The effect of writing language anxiety on the cognitive processes involved in German written expression: (A proposed constructive model)

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Abstract

The purpose of this research was to investigate the compatibility of a proposed constructive model for written expression in the foreign language, specifically German, with the model extracted from students studying languages at the Faculty of Education, Helwan University. Additionally, the study aims to identify the effect of writing language anxiety on the cognitive processes involved in written expression in German, based on the proposed constructive model. The sample consisted of 278 foreign language learners. Various assessment tools were employed to measure both written expression and writing language anxiety. The results demonstrated the alignment of the proposed constructive model with the model derived from students studying foreign languages. Moreover, notable differences emerged in the mean scores between students exhibiting high anxiety and those with low levels. These differences were observed across various dimensions of written expression, including memory, structure, and fluency. The results were qualitatively and quantitatively discussed, and recommendations for future work were provided. The findings highlighted the significance of integrating both semantic and syntactic aspects in foreign language instruction. Moreover, educators should address the influence of anxiety on written expression and its constituent sub-processes.

Keywords: language Anxiety- cognitive processes - German written expression, proposed constructive model

1- Introduction

In the world of language learning, writing can be stressful. Language anxiety, specifically in writing, is when learners feel nervous or uneasy when putting their thoughts down on paper in a language they're still mastering (Dewaele & Alfawza, 2018; Shao et al., 2019; Dever et al., 2021;Zare et al., 2022). This anxiety doesn't just affect the quality of their writing—it can also impact how well they learn the language overall.

Different studies have shed light on the prevalence of language anxiety among university students. For example, Al-Shuaibi et al. (2014) revealed that students often experience anxiety in foreign language classrooms. Similarly, Bakhsh et al. (2015) explored foreign language anxiety among students at Lasbela University in Balochistan, Pakistan, finding that anxiety levels were notably elevated. Another investigation by Alsowat (2016) demonstrated that Saudi English language students at Taif University faced a medium level of anxiety. Additionally, Mamoun (2021) discovered that a significant majority of undergraduate learners in Bangladesh exhibited high levels of anxiety regarding English as a foreign language.

Many of theoretical models tried to explain the effect of stress and anxiety in written language, and they found that there are many of negative impacts as a results of the anxiety on written process that represented into five broad categories: academic, social, cognitive, affective, and personal (Oteir & Al-Otaibi., 2019); Dewaele & Dewaele., 2020; Bahgat., 2021; Wang., 2021). In particular, Oteir and Al-Otaibi's study (2019) revealed a negative relationship between foreign language anxiety and academic achievement, while Zheng and Cheng (2018) found that factors such as students' perceptions of their foreign language proficiency can contribute to language anxiety.

In addition to the studies mentioned earlier, the Alsowat study (2016) discovered a significant negative correlation between language anxiety and language proficiency, particularly in grammar, speaking, writing, and reading skills. Other studies have also identified factors that contribute to language anxiety, such as fear of speaking a foreign language, low self-perceived foreign language proficiency, and low self-esteem (Szyszka, 2011; Tahriri, 2006), as well as communication apprehension (Al-Shuaibi et al., 2014).

Anxiety can have a significant impact on the ability of individuals to express themselves in writing in a foreign language. Research studies have shown that anxiety can negatively affect various aspects of written expression, such as vocabulary, grammar, organization, and overall text quality. For example, the study of Matsuda and Gobel (2004) found that anxiety had a negative impact on writing proficiency regardless of the students' language proficiency levels. In addition to impacting writing performance and proficiency, anxiety can also affect the writing process itself. For instance, anxiety can make it difficult for individuals to generate ideas, organize their thoughts, and revise their writing, Tekin et al. (2022) found that anxiety plays a significant role in language performance in the second language.Tysinger et al. (2010) found a negative correlation between social anxiety and reading comprehension but no significant correlation with reading fluency in elementary school students.

Moreover, Delleman (2014) demonstrated that anxiety can have a negative impact on the memory process. Similarly, Fayegh et al. (2010) and Sullivan (2002) found a relationship between test anxiety and memory. In addition, the studies conducted by Zarei and Moussavou (2022) and Selwaness (2022) revealed that anxiety has a negative effect on fluency. However, we could not find any studies that specifically examine the impact of anxiety on written expression in German as a foreign language.

