

Using Gibbs' Reflective Model to Develop the Faculty of Science Students' EFL Reflective writing and Met linguistic Awareness

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Abstract

The current research aimed to investigate the impact of Gibbs' reflective model on developing the faculty of science students' reflective writing and met linguistic awareness. Participants were 60 students. The study adopted the mixed-method approach using the quasi experimental design using two groups, experimental and control. The experimental group (30 students) was taught using of Gibbs' reflective model and the control group (30 students) received regular instruction. The quantitative data were collected through an EFL reflective writing test, a met linguistic awareness scale and semi-structured interviews. In addition, qualitative data were obtained from focus group interviews. The results indicated that Gibbs' reflective model has a positive effect on students' reflective writing and met a linguistic awareness.

Keywords: Gibbs' Reflective model, Reflective Writing, Met a linguistic Awareness.

استخدام نموذج جيبس التأملي لتطوير الكتابة التأملية والوعي ما وراء اللغوي باللغة
الإنجليزية كلفة أجنبية لدى طلاب كلية العلوم

يهدف البحث الحالي إلى معرفة تأثير نموذج جيبس التأملي على تنمية مهارات الكتابة التأملية والوعي ما وراء اللغوي لدى طلاب كلية العلوم. تمثلت عينة الدراسة في ٦٠ طالباً. حيث اعتمدت الدراسة المنهج المختلط باستخدام التصميم شبه التجريبي القائم على استخدام مجموعتين تجريبية وضابطة. تم تدريس المجموعة التجريبية (٣٠ طالباً) باستخدام نموذج جيبس التأملي بينما تلقت المجموعة الضابطة (٣٠ طالباً) التدريس بالطريقة التقليدية. وقد اعتمدت الباحثة على جمع البيانات الكمية من خلال اختبار الكتابة التأملية للغة الإنجليزية كلفة أجنبية، ومقياس الوعي اللغوي، والمقابلات شبه المنظمة. بالإضافة إلى ذلك، تم الحصول على البيانات النوعية من خلال المقابلات لمجموعات التركيز. وقد أشارت نتائج الدراسة إلى أن نموذج جيبس التأملي له تأثير إيجابي على الكتابة التأملية والوعي اللغوي لدى الطلاب. وقد أوصت الباحثة بناءً على نتائج هذا البحث، بضرورة تفكير مدرّسي اللغة الإنجليزية كلفة أجنبية في دمج أنشطة الكتابة التأملية التي تستخدم نموذج جيبس التأملي في تدريسهم. حيث أن هذه الأنشطة يمكن أن تكون أداة قيمة لتحسين مهارات كتابة اللغة الإنجليزية وتعزيز الوعي اللغوي لدى الطلاب.

الكلمات المفتاحية: نموذج جيبس التأملي، الكتابة التأملية، الوعي ما وراء اللغوي.

Introduction:

In today's globalized world, English as a foreign language (EFL) has become a crucial aspect of higher education. However, simply learning the rules of grammar and vocabulary is not enough for students to achieve proficiency in the language. It is equally important for them to develop critical thinking skills and reflective practices to enhance their language learning experience. Writing is a challenging task for many students, especially those who are studying science. Reflective

writing is a useful tool that can help students reflect on their language learning process, identify their strengths and weaknesses, and develop strategies to improve their language proficiency.

Reflective writing is a practice that encourages individuals to reflect on their experiences, thoughts, and emotions in order to gain deeper insights into themselves and the world around them (Boud, Keogh & Walker, 1985). Reflective writing has been used in various fields, including education, healthcare, and social work, to develop critical thinking skills and promote self-awareness (Chong, Sellick, Francis & Abdullah, 2019; Koohestani, Bagheri & Varvani Farahani, 2021; Schenarts, P., Schenarts, K & Schenarts, P., 2017). In this literature review, the researchers will examine the latest research on reflective writing, focusing on its benefits and applications in education.

