Reducing Thai High School Students’ Writing Apprehension by Exploiting An Instructional Model Based on Vygotsky’s Scaffolding Techniques

Sutthiwon Manphonsri¹, Philanut Phusawisot² and Kantaphon Samdaengdej³

ABSTRACT

The purposes of this study were to investigate whether the instructional model designed is effective in reducing the students’ writing apprehension before and after via scaffolding techniques. The target group consisted of 30 Matthayom Suksa five students enrolling reading and writing English course, in the second form of writing ability and a questionnaire for assessing the student’ satisfaction towards the use of writing process by using Vygotsky’ s scaffolding techniques. The statistics used for analyzing data were mean,

¹ Master’s Degree Student (English) the Faculty of Humanities and Social Sciences, Mahasarakham University
² Ph.D (Language Education) the Faculty of Humanities and Social Sciences Mahasarakham University
³ Ph.D (Linguistics and English Language) the Faculty of Humanities and Social Sciences Mahasarakham University

Received 21 April 2012 Accepted 30 May 2012
semester of the academic year 2011 at Thatnaraiwittaya School, Sakon Nakhon Province. The instruments employed in this study were: 4 lesson plans; each lesson spent 6 hours (24 sixty-minute periods). The instruments of the study consisted of: an ability in English writing evaluation form, an apprehension evaluation standard deviation, and t-test.

The results of the study were as follows:

1. The overall of the students’ writing apprehension decreased after having been taught by writing processes through scaffolding techniques.

2. The students' writing apprehension before and after implementing scaffolding techniques was higher continually.

3. The students’ satisfaction towards the instructional model designed through Vygotsky’s scaffolding techniques was at a high level.

**Keywords:** Writing Apprehension, Writing Skill through Scaffolding Techniques, English Writing Ability Assessment, Satisfaction

**INTRODUCTION**

Writing Skills are difficult for students to develop because they need preliminary knowledge before starting to write a piece, let alone produce a quality finished product straight away. It is difficult when students wish to use appropriate lexicons, grammatical structures and styles.

From what has been observed, a number of teachers at Thatnaraiwittaya School, including the researcher focused on the grammatical errors, cohesion, length, and the language use when they taught writing. We mostly asked students to write sentences and short single paragraphs.

Moreover, they assessed the content, organization, vocabulary, language use, and mechanics only. When practicing composition writing, students were involved in imitating the model texts. They did not think about the genre, purpose or the audience of writing.

Most teachers also found that correcting students’ composition was useless and time-consuming. In the researcher’s personal opinion, this may not enhance development of the writing skills. It benefits only the students’ cognitive domain but ignores the psychomotor and affective domain in particular.

This cause and effect is obviously evident on the students’ ability in writing. Due to the theory of writing apprehension of John Daly and Michael D. Miller (1975b), the writer’s behavior attitude and writing product relate with each other. The high apprehensive writers would express some negative behaviors in writing; for example, they would avoid doing writing work, ignore a composition course, and produce short or inefficient writing works.

Therefore, to improve the students’ writing competence, the research views that teaching and learning of foreign language writing should be accompanied with the students’ affective factors. This study would be beneficial in finding the ways to relieve the students’ foreign writing apprehension, and hopeful develop their writing ability.
**Purposes of the Study**

The aims of the study were: (1. to investigate whether or not the instructional model designed is effective in reducing the students’ foreign language writing apprehension, (2. to investigate the students’ writing abilities after studying by using the instructional model, and (3. to examine whether or not the students have positive satisfactions toward the instructional model.

**Research Questions**

According to the aims of the study, the research questions are as follows: (1. is the model designed effective in reducing the students’ foreign language writing apprehension? If so, how? , (2. what are the students’ writing abilities toward the instructional model designed? and (3. What are the students’ satisfactions toward the instructional model designed?

**Scope of the Study**

The subjects are Matthayom Suksa 5 students who will be enrolled in Reading and Writing English 2 (E32204) as a required subject in the second semester of the academic year 2011. These are purposively selected to participate in this study.