There are several psycholinguistic models of the writing process, including the HAYES/FLOWER model (1981), a popular model of the writing process that focuses on the cognitive processes involved in writing. This model includes three stages: planning, translating, and reviewing. The planning stage involves generating and organizing ideas, while the translating stage involves converting these ideas into written text. Finally, the reviewing stage involves revising and editing the written text. Bereiter and Scardamalia's developmental model (1987), is another influential model of the writing process that emphasizes the role of knowledge and expertise in writing. This model suggests that writing proficiency develops through a series of stages, with writers gradually acquiring more sophisticated knowledge and skills as they progress through the stages. And Kellogg's model of working memory (1996). Is a model of the writing process that focuses on the role of working memory in writing? This model suggests that working memory has two

components: the semantic system, which is responsible for generating and organizing ideas, and the production system, which is responsible for translating these ideas into written text. Each of these models has its strengths and weaknesses.

One of the weaknesses of these models is the separation between the semantic and synthetic sides of writing, without merging both sides together. For example, the HAYES/FLOWER model (1981) considered both sides as consecutive and not overlapping, while Kellogg's model of working memory (1996) focused on the semantic side without taking into account the synthetic side.

After evaluating and reviewing some of these models, a proposed constructive model for written expression in German will be presented. This model will aim to address the weaknesses of previous models by integrating the semantic and synthetic sides of writing. Additionally, the model will take into account the impact of writing anxiety on written expression in German as a foreign language, which is an important factor that can affect the writing process.

1.1- **Research Questions:**

1- To what extent does the proposed constructive model of written expression align with the constructive model derived from responses of foreign language learners?

2- What is the level of writing anxiety among the study sample?

3- Are there any significant differences in written language anxiety between second year and fourth-year students?

4- Are there any significant differences between high and low language anxiety groups in the written linguistic expression test and its sub-dimensions?

5- Are there any significant differences in the written expression test and its sub-dimensions (remembering, structure, and fluency) between second year and fourth-year students?

1.2-   The Research aims:

6- To evaluate the level of compatibility between the proposed constructive model of written expression and the constructive model derived from the responses of university students of foreign languages.

7- To assess the level of writing anxiety among the study sample.

8- To compare the levels of written language anxiety between second-year and fourth-year university students.

9- To investigate the differences in the written linguistic expression test and its sub-dimensions (remembering, structure, and fluency) between high and low language anxiety groups.

10- To analyse the differences in the written expression test and its sub-dimensions (remembering, structure, and fluency) between second-year and fourth-year university students.

2- LITERATURE REVIEW

2.1-The Nature of the German language and Writing Process

It should be noted that there is a difference in the level of grammatical accuracy required for speaking and writing. In written expression, learners need to have a strong grasp of grammatical rules to produce coherent text. This poses a challenge for those learning German as a foreign language, as the language has a vast number of rules, linguistic unions, and deviations from these rules.

Writing is a powerful psychological tool that facilitates the development of internal mental processes and connects various cognitive functions, such as thinking, categorizing, judgment-making, speaking, choosing, and deciding. Inner language, which involves thinking in abstract meanings, plays a crucial role in the creative process of writing (Loescher, 2008, 60-61). However, when it comes to speaking a foreign language, learners face numerous challenges. In the case of German as a foreign language, Schapowalow and Schapowalow (2005) found that Russian learners of German experienced difficulties not only in finding the appropriate words but also in using the correct grammar. To overcome these challenges, it is essential for learners to have a clear understanding of the mistakes they make during the learning

process. This research focuses on the linguistic production of German, with a particular emphasis on its structural, semantic, and applied phenomena. In the next step, a precise definition of the psycholinguistic processes involved in German language production will be provided.

The findings of the previous study align with those of Abdel-Raouf's (2010) research, which also identified a range of difficulties faced by German language learners during the speaking process, including challenges related to grammar usage, structural organization, pronunciation, and intonation. Similarly, De Ramírez (1997) highlighted various linguistic phenomena within the German language that pose inherent difficulties for learners.

The German language is characterized by its extensive use of inflections and declensions, which may not always correspond to those found in a learner's mother tongue. As a result, learners may find it challenging to memorize the correct forms of German nouns and verbs, which can vary based on gender, number, case, tense, mood, and person. Furthermore, German syntax can be quite distinct from that of other languages, which can make it difficult for learners to construct grammatically correct sentences. Despite these challenges, with commitment and practice, learners can develop proficiency in the German language.