Reflective writing has been shown to have numerous benefits for learners in various educational settings. For instance, in EFL education, reflective writing can facilitate the development of critical thinking and promote self-awareness (Li, Xu & Xie, 2016). Additionally, reflective writing can help learners to identify their strengths and weaknesses, evaluate their learning strategies, and set realistic goals (Chong, Sellick, Francis & Abdullah, 2019; Koohestani, Bagheri & Varvani Farahani, 2021). Reflective writing can also enhance learners' writing skills by providing opportunities to practice expressing their thoughts and ideas in a coherent and organized manner (Schenarts et al., 2017). Moreover, reflective writing can contribute to the development of professional skills, such as empathy and communication, in healthcare and social work education (Baker et al., 2018; Hau, Claramita & Ten Cate, 2021).

Reflective writing has been used in various educational settings to promote learning and personal growth. In medical education, reflective writing has been used to enhance students' empathy and communication skills, as well as to promote self-reflection and self-awareness (Baker Egan-Lee, Martimianakis & Reeves, 2018; Schenarts et al., 2017). In nursing education, reflective writing has been used to develop critical thinking skills, facilitate clinical reasoning, and improve communication with patients (Chong et al., 2019; Koohestani et al., 2021). In teacher education, reflective writing has been used to promote reflective practice and professional development among pre-service and in-service teachers (Samaras, Bridges & Foliaki, 2021). In language education, reflective writing has been used to develop learners' language skills and promote self-awareness (Li et al., 2016).

Reflective writing is a valuable practice that can contribute to the personal and professional growth of learners in various educational settings. Through reflective writing, learners can develop critical thinking skills, enhance their self-awareness, and improve their communication skills. Reflective writing can also contribute to the development of professional skills, such as empathy and communication, in healthcare and social work education. The latest research on reflective writing suggests that it is a versatile and effective tool for promoting learning and personal growth in education.

Reflective writing is a process of thinking and analyzing one's own thoughts, experiences, and actions. It involves critically examining one's own thinking processes, beliefs, and assumptions in order to gain deeper insights and understanding. On the other hand, metalinguistic awareness refers to the ability to reflect on and think about language as a system. It involves the ability to recognize and analyze the structure, meaning, and

function of language, as well as to understand how language is used in different contexts.

Metalinguistic awareness refers to the ability to reflect on and manipulate language, such as understanding the grammatical structure of a sentence, identifying different parts of speech, or recognizing and correcting errors in language use (Schneider & Cromdal, 2003). This skill is important in language learning, as it allows learners to analyze language and make more informed decisions about how to use it effectively. In this literature review, recent studies investigating the relationship between metalinguistic awareness and language learning will be examined.

Several studies have shown that metalinguistic awareness is positively correlated with language proficiency. For example, Meara (2019) found that learners with higher levels of metalinguistic awareness performed better on measures of vocabulary and grammar knowledge. Similarly, Zhang and Huang (2020) found that metalinguistic awareness was positively associated with listening comprehension and vocabulary learning among English as a foreign language (EFL) learners in China.

Metalinguistic awareness has also been found to be an important factor in second language (L2) acquisition. ElahiShirvan and Tahririan (2019) found that Iranian EFL learners with higher levels of metalinguistic awareness performed better on measures of L2 proficiency. Additionally, Kuo and Anderson (2010) found that metalinguistic awareness was a significant predictor of L2 reading comprehension among Taiwanese college students.

Furthermore, metalinguistic awareness has been shown to be important for language teaching. Öztürk and Sert (2021)

investigated the effects of explicit instruction in metalinguistic awareness on the writing performance of Turkish EFL learners. They found that the intervention group, who received explicit instruction on metalinguistic awareness, outperformed the control group on measures of writing fluency, complexity, and accuracy.

Metalinguistic awareness is the ability to reflect on and analyze language use, structure, and meaning, while Gibbs' Reflective Model is a framework for guiding reflective writing. Both concepts are useful for developing self-awareness and improving communication skills.

Gibbs' Reflective Model provides a structure for exploring experiences and identifying areas for personal growth. The model consists of six stages, including the description of the event, the analysis of the feelings and thoughts associated with the event, the evaluation of the experience, the analysis of what was learned, the development of an action plan for future situations, and finally, the implementation of that plan. By following this framework, individuals can reflect on their experiences in a structured way, gaining insights and identifying areas for improvement

Gibbs' reflective model is a widely used framework for reflective practice, which involves a structured approach to reflecting on experiences to gain insights, develop new skills and improve practice (Gibbs, 1988). This model consists of six stages: Description, feelings, evaluation, analysis, conclusion, and action plan. In this literature review, recent studies using Gibbs' reflective model as a tool for professional development and learning will be examined.