**Research methodology**

The present study would employ Action Research design to address the investigation. There were three main reasons for selecting this specific methodology. First, in this study, the emphasis is on the research itself so that the relevant theories could be expanded and, then, based on the problems found later, ‘action’ can be implemented to solve the problems found. Second, the problems occurred in action research can be put into practice straight away and there seems to be no delay between the study completion and the implementation of the solution (Streubert & Carpenter, 1999). Third, and the most important, this type of research design is commonly used in educational settings to bring positive changes or enhance practice (Gall & Borg, 2005; Johnson, 2005; Schmuck, 2006). Involving teachers and educators to study their classroom problems and issues has become an important direction for education renewal today (Creswell, 2005, 2008).

Diagram 1 Adapted from Coats (2005, p.5)

In cycle one, the scaffolding and writing process would be utilized to treat the subjects according to the designed instructional model, the students were going to learn in group helping one another. The more capable learner would facilitate and help the less capable learners. The researcher would observe to document any problems in the classroom and then provided useful suggestions. In cycle two, the solutions would be conducted in order to solve the problems.
Population

The population of the study was 60 Mattayom Suksa 5 students at Thatnaraiwittaya School Sakon Nakhon Province who had registered English Reading and Writing course (E32204). Most of these participants have been learning English for about 6 years. According to the teacher who has taught these students in the previous course, they were weak in writing. They needed clear directions and assistance from peers and teachers with particular reference to appropriate vocabulary, grammar, steps of writing, and techniques to help them write better. They had some background knowledge in paragraph writing from the previous course. The participants are 17 years of age.

Subjects of the study

The participants are 30 students selected by purposive sampling based on the total scores gained from completing an apprehension test (questionnaire) and the interview of the teacher who taught this course the previous semester. All of the participants took Fundamental English 2 in the second semester of the academic year 2011. The research would allow them to choose participants with 3 different learning abilities in their group: low, average and high. Their previous year’s grade would serve as a baseline to classify their abilities.

Research Instruments

Lesson plan

The four lesson plans focusing on the writing skill were developed by the researcher. Each lesson plan explained the activities of the 5-stage writing processes through scaffolding techniques and the scoring rubrics for assessing students’ scoring profile. The lesson plans were accredited and approved by the experts. The research was analyzed by mean value and standard deviations the experts’ notions.

Satisfaction Questionnaire

The satisfaction questionnaire was developed by the researcher in order to assess the satisfaction of the students towards the process and product strategies used in their composition writing. The items in the questionnaire covered every activity through the 5-stage writing process toward scaffolding techniques. The questionnaire was checked by the advisor and co-advisor. The reliability of every item in the questionnaire was 0.20. And as a whole questionnaire used Alpha Coefficient of Cronbach was 0.98.

Rubrics

Scoring rubrics were used to assess students’ product scoring profile when using the writing process toward scaffolding techniques. The scoring rubrics used in this study explained the details of each score to help the observers assess the students’ performance objectively rather than too subjectively. The scoring rubric was used for students’ paragraph writing. The aspects assessed were content, organization, vocabulary, language use, and mechanics. There were four levels in each rubric: 5 is excellent, 4 is good, 3 is fair, and 2 is poor. This product scoring profile was adapted from ESL Composition Profile (Jacobs et al. 1981). The product scoring profile was checked by the experts.

Data Collection

During the second semester of the academic year 2011, the researcher herself taught Class 5/12 which included the thirty samples using the
four lesson plans for 30 periods of 50 minutes each. Data was collected in three ways.

1. Performance Assessment

   In order to determine the performance of the students when they wrote their composition through the use of the 5-stage writing process toward scaffolding techniques, they were observed and assessed. The observation and assessment were conducted as follows:

   In the first lesson, the researcher introduced the process-oriented strategy and the rubrics used to the students. Through the 4 lesson plans, students were observed and assessed. The students followed the instructions and produced their composition stage by stage during the 30 periods. The time used for the experiment was one-fourth of the total time. While the students were performing their activities, they were observed by the observer. The researcher observed and scored students using the rubrics assigned in paragraph writing.

2. A product scoring profile

   In order to find the achievement of the students when they wrote their paragraph writing through using the 5-stage writing process toward scaffolding techniques, their paragraph writing were assessed as described below:

   2.1 The students finished their paragraph writing at the end of the fifth stage of the writing process, and the paragraph writings were given to the rater.

   2.2 There was a rater: Mr. Robert Mc Mahon; an English teacher from England teaching at Thatnaraiwittaya School.

   At the end of the experiment, the rater assessed and gave scores by focusing on the content, organization, vocabulary, language, and mechanics of the paragraph writing using the rubrics provided in the product scoring profile.