Der maskulin, die feminina, das neutral

- (der Tisch , die Jacke , das Mädchen, die Tür)we find
- inflectional cases (Nominativ, Akkusativ, Dativ und Gentiv)
- Der Mann stehthier.
- Ich sehe den Mann.
- Ich helfe dem Mann.
- Ich gratuliere des Mannes seines Geburtstag.

There are many difficulties in German, reaching the point of describing it in a terrifying language, as mentioned by twain. The following example illustrates the differences between German and English in some linguistic aspects:

Singular

- Nominativ: Mein gutter Freund (my good friend)
- Genitiv: Meines guten Freundes(of my good friend)
- Dativ: Meinem guten Freunde(to my good friend)
- Akkusativ: Meinen guten Freund (my good friend)

Plural

- N.: Meine guten Freunde (my good friends)
- G.: Meiner guten Freunde (of my good friends)
- D.: Meinen guten Freunden (to my good friends)
- A.: Meine guten Freunde (my good friends)

The German learner should be able to familiarize himself with the difficulties that he may encounter while learning that language and also be familiar with the processes involved in the oral and written production of the language.

2.2-Writing process models

2.2.1- HAYES / FLOWER model (1980)

Späker (2006) describes the Hayes and Flower model of the writing process, which is considered the foundation for other models. This model consists of three components: the writing process, the external environment, and long-term memory. The writing process is divided into planning, drafting, and reviewing, which are controlled by a mechanism that stores and controls the writing. The external environment includes the writing task and completed parts, and long-term memory includes knowledge about the subject, intended reader, and writing plans. The writer can move between sub-processes as needed to solve problems during the writing process. This approach is similar to the steps outlined in the model (Flower & Hayes, 2004).

2.2.2- Hayes' Cognitive Writing Form

According to Keßler (2010), Hayes's 1996 writing model builds upon his previous model and describes the writing process through partial operations, such as planning, drafting, and reviewing. The model assumes that writers can move back and forth between these sub-elements. It consists of two main components: the writing environment and the text product. The writing environment includes external factors like social elements, the writing situation, and means of writing. The text product includes cognitive and emotional aspects, as well as long-term and working memory. Cognitive processes include building internal representations, problem-solving, decision-making, and summarizing. Both working memory and long-term memory support the writing process. (Keßler, 2010; Flower & Hayes, 2004).

2.2.3-Bereiter and Scardamalia's developmental model (1987)

Bereiter and Scardamalia's developmental model of writing distinguishes between novice and expert writers, with two main writing strategies: the "Knowledge Telling Strategy" and "Knowledge Transforming Strategy." Novice writers retrieve or generate ideas from long-term memory without reorganizing conceptual content or linguistic form, while expert writers adjust content to meet rhetorical and pragmatic goals, re-elaborating both conceptual content and linguistic form. The difference is a contrast between direct retrieval of content from long-term memory and elaborating a representation of the problem to be solved. Expert writers engage in more reflective thought, developing elaborate plans, modifying and elaborating these plans during writing, and revising drafts extensively to tailor to the reader's needs. (Galbraith, 2009; Hayes, 2011).

2.2.4-Kellogg's model of working memory (1996)

Kellogg (1996) created a writing model that integrates writing processes with Baddeley's (1986) Working Memory model. Kellogg's model consists of three components: Formulation, Execution, and Monitoring, each with two basic processes. Planning and translating make up the Formulation component, Programming and executing make up the Execution component, and Reading and Editing make up the Monitoring component. Kellogg's 2001 elaboration of the model identifies the specific components of Working Memory involved in each process, with planning requiring both the VSSP and the central executive, Translation requiring the central executive and the phonological loop, and Transcribing and Editing involving different components. (in: Galbraith, 2009; Yi & Ni, 2015).

2.2.5- Route model of writing

This model means the model of the two paths or three paths of the writing process, The two main paths of this model are Path over the lexical and Semantic Synthetic Path, The first path deals with the individual information through which sounds and groups of sounds are converted into the relevant words, and this path is associated with writing new and unknown words. The second path is dedicated to recognizing the word in the auditory input dictionary. Then the activation of the word's meaning begins in the semantic system and the meaning of the word is stored After that, to find the

form of the word in the written director's dictionary, the syntactic representation is important in this context, because in many languages it is not possible to rely on the method of writing on phonemic structural relations through sound. In the German language, we find in some words taken from other languages a difference between the sound The word and the way it is written, such as the words (Blamage and Revue)(Borman, 2007, 103-104).