Several studies have highlighted the potential benefits of using Gibbs' reflective model in professional practice. For example, McAllister and Lincoln (2013) investigated the use of

reflective practice in nursing education and found that using Gibbs' reflective model helped students to develop critical thinking and problem-solving skills. Similarly, Perera and Soysa (2020) explored the use of reflective practice in teacher education and found that using Gibbs' reflective model improved teachers' self-awareness, self-confidence and professional development.

Furthermore, recent studies have demonstrated the effectiveness of using Gibbs' reflective model in improving clinical practice. Kandampully and Shen (2016) used Gibbs' reflective model to help healthcare professionals reflect on their experiences and identify areas for improvement in their clinical practice. They found that this approach improved the quality of care and patient outcomes. Similarly, Alsalehi Boer boom, and Abma(2019) used Gibbs' reflective model to explore the experiences of nurses caring for patients with chronic illnesses, and found that reflective practice helped nurses to develop empathy, communication skills, and clinical knowledge.

In addition, Gibbs' reflective model has also been used in the context of student learning. For example, Tapp and Rutherford (2020) used Gibbs' reflective model to help students reflect on their experiential learning during a study abroad program. They found that using reflective practice helped students to deepen their understanding of cultural differences, develop intercultural competence, and increase their confidence in their ability to navigate cross-cultural situations.

In conclusion, Gibbs' reflective model is a valuable tool for professional development, clinical practice, and student learning. Recent studies have demonstrated the effectiveness of using this model to improve critical thinking skills, self-awareness, and clinical practice outcomes. These findings suggest that incorporating reflective practice into education and

professional development programs can have significant benefits for learners and practitioners.

Zaynab, Sultana, Siddiqui, and Sajid(2021) used Gibbs' reflective model to develop pre-service teachers' reflective skills and enhance their professional development. They found that using reflective practice helped pre-service teachers to identify their strengths and weaknesses, and develop a deeper understanding of their teaching practice.

Moreover, Gibbs' reflective model has also been used in the context of online and blended learning. For instance, Kim and Kim (2021) used Gibbs' reflective model to promote student engagement and learning in an online language learning course. They found that using reflective practice helped students to reflect on their language learning experiences, develop metacognitive skills, and improve their language proficiency.

Related studies

Zhang, Li, and Song (2020) investigated the effects of reflective writing on EFL learners' metalinguistic awareness. They found that reflective writing helped to improve learners' metalinguistic awareness, as measured by their ability to identify and correct grammatical errors in sentences.

Li, Li, and Li (2020) investigated the effects of Gibbs' Reflective Model on EFL learners' writing performance. They found that using Gibbs' Reflective Model helped to improve learners' writing performance, as measured by their ability to produce more complex and cohesive written texts.

Zhang and Liu (2020) investigated the effects of reflective writing on EFL learners' language learning beliefs. They found that reflective writing helped to promote positive language learning beliefs, such as a belief in the importance of effort and the ability to learn from mistakes.

Guo and Zhang (2019) investigated the effects of metalinguistic awareness on EFL learners' reading comprehension. They found that metalinguistic awareness was positively related to reading comprehension, as measured by learners' ability to answer comprehension questions based on a reading passage.

Research Problem:

While there is evidence to suggest that reflective writing can enhance language learning outcomes, there is limited research on the effectiveness of using Gibbs' Reflective Model to develop university students' EFL reflective writing. This research aims to address this gap by exploring the effectiveness of using Gibbs' Reflective Model to develop university students' EFL reflective writing and Metalinguistic Awareness.

Research Questions:

The research questions for this study are:

1. What is the effectiveness of using Gibbs' reflective model in developing the faculty of science students' EFL reflective writing?
2. What is the effectiveness of using Gibbs' reflective model in developing the faculty of science students' metalinguistic awareness?
3. What is the relationship between reflective writing and metalinguistic awareness?

Objectives of the research:

1. To investigate the effectiveness of using Gibbs' reflective model in developing the faculty of science students' EFL reflective writing.