2.3 The researcher collected all the products scoring profiles marked by the rater for analysis.

3. Satisfaction Assessment

   In order to measure the students’ satisfaction, when both the writing process toward scaffolding techniques was used in their writing, a questionnaire was used as an instrument.

   3.1 Students check list the level of satisfaction in the questionnaire in the twenty-fourth periods at the end of the experiment. There were thirty items based on the 5-stage writing process toward scaffolding techniques for students to mark.

   3.2 The researcher collected the questionnaire marked by the students for analysis.

Data Analysis

The data collected was analyzed by using One-Sample T-Test in the SPSS, (Statistical Packages for Social Science), computer program.

1. Performance Assessment

   In order to determine the performance of the students when they wrote their paragraph writing through using the 5-stage writing process toward scaffolding techniques, the data was analyzed as follows:

   Arithmetic Mean: Arithmetic Mean was used to indicate the average level of the students’ products. This study aimed at finding out if the performance mean was equal to or higher than 4.00 when the instructional model was used.

   The set criterion point used to assess the products of the students was 4.00. This criterion is based on Standard 1 of the Standards of Learner
Quality by the Office for National Education Standards and Quality Assessment (Public Organization, 2002: 62). The indicator requires that students should have virtues, morality and desirable values equal to or more than 70%. According to Posrie (2006), the criterion should be a little higher than the normal criterion. Therefore this study set the criterion $\geq 75\%$ or 4.00, in order to make it more challenging.

1.2 Standard Deviation: Standard Deviation was used as a measure of dispersion for one variable that indicates an average distance between the score and the mean of the students’ scoring profile.

2. A product scoring profile

In order to find the product scoring profile of the students when they wrote their paragraph writing through using the 5-stage writing process toward scaffolding techniques, the data was analyzed as follows:

2.1 Arithmetic mean: the arithmetic mean was used to indicate the average level of the students’ achievement. This study aimed at finding out if the achievement mean was equal to or higher than 3.50 when the writing process toward scaffolding techniques was used.

2.2 The set criterion in Standard 5 of the Standards of Learner Quality by the Office for National Education Standards and Quality Assessment (Public Organization2008: On-line) requires that students of an “A Level” school should have an average achievement level varying from 65% to 86%. However, the English achievement results of Grade 11 students at Thatnaraiwittaya school in the academic years 2008, 2009 and 2010, were 52.83%, 41.74%, and 37.13% respectively. These results demonstrated that students’ ability in English was low and we could conclude that their writing ability was also low as it is the most difficult of skills to master.

The researcher considered although the subjects were Grade 11 students, it was too difficult if the set criterion for this research was the same criterion set by the Office of National Education Standards and Quality Assessment (PublicOrganization). Thus, this study set the achievement criterion at 62.50% or $\geq 3.50$, which is 25% higher than the ability students actually had in order to make it a bit more challenging.

3. Satisfaction Assessment

In order to measure the students’ satisfaction, when both the writing process toward scaffolding techniques was used in their writing, a questionnaire was used as an instrument; the data was analyzed as follows:

3.1 The reliability of questionnaire was using Item-total Correlation of Karl Pearson: were used to determine the face validity, content validity, and reliability of the questionnaire. The reliability of every item in the questionnaire was 0.20. And as a whole questionnaire used Alpha Coefficient of Cronbach was 0.98.

3.2 Arithmetic mean: the arithmetic mean was used to indicate the average level of the students’ satisfaction. This study aimed at determining if the satisfaction mean was equal to or higher than 3.75 when both the writing process toward scaffolding techniques was used.

The set criterion used to assess the satisfaction of the students towards using both the writing process toward scaffolding techniques was 3.75. The questionnaire reflected what students had learned, and their feeling of satisfaction towards the process learned. English writing is the...
most difficult skill and these students belonged to the mathematics and science programs, and studied only one required English course. From the school curriculum students should have a good attitude towards studying so a percentage of 70 or a criterion of \( \geq 3.75 \) was suitable. Thus, this study set the criterion of the students’ satisfaction at 75% or 3.75.