2.2.6- Generating model for writing

The writing model described involves retrieving available ideas from a search table in long-term memory. If the search table fails to produce necessary ideas and planning elements, the writer questions whether a new lookup table should be developed. If a new table is successfully developed, ideas are retrieved through it. The retrieved element is then evaluated to determine whether it matches the lookup table and if it is useful and appropriate. If it is, the writer questions whether the idea was already included and written down or if it needs to be added. This process repeats every time the question arises of whether the current research table is being used to search for ideas. If the answer is yes, the process starts again. If the answer is no, the idea generation process ends (Späker, 2006).

After analyzing several linguistic models of written production, several strengths and weaknesses can be identified:

On the positive side, these models include a large number of cognitive processes. However, one of the weaknesses is the separation between the semantic and synthetic aspects of the production process. The models often focus on one aspect while neglecting the other, creating a deficiency in merging the semantic and synthetic aspects.

Another weakness is that the evaluation process should not only focus on the final product but also include interim evaluations after each stage of the writing process. Additionally, most models do not address the removal of disturbing variables that hinder the production process, especially in learning foreign languages where learners may not be familiar with all the rules of structure, pronunciation, and writing.

Moreover, most models do not address the production of foreign languages, which presents obstacles for learners who may form ideas in their

minds in their native language and struggle to translate them into the target language. Learning the language as used by native speakers is crucial to effective language production.

Most models also focus on the cognitive side without providing a detailed explanation of the practical steps of written production, which can lead to problems for learners. The generation model for writing processes is advantageous in that it involves a phased evaluation during the writing process to identify strengths and weaknesses after each step.

2.2.7- **The basis for the proposed constructive model**

The proposed constructive model for the writing process should be based on a combination of the semantic and structural aspects of language. The model should emphasize the importance of phased evaluation in all stages of the writing process. It should be simple and clear, allowing for easy understanding of the mental processes involved in writing.

The sequence and logical order of the steps should be emphasized in the model, with a clear confirmation of the final calendar next to the interim calendar. The model should also emphasize the importance of considering the context before beginning the writing process and realizing the purpose of the writing.

In addition, the model should take into account the role of gestures and non-verbal signals in the writing process. It should also emphasize the importance of removing any disabilities or distracting stimuli that may hinder the writing process. By incorporating these elements, the model can provide a comprehensive framework for effective and efficient writing.

2.2.8- **Measuring the Writing Expression Depending on the Proposed Constructive Model**

To measure writing expression using the proposed constructive model, the focus should be on three main parts: the ability to remember, the ability to build structure, and fluency.

The ability to remember refers to the writer's ability to recall relevant information and ideas related to the topic they are writing about. This can be measured by evaluating how well the writer incorporates relevant details and ideas into their writing.

The ability to build structure refers to the writer's ability to organize their ideas and thoughts in a logical and coherent manner. This can be measured by evaluating the writer's use of paragraph structure, transitions, and overall organization of the writing.

Fluency refers to the writer's ability to write smoothly and coherently, without any significant pauses or disruptions. This can be measured by evaluating the flow and rhythm of the writing, including sentence structure, word choice, and overall readability.

Overall, measuring writing expression using the proposed constructive model involves evaluating the writer's ability to remember relevant information, organize their ideas effectively, and write fluently and coherently.

2-3- Written language anxiety:

2-3.1-Foreign Language Anxiety

Foreign Language Anxiety (FLA) is a complex construct of self-perceptions, beliefs, feelings, and behaviors related to language learning in a classroom setting. There has been growing interest in studying the effects of writing anxiety on learners' writing performance and attitudes in a second/foreign language over the past few decades. Research has shown that high levels of writing anxiety can be attributed to cognitive and language factors as well as the pressure of writing tests (MacIntyre and Gregersen, 2012).

FLA has been defined by Horwitz et al. (1986) as a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the unique nature of the language learning process. Similarly, Rasool et al. (2023) defined written language anxiety as a collection of feelings, attitudes, and actions that prevent an individual from completing a writing assignment that they are capable of doing.

Written language anxiety is a psychological state characterized by stress and anxiety when writing in a foreign language. It can stem from a fear of forgetting memorized words or an inability to effectively combine linguistic components to convey ideas that are understood by the reader. This can negatively impact the writing process and hinder effective expression in a foreign language.