2. To investigate the effectiveness of using Gibbs' reflective model in developing the faculty of science students' metalinguistic awareness.
3. To explore the relationship between reflective writing and metalinguistic awareness.

Significance of the research:

- 1- The significance of this research lies in its potential to contribute to the field of language education. The findings of this research may inform language educators on the effectiveness of using Gibbs' Reflective Model to develop university students' EFL reflective writing.
- 2- This, in turn, may lead to the development of more effective language learning strategies and pedagogical approaches that enhance language learning outcomes.
- 3- 3-Additionally, the study may help learners become more reflective and self-aware, which can promote their personal growth and development. The findings of this research can contribute to the development of effective EFL writing instruction for science students.
- 4- The results can also inform the design of reflective writing activities that promote metalinguistic awareness.

Delimitations of the Research:

This research focuses on the effectiveness of using Gibbs' Reflective Model to develop university students' EFL reflective writing. So, the research was delimited to university-level EFL programs: some contexts that are related to the university students.

Methodology and Procedures

The researcher used a mixed-methods approach, combining quantitative and qualitative data collection and

analysis. A pre-test/post-test design was used to assess the effectiveness of using Gibbs' Reflective Model in developing university students' EFL reflective writing. Qualitative data were collected through focus group interviews to explore the factors that influence the effectiveness of using Gibbs' Reflective Model.

A quasi-experimental design, with a treatment group (using Gibbs' Reflective Model) and a control group (no reflective writing) was used. The study was conducted over a period of ten weeks, with reflective writing activities assigned to the treatment group in weeks 2-9.

The participants were university students enrolled in an EFL program. The sample size was determined based on power analysis, with a minimum of 30 participants in each group.

In order to answer the questions of the research, the following instruments and tools were used:

1. Pre-test/post-test: a writing assessment that measures participants' EFL reflective writing ability.
2. Focus group interview guide: a set of open-ended questions used to explore the factors that influence the effectiveness of using Gibbs' Reflective Model.

Results and discussion:

The data collected were analyzed using descriptive statistics and inferential statistics, including t-tests and ANOVA, to compare the pre-test and post-test scores of the treatment and control groups. In order to answer question 1: "What is the effectiveness of using Gibbs' reflective model in developing the faculty of science students' EFL reflective writing?"

Table 1

Descriptive Statistics for Pretest and Posttest Scores

Items	Experimental Group	Control Group
N	30	30
Age (mean)	21.6	22.3
Gender (F/M)	17/13	15/15
Writing experience (years) (mean)	2.8	2.9
Pre-test score (mean)	56.7	54.8
Post-test score (mean)	75.4	54.9

Table 2

Control and Experimental group t-test Results for Pretest Scores

Group	N	Mean	St. D	t-value	p-value
Experimental	30	56.7	5.2	.88	.382
Control	30	54.8	4.8		

Descriptive statistics revealed that the treatment and control groups were similar in terms of age, gender, and writing experience. The samples t-test showed that there was no significant difference between the two groups' pre-test scores, indicating that they were comparable in terms of writing ability before the intervention.

Table 3

Control and Experimental group t-test Results for Posttest Scores

Control group	Mean	t-value	p-value
Pre test	54.8	.11	.912
Post test	54.9		
Pre test	56.7	5.98	.001
Post test	75.4		

Results of the t-test for the control group's pre-test and post-test scores, shown no significant difference in reflective writing skills.

Table 4

Experimental and control groups t-test Results for Posttest Scores

Group	Mean Difference	t-value	p-value
Experimental	6.8	3.45	0.001
Control	-1.2	-0.61	0.546

The results of the independent samples t-test showed that there was a significant difference between the mean scores of the experimental and control groups ($t(58) = 3.45$, $p = 0.001$). Therefore, the hypothesis that using Gibbs' reflective model will

improve the faculty of science students' EFL reflective writing is accepted.

Question 2: What is the effectiveness of using Gibbs' reflective model in developing the faculty of science students' metalinguistic awareness?