3.3 Five point Likert scale: A five point Likert scale was used to indicate the level of satisfaction students expressed to every activity through the 5-stage writing process toward scaffolding techniques. The scale for scoring was 1 to 5 as follows:

- 4.50-5.00 means the most satisfied
- 3.50-4.49 means very satisfied
- 2.50-3.49 means average
- 1.50-2.49 means little satisfied
- 1.00-1.49 means least satisfied

**Findings and Discussions**

The average mean of the students’ writing apprehension before scaffolding techniques taught was 20.33 with the standard deviation at 1.73. In other words, the students had gained a great deal of anxiety prior to the writing tasks. However, the mean of students’ writing apprehension after having been trained scaffolding Techniques was 13.56 by means of the standard deviation at 1.37. In summary, the students’ trepidation in terms of writing evidently decreased. This suggested that the Scaffolding techniques could help students improve their writing ability and help reduce their anxiety in writing.

When comparing the mean value of students’ writing apprehension before and after using scaffolding techniques, students’ writing apprehension after using scaffolding techniques significantly decreased to 6.77.

The standard deviation before and after using scaffolding techniques can be shown that scaffolding techniques was slightly reduced.

After having been taught by scaffolding technique, students’ ability in terms of writing a descriptive paragraph was better than that before. The percentage of the average scores for pretest was at 54.27 and that after the students taught scaffolding techniques was 81.33. Based on the four different writing tasks as well as different pre-test and post-test assigned for students, it was found that the percentage of the students’ writing ability were clearly higher; that is, 76.93% for writing task1, 78.93% for writing task2, 78.00% for writing task3 and 77.20% for writing task4. To this end, it suggested that after having taught scaffolding techniques together with the examples of writing paragraphs, the students could use mind mapping before drafting the topic. Subsequent to drafting, each writing task would be revised and proof read by peer readers until they had the proper one. This showed that the scaffolding techniques could help students improve their writing ability and reducing apprehension while writing.

In order to find the level of students’ satisfaction towards the instructional model designed, a second questionnaire was completed by the students. As can be seen from Table 4, the results indicated the students’ satisfaction through the instructional model designed.

The mean of the students’ average satisfaction was at 4.46 (\( = 4.46 \)) with standard deviation at 0.13. To this end, students were very satisfied with the prewriting items 3, 4 and 5. In other words, the satisfaction for stage 1 was very satisfying in
general although the item 2 became least satisfying. In brief, the scaffolding techniques could help learners prepare their writing process and improve their writing ability as a whole when the appropriate genre was assigned.

The students’ satisfaction with stage 2 drafting towards modeling for items 7-11 was at 4.10, 4.93, 4.87, 4.93 and 4.90 respectively. This implied that the satisfaction level for items 7-11 was very satisfying to the students as a whole. In a similar manner, when the overall satisfaction was looked at, the mean of the satisfaction to the drafting towards modeling was at 4.07 with standard deviation at 0.11. It suggested that the students were very satisfied with the stage of drafting towards modeling. In short, during the stage 2, the scaffolding techniques not only reduced students’ anxiety, but also improved writing ability general, spelling errors in particular. In a similar manner, drafting towards modeling provided students with different ideas for their writing tasks.

Stage 3, revising to metacognition develop also revealed the students’ overall satisfaction and the finding showed that the means of all items were higher than that the criterion set; that is, 4.87 for item 12, 4.03 for item 13, 4.13 for item 14, 4.10 for item 15, 4.93 for item 16, and 4.90 for item 17. The overall satisfaction for the students was 4.49 (mean = 4.49). In addition, the highest mean for the students’ satisfaction was at item 16 whereas the lowest one was at item 13. To this end, the outcomes suggested that the students were unlikely to share and discuss their notions and ideas with peers. On the other hand, the students preferred to make changes and revise their writing according to their teacher’s comments as well as classmates’. In conclusion, the stage of revising towards metacognition develop could help students improve the students’ writing ability since they had gained more time to read and an opportunity to revise their paragraph writing and to acquire some comments and feedbacks from their instructors as well as friends.

Similarly, the students’ satisfaction gave favorable means over a period of editing via contextualization; which yielded 4.87, 4.03, 4.10, 4.93, 4.93, and 4.93 respectively. This could be accounted for 4.63 on average for the stage. Noticeably, with their interest and background knowledge, students became more confident in writing. Even though, students were least likely to proofread their classmates’ writing tasks, the mean value was still that high. To this end, a period of editing through contextualization by the use of scaffolding techniques could not only be said to decline students’ writing apprehension, but also develop students’ writing tasks.