2-3.2. Potential Causes

Educators are actively seeking to identify the potential causes of second language anxiety in order to help alleviate it for their students. Research has revealed a variety of factors that contribute to this phenomenon. These causes can be categorized into two sub-types: internal causes and external causes (Chen, 2023). Internal causes stem from intrinsic motivators within the learner, such as their personalities, self-perceptions, and anticipations (Sparks &Ganschow, 1993). External causes, on the other hand, are influenced by the external environment, including sociocultural factors, classroom settings, language testing, and teacher characteristics (Yan & Horwitz.2008; Luo, 2013).

2.3.4- Internal Causes of Foreign Language Anxiety

Extensive research delves into the internal causes of foreign language anxiety and highlights various factors. Personal characteristics of learners, such as a competitive personality, high self-esteem, or perfectionism, play a significant role in the development of language anxiety. A competitive personality can lead to comparisons and idealized self-images, triggering language anxiety. Low self-esteem can cause worry and fear of negative evaluations from peers. Striving for perfection in language use can generate anxiety due to the fear of making mistakes (Yan &Horwitz, 2008; Luo, 2013).

Perceptions and learning abilities also contribute to language anxiety. Negative perceptions about oneself, others, language learning, and performance, as well as poor learning abilities, can result in low expectations and negative evaluations, intensifying anxiety in language-related situations. Communication apprehension, closely linked to learning and memorizing new words, also influences interpersonal anxiety (GhorbanDordinejad &Nasab, 2013).

In addition, foreign language anxiety can arise from learners' unrealistic beliefs about language learning and the subsequent failure to meet their expectations. Some students underestimate the difficulty of language learning and expect rapid proficiency within a short period, leading to anxiety when they are unable to meet these high standards (Chen, 2023; Kitano, 2001).

2.3.5-External Causes of Foreign Language Anxiety

External Causes of Foreign Language Anxiety On the other hand, some works concentrate on the external causes of foreign language anxiety, which are mainly two-fold the external causes of foreign language anxiety, focusing on two main factors: classroom-induced and culture-imposed anxiety. Classroom-induced anxiety refers to the apprehension experienced by language learners in the instructional environment. Factors such as classroom atmosphere, teaching styles, and peer interactions contribute to the amplification of anxiety levels. The instructor's beliefs, error correction methods, perceived support levels, and pedagogical styles can significantly shape the emotional state of learners. Strict and authoritarian teaching approaches can create an environment where learners fear making mistakes and receiving reprimands, leading to less participation and more silence in the classroom. External stimuli like language assessments and exams can also contribute to foreign language anxiety (Dolean, 2016; Effiong, 2016).

On the other hand, culture-imposed anxiety arises from cultural factors inherent to learners' background or upbringing, such as region, gender, age, race, and education level. These cultural aspects can significantly influence learners' attitudes, behaviors, and emotions related to learning and using a second language (Marcos-Llinás & Garau, 2009).

3- Method and Procedures

The research method used in this study is descriptive. The descriptive approach is employed to describe the extent of compatibility between the proposed constructive model of written expression and the model extracted from the responses of university language students. It also aims to determine the level of writing anxiety among the study sample. The research involves both qualitative and quantitative data. The data was collected using a written language anxiety scale and a writing expression test.

3.1- Participants

The participants of the research consist of 278 foreign language students (238studying English and 40 students studying German as a foreign language at the Faculty of Education). The age of the participants ranged from 19 to 24, with a mean age of 21.2 and a standard deviation of 1.3. The 40 German

language learners were divided into 20 high language anxiety (Highest median (highest 50%), and 20 low language anxiety groups (Below the median (lowest 50%). The research was conducted during the first term of the educational year 2022/2023.

3.2. Tools:

3.2.1. The writing language anxiety scale:

The researchers prepared the scale for written language anxiety by conducting a thorough literature review on the topic. The initial version of the scale contained 25 items that participants responded to through self-report using a three-point Likert scale ranging from "often" (3) to "sometimes" (2) to "rarely" (1). The scale also included negative vocabulary with the same scoring system. A higher score on the scale indicated a higher level of written language anxiety, while a lower score indicated a lower level of written language anxiety.

One of the items in the scale, such as item number 5, reads as follows: "I memorize many words, but my anxiety causes me to forget them while writing an article." Participants were asked to rate their level of agreement with this statement using the three-point Likert scale.

After the initial development of the scale, it was presented to a group of specialists in educational psychology for evaluation. The specialists assessed the scale for clarity, coherence, and importance of each item. The scale contained 25 items in its initial form, and the feedback from the specialists was used to refine and improve the scale.

3.2.1.1. Factorial validity of the scale:

To assess the factorial validity of the scale, the initial version of the scale was administered to a sample of 315 second-year students at the Faculty of Education, Helwan University (English and German) was conducted during the second term of the educational year 2021/2022. The sample was divided into two equal parts, with 50% of the sample used for exploratory factor analysis (EFA) and the other 50% used for confirmatory factor analysis (CFA).

The factorial structure of the scale consisting of (25) items was revealed using the exploratory factor analysis using the principal components method to extract the factors and the orthogonal rotation of the factors using the Varimax

method using the SpssV.25, The portability of the data was checked for factor analysis; Where the absolute value of the determinant of the correlation matrix was calculated and its value amounted to (0.003), which is a value greater than (0.00001), and the KMO- Kaiser-Meyer-Olkin test was calculated for the sufficiency of the sample and its value amounted to (0.850), which is a value greater than (0.5), so the sample size is appropriate, and the value of Bartlett's Test of Spherically was (1782.758) with a degree of freedom (300), which is statistically significant at the level (0.0001), and thus the data fulfills the necessary conditions for using the Kaiser criterion to determine the number of factors. Retaining the factors whose latent root is ≥1 with the exclusion of items with saturation less than (0.30), and the deletion of factors that saturate them with less than three items, and item No. (20) and item No. (23) Were deleted because they do not saturate. It consists of (23) items. It turned out that the exploratory factor analysis resulted in only one factor explaining (50.02%) of the total variance of the matrix.

To confirm the validity of the scale, confirmatory factor analysis was conducted using the maximum likelihood method in AMOS V.25. The results indicated a good fit of the model with the data, as evidenced by the value of $\chi2/df$, the goodness-of-fit indices (RMSEA, GFI, AGFI, NFI), and the visual representation of the factorial structure of the scale. These findings provide evidence for the factorial validity of the written language anxiety scale. Table (1) presents the indicators of the model's good fit with the data, and Figure (1) shows the factorial structure of the scale.

Table (1): *Indicators of good fit of the model with the data - written language anxiety scale*

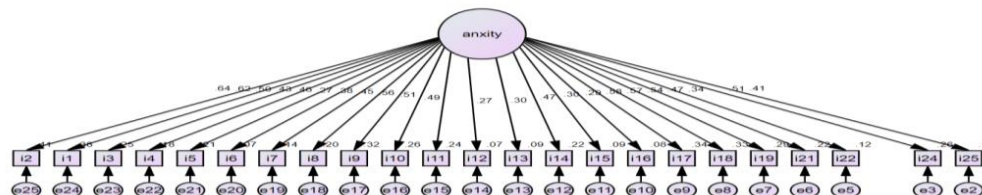| $\chi2$	Df	P	$\chi2/df$	NFI	GFI	RMSEA
454.573	227	.000	2.003	0.90	0.85	0.057

Fig. 1. Confirmatory factor analysis of the written language anxiety scale

3.2.1.2. Reliability the Scale

To assess the reliability of the scale, McDonald's omega (ω), which has been recommended as a more appropriate measure of reliability than Cronbach's alpha (Elosua-Oliden & Zumbo, 2008), was used. The recommended value for McDonald's omega is above 0.60.

In addition to McDonald's omega, Cronbach's alpha was also calculated to assess the internal consistency of the scale. Cronbach's alpha is a commonly used measure of reliability, with a recommended value of 0.70 or higher.

Table (2): *Cronbach's alphas, (α), McDonald's Omega (ω)*

	A	ω
the written language anxiety scale	0.85	0.86

The results of the reliability analysis indicated that the written language anxiety scale had good internal consistency. The McDonald's omega coefficient was 0.86, indicating high reliability, and the Cronbach's alpha coefficient was 0.85, also indicating high internal consistency. These results suggest that the scale is a reliable measure of written language anxiety.

3.2.2. The written expression test

The written expression test consists of a number of sub -tests as following:

The memory test consists of three sub-parts

The first Part measures the ability of Remember and consists of two main questions as following:

1. Remember the letters (10 words with incomplete letters and the learner is asked to complete the missing letters) Each word is correct one degree

Table (3): *Rubric to measure the Responses in Question 1.*

Number of correct Words	Mark
0-3	Weak (1 score)
4-7	Intermediate (2 marks)
8-10	Good (3 marks)

2. Remember the meanings of words (6 words in the German language, and the learner is asked to remember the meanings of the words).