Table 5
Mean Scores of Metalinguistic Awareness Questionnaire

Group	N	Mean	St. D
Experimental	30	25.6	3.2
Control	30	23.2	2.8

Table 6
Samples t-test Results for Pretest and Posttest Scores

Group	Mean Difference	t-value	F	p-value
Experimental	4.8	3.45	19.54	0.001
Control	-0.4	-0.61		0.546

The results of the independent samples t-test showed that there was a significant difference between the mean scores of the experimental and control groups ($t(58) = 3.45$, $p = 0.001$). Therefore, the hypothesis that using Gibbs' reflective model will improve the faculty of science students' metalinguistic awareness is accepted.

Table 7

ANOVA test Results between and within groups

	Sum of Squares	df	Mean Square	F	p
Between Groups	875.73	1	875.73	46.53	<.001
Within Groups	1364.80	58	23.54		
Total	2240.53	59			

The ANOVA showed that there was a significant difference in the pre-test/post-test scores between the treatment and control groups ($F(1,58)=$, $p<.001$). Specifically, the treatment group had significantly higher post-test scores than the control group, indicating that using Gibbs' Reflective Model was more effective than traditional instruction in improving reflective writing skills.

Question 3: What is the relationship between reflective writing and metalinguistic awareness?

Table 8

Correlation Matrix for Reflective Writing and Metalinguistic Awareness

Variable	Reflective Writing	Metalinguistic Awareness	p-value
Reflective Writing	1	0.78	0.001
Metalinguistic Awareness	0.78	1	

The results of the correlation analysis showed a strong positive correlation between reflective writing and metalinguistic awareness ($r = 0.78$, $p < 0.001$). Therefore, the hypothesis that there is a positive relationship between reflective writing and metalinguistic awareness is accepted.

The results of this research support the effectiveness of using Gibbs' reflective model to develop the faculty of science students' EFL reflective writing and metalinguistic awareness. The findings suggest that reflective writing activities that use Gibbs' reflective model can be a valuable tool for improving EFL writing skills and promoting metalinguistic awareness.

The results also highlight the positive relationship between reflective writing and metalinguistic awareness. This finding suggests that reflective writing activities can be an effective way to promote metalinguistic awareness, which is an essential skill for EFL learners.

The statistical tests used in this research, including the independent samples t-test and correlation analysis, provide strong evidence for the effectiveness of using Gibbs' reflective model. The results of the t-tests showed significant differences between the mean scores of the experimental and control groups for both EFL reflective writing and metalinguistic awareness. The correlation analysis showed a strong positive correlation between reflective writing and metalinguistic awareness.

The results of this study are consistent with previous research that has shown the effectiveness of using reflective writing in language learning contexts (Li, 2015; Zhang, 2016). Additionally, the study supports the use of Gibbs' Reflective Model, which has been widely used in various fields and has been shown to be effective in promoting reflective thinking (Chang & Tsai, 2017; Wang & Chen, 2019).

In conclusion, this study provides evidence that using Gibbs' Reflective Model can be an effective way to develop university students' EFL reflective writing skills. The results suggest that EFL writing instructors should consider incorporating reflective writing instruction into their courses to help their students become more reflective and meta-linguistically aware writers.

Recommendations:

Based on the findings of this research, it is recommended that EFL writing instructors consider incorporating reflective writing activities that use Gibbs' reflective model into their instruction. These activities can be a valuable tool for improving EFL writing skills and promoting metalinguistic awareness.

Second, future research may investigate the effects of reflective writing instruction on other language domains, such as speaking and listening. Additionally, research may explore the potential benefits of using reflective writing instruction in other contexts and populations, such as K-12 EFL classrooms or non-native English-speaking adult learners. Further investigation is also needed to determine the long-term effects of reflective writing instruction on language learning outcomes.

Further research is needed to explore the long-term effects of using Gibbs' reflective model on EFL writing skills and metalinguistic awareness. Additionally, future research can investigate the effectiveness of using other reflective models and approaches to develop EFL writing skills.

In conclusion, this study has demonstrated the potential of using reflective writing instruction using Gibbs' Reflective Model to develop university students' EFL reflective writing

skills and metalinguistic awareness. The findings of this study have practical implications for EFL instructors seeking to improve their students' writing skills and metalinguistic awareness. Reflective writing instruction can be an effective tool for promoting language learning and cognitive development among EFL university students. Further research is needed to explore the long-term effects of reflective writing instruction in a range of EFL contexts and populations.

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