. 1996.
10. Gagarina G, Gulzow I. *The acquisition of verbs and their grammar: The effect of particular languages*. Germany: Springer. 2008.
11. Harmer J. *How to teach English*. London, UK: Pearson Education Limited. 2007.
12. Krishnasamy, Jothimalar. Grammatical Error Analysis in Writing of ESL Diploma Students. *Asian Journal of Education and e-Learning*. 2015; 03(01):51-60. (ISSN: 2321 – 2454)
13. Nemser W. Approximate systems of foreign language learners. In Richards, J. (Ed.). *Error analysis: Perspectives on second language acquisition*. Essex: Longman. 1974, 55-63.
14. Ramachandran Nair PK, Vimala Nair D. *Scientific Writing and Communication in Agriculture and Natural Resources*. Springer, New York. 2014.
15. Richards, Jack C. *A No n-Contrastive Approach to Error Analysis Error Analysis: Perspectives on Second Language Acquisition*.
16. Stjernquist, Nils. *Nog är det värt att satsa på god forskning och utbildning*. Lund: Speech at Tetradagarna. Quoted in the art of writing & speaking by Jakob Gustavsson and Maria Hedlund, Lund University. 1983-2011.
17. Thangaraj K. A Study of the Technical Writing Skills of B.Sc. (Agri.) Graduate Students at Pre Project Implementation Stage. *International Journal of English Language, Literature in Humanities*. 2017; 5(6):349-360 (ISSN: 2321-7065).
18. Todd L. *Using cloze tests to assess the reading needs of EAL learners*. 2008. Online: esolonline.tki.org.nz/content/download/15719/109322/file/Using+Cloze+Tests.pdf
19. Weireesh S. How to analyze interlanguage. *Journal of Psychology & Education*. 1991; 9:113-22.