Table (4): *Rubric to measure the Responses in Question 2.*

Number of correct meanings	Mark
0–2	Weak (1 score
3–4	Intermediate (2 marks)
5–6	Good (3 marks)

The second part of the test measures structure process and consists of three main questions

1. A number of letters in the German language was showed , and what is required is to form the largest number of words by using the given letters

Table (5): *Rubric to measure the Responses in Question 3.*

Number of correct Words	Mark
0–3	Weak (1 score)
4–7	Intermediate (2 marks)
7>	Good (3 marks)

2. Use correct conjunctions (five sentences without conjunctions) each sentence a score

Table (6): *Rubric to measure the Responses in Question 4.*

Number of correct conjunctions	Mark
0–1	Weak (1 score)
2–3	Intermediate (2 marks)
4–5	Good (3 marks)

3. Writing five sentence about your study at Helwan University.

The third part of the test measures the Fluency and consists of five Question as following: -

4. The students were asked to write the largest number of words which begin with prefix (in).
5. The students were asked to write the largest number of words which begin with suffix (tion).
6. The students were asked to write the largest number of words which related with word (university).
7. The students were asked to write the largest number of words which related with word (dream).

Table (7): *Rubric to measure the Responses in Question 6-7-8-9.*

Number of correct Words	Mark
0-3	Weak (1 score).
4-6	Intermediate (2 marks)
6>	Good (3 marks)

3.2.2.1. Validity of the written Expression Test:

To assess the validity of the written expression test, the correlation between students' scores in the test and their scores in the writing subject was calculated using the Pearson correlation coefficient.

The result of the Pearson correlation coefficient between the scores in the written expression test and the writing subject was 0.71, which is considered a high value. This indicates a strong positive correlation between the scores in the test and the scores in the writing subject. Therefore, the written expression test can be considered a valid measure of students' writing abilities and can be used effectively to assess their writing skills.

3.2.2.2. Ratability of the written Expression Test

Table (9): *Cronbach's alphas, (α), McDonald's Omega (ω) the writing expression test*

	A	ω
Remember	0.93	0.94
Structure	0.64	0.65
Fluency	0.84	0.85
Total	086	0.87

This indicates that the written language scale has a high degree of reliability.

4- The Results and Discussion

4.1. The first Question:

To what extent does the proposed constructive model of written expression align with the constructive model derived from responses of foreign language learners?

To address this question, an initial hypothetical model was developed based on previous research findings. The parameters of the structural equation model were estimated using the maximum likelihood method. The goodness

of fit of the model was assessed using several indicators, which are presented in Table (10).

Table (10): *Indicators of a good fit of the model with the data (n = 238)*

χ2	Df	P	χ2/df	NFI	CFI	GFI	TLI	RMSEA
43.786	32	0.08	1.35	0.90	097	0.96	0.96	0.039

The results of the analysis indicated good model fit, as evidenced by the indicators of goodness of fit. These included the chi-square (χ2) statistic, the degrees of freedom (df), the ratio of χ2 to df, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker-Lewis index (TLI). The values of these indicators fell within the acceptable ranges, indicating a good fit between the model and the data.

Overall, these results suggest that the initial hypothetical model was a good fit for the data and can be used to explain the relationship between the variables of interest. Figure (2) shows the proposed constructive model for written expression processes.
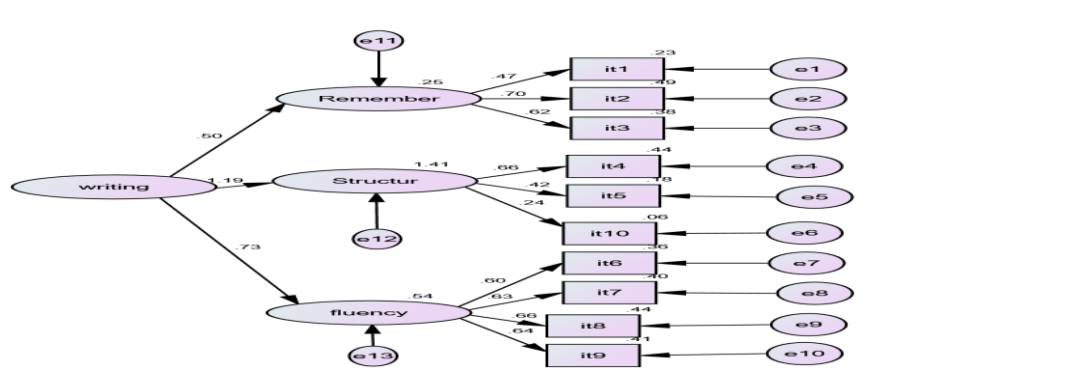