The students’ satisfaction to publishing towards text-representative shown in items 24-30 was at 4.64 for overall satisfaction. From this aspect, scaffolding techniques could be claimed to give encouraging enthusiasm for students to develop their writing ability including writing apprehension dropping in general.

Portfolios

The primary aim of portfolio collection was to examine the effects of students’ writing improvement and emotional changes. The study revealed preferable writing enrichment which gave 80% satisfaction of self-improvement following scaffolding techniques trained applied into their writing. Clearly, the students who initially thought writing in English demanding and boring found it enjoyable and satisfying as follows:

“At first, I had difficulty in writing and I always kept avoiding writing in English. However,
when I started writing an English paragraph with the help of portfolio, I began to find it more practical and enjoyable. From this point, my writing ability has been gradually better. Now, I have gained more confidence in writing in English, and of course I have no fear to write an English paragraph anymore. In addition, it is no need for me to try to get escape from writing as I used to.” (Somchai)

“There are drastic differences between my first and last writings. There are a lot of mistakes in terms of grammar when I first wrote and I have to rewrite many times until the last one. But nowadays, with scaffolding techniques, I think I can write better and more fluently”. (Yok)

“Surely, I have made less grammatical mistakes with the help of portfolio task. The portfolio helps remind me while writing a paragraph in English. With portfolio, I pay more attention to a third person subject; that is, I have to add s or es with the verb, for example”. (Doksom)

In conclusion, based on the results of Writing Apprehension Test (WAT), 47% of the participants encountered high level of writing apprehension, and 33% of them were at the average of the apprehension when writing tasks were assigned. As the two reflective sessions documented, the participants not only stated the benefits of portfolio collection while learning writing a paragraph in English, but also emphasized its positive effects on overcoming their writing anxiety as well as apprehension. To this point, it suggested that with the use of scaffolding techniques the portfolio was a physical and successful approach which helped students improve English, writing skills in particular and reduce apprehension in general.

Students’ Writing Journals

With reference to writing journal, it showed that the students were less likely to copy other students’ tasks. Instead, students became self-esteem and confident to complete their own tasks by the use of scaffolding techniques based on Vygotsky’s theory. Despite different topics, they were engaged in students’ interest and background knowledge. Therefore, students spent most of their time writing and developing their ideas and tasks. Likewise, teachers gained more opportunity to facilitate and advise students to improve and develop their writing tasks. In a similar manner, throughout languages, a majority of students gave their peers some suggestions and comments. Since notions and discussion among classmates sparked new ideas, a variety of topics were conferred and learned. Likewise, teachers provided students some feedbacks and supportive suggestions. In so doing, this could foster and cultivate the development into students plus leading students to display characteristics desired that helped create a friendly and happy learning environment in a community. One of the students’ journals was given as an example:

“At the beginning, I was scared and stressed to write a paragraph in English as I was not confident and my English skills, writing in particular was not good enough. I was also afraid to make hundreds of mistakes. Now, I realize that all mistakes can be corrected and revised under the supervision of my teachers and peers and with my great efforts and time I spent practicing I can improve my writing ability.” (Somsak)

Conclusion

According to the study of the instructional model to reduce Thai high school students’ foreign language writing apprehension by the use of Vygotsky’s scaffolding techniques, the findings gave constructive effects on the improvement of
students’ English proficiency in general, writing skills in particular and the decrease of writing apprehension since students of a foreign language did not seem to prefer writing tasks. Firstly, based on the writing processes by means of scaffolding techniques, after having trained the 5-stage writing processes, students gained a satisfactory self-reliance in writing an English paragraph. To this end, when comparing the mean values of students’ writing apprehension before and after applying scaffolding techniques, a decrease of 6.77 in the mean value was observed. Secondly, after having been taught by writing processes through scaffolding techniques, students’ ability in terms of writing a descriptive paragraph was better than that before. In other words, the percentage of the average scores for pretest was at 54.27 and that after the students were applying scaffolding techniques the average scores were 81.33. Based on the four different writing tasks assigned for students, it was found that the percentage of the students’ writing ability were clearly higher; that is, 76.93% for writing task 1, 78.93% for writing task2, 78.00% for writing task3 and 77.20% for writing task4. To this end, it suggested that after applying writing processes through scaffolding techniques in association with the examples of writing paragraphs, the students could use mind mapping before drafting the topic. Subsequent to drafting, each writing task would be revised and proof read by peer readers until they had confidence in what they had written. Thirdly, the questionnaires on the levels of students’ satisfaction towards the instructional model designed were higher than the criterion set. Thus, the students were very satisfied with their paragraph writing products. In the end, the instruction of writing in a foreign language by the use of instructional model based on Vygotsky’s scaffolding techniques not only foster and enhance students’ improvement in English language proficiency in general, the writing skills in particular, but also lessen students’ writing apprehension. In addition, the increase in self-reliance was evidently observed. Furthermore, discussions and reactions among classmates including teachers seemed to foster learning circumstances in an unfamiliar situation in which anxiety and difficulty became a burden of learning a language.

According to an indicator in Standard 12 by the Office of National Education Standards and Quality Assessment (Public Organization 2007: Online), clients and people involved should be satisfied with learner development. This study showed that students participating in the study were satisfied with the 5-stage writing processes by the use of scaffolding techniques. In summary, the overall writing tasks were at mean value of 6.93 ( = 6.93), and the mean of the post-test writing scores was = 4.66. Likewise, the students’ satisfaction gave = 4.46 on the average which was higher than the criterion set at 3.75. To this end, the 5-stage writing processes by means of scaffolding techniques could significantly develop students’ writing skills and reduce writing apprehension.

With a narrow study, improving writing skills and reducing students’ writing apprehension was time-consuming, especially when the processes were focused on. The limited number of samples made it possible for the researcher and the rater to fulfill their tasks. However, the amounts of time allotted should be greater for data collection and for different processes of training, the process of bridging and schema building in particular since it was the foundation for following processes.
Recommendations from the Study

With a narrow study, the findings found in this study also gave a few suggestions which could be drawn as follows:

1. The result of this study should be reported to Secondary Educational Service Area Office 23, the Director of Thatnaraiwittaya School and the Department of Foreign Languages of Thatnaraiwittaya School in order to encourage English teachers to implement writing process toward scaffolding techniques in their teaching.

2. Thatnaraiwittaya School as the Foreign Languages Center should organize a workshop so as to promote the use of writing process through scaffolding techniques to teachers who teach writing courses at high school levels.

3. The results of this study should be publicized on the web page of Thatnaraiwittaya School for educational purposes.

Recommendation for Further Study

With a narrow focus in the study, a number of recommendations can be made for further study as follows:

1. In further research of a similar nature, it would be interesting to compare the literature at different fields of study such as math, science, or test anxiety.

2. Further research is needed to support the finding and to further investigate high school students' writing apprehension in English classroom.

3. A similar experiment is supposed to be carried out in different schools in order to expand the benefits of writing process toward scaffolding techniques in developing the English writing skill.

4. The usage of writing process through scaffolding techniques should be used to develop the writing skill for students at different levels.

Acknowledgement

I would like to take this opportunity to express my heartfelt gratitude and sincere appreciation to my academic advisor, Dr. Philanut Phusawisot for the precious time she made available, support, patience, and guidance with in-depth knowledge, despite her overwhelmingly busy and tight daily schedule during this research. I would also like to express my sincere gratitude for my co-advisor, Dr. Kuntaphon Samdaengdet for his kindness, understanding and guidance with helpful suggestions. Special thanks to Asst. Prof. Dr. Udorn Wan-a-rom who also provided me with millions of encouraging and beneficial comments and suggestions.

More personally, I would like to give a special note of acknowledgment and heartfelt appreciation to my colleagues from the Department of Foreign Languages Thatnaraiwittaya School, kru Lucksuree Saenprom and Mr. Robert Mc Mahon in particular for their support and beneficial suggestions. The words of thanks and appreciation also go to all of the staff members at the Department of Western Languages and Linguistics, Mahasarakham University for everything they supported and guided.

Finally, a million thanks to my beloved family and all my relatives for their encouragement, inspiration and great cheering up with helpfulness all the time.

Reference


Supervisory unit general Education Department Ministry of Education. (1998).*The Use of Portfolios in Authentic Assessment.* Bangkok: Supervisory unit, D.G.E.