Figure (2). the proposed structural model for written expression processes

According to Zidane's (2016) explanation, foreign language learning is a complex process that involves various mechanisms such as cognitive, physiological, psychological, and social. Remembering information is a crucial element in successful language learning as it is related to mental processes, including memory. Psycholinguistic models of writing, such as Hayes and Flower's (1980) models, Kellogg's Model of Working Memory and Route model of writing, also emphasize the importance of remembering in the writing process.

Kellogg's (1996, 1999) model of working memory in writing emphasizes the relationship between each writing process and the phonological loop, visuospatial sketchpad, and central executive. Planning processes require access mainly to the visuospatial sketchpad, while translating, reading to review text produced so far, and editing are expected to impose large demands on the phonological loop. The execution component is not strongly related to the slave systems. Shen and Park (2020) also highlight the importance of working memory in second language learning, and suggest that teachers can use tables, flowcharts, schematics, timetables, or multimedia presentations to help learners perceive information by stimulating multi-dimensional neural connections temporarily.

Reiteration, retelling, reading aloud or silently, and using prefabricated chunks of information can help strengthen the retention of information acquired through short-term memory and facilitate the formation of long-term memory. Teachers should also speak slowly and clearly, use concise and clear sentences, and avoid presenting too much information at once to reduce the load on working memory.

Guo (2016) also emphasizes the importance of working memory in language learning, including vocabulary acquisition, language understanding, language performance, and reading comprehension. Elgamal's (2018) study shows that cognitive factors, including memory, have a significant impact on language learning. Various psycholinguistic models, such as the HAYES/FLOWER model (1980), Bereiter and Scardamalia's developmental model (1987), and Kellogg's model of working memory (1996), all emphasize the importance of remembering in the writing process.

4.2. The second Question:
What is the level of writing anxiety among the study sample?

The study found that the average score of the written anxiety scale for the sample of 40 male and female students was 50.75, with a standard deviation of 7.84. The hypothesized mean for the scale was 50. To test the significance of the difference between the two means and its statistical significance, a one-sample t-test was conducted.

Table (11): *the results of the t-test to reveal the difference between the arithmetic mean and the hypothetical average of the scores of the research sample on the written anxiety scale*

	N	M	SD	Test value	t	df	sig
Writing language anxiety	40	50.75	7.84	50	0.60	39	0.54

Table (11) indicates that the university students in the study have an average level of writing anxiety, with no significant difference between the sample's average score and the hypothetical mean on the writing anxiety scale. This finding is consistent with Alsowat's (2016) study, which also found that Saudi English major students had a moderate level of anxiety. However, other studies such as Al-Shuaib et al. (2014), Bakhsh et al. (2015), Zheng and Cheng (2018), and Mamun (2021) have reported high levels of language anxiety among university students.

The moderate level of writing anxiety among the participants in the current study could be attributed to the fact that the sample members were in their second and fourth years of study, with experience in learning the German language. This experience may have helped them to understand the nature of their specialization and how to adapt successfully to the demands of their coursework.

4.3. The third Question:

Are there any significant differences in written language anxiety between second-year and fourth-year students?

To verify the differences between second year students and fourth year students in written language anxiety, after confirming the conditions for conducting the T-test the independent sample t-test was calculated as following:

Table (12): *Mean and std. deviation and T score to determine the differences between the second and the forth level in writing language anxiety*

		N	M	SD	T	Sig
Writing language anxiety	the second year students	21	50.95	8.08	.17	.87
	the fourth year students	19	50.52	7.78		

The results indicated that there are not significant differences between the second and the forth level in writing language anxiety. Each one of the second and fourth level has experience in studying of German language, and each of the two levels consider final years of study, and therefore there are no differences between them in writing language anxiety.

4.4. The fourth Question:

Are there any significant differences between high and low language anxiety groups in the written linguistic expression test and its sub-dimensions?

To examine the differences between high and low levels of language anxiety in the written expression test and its sub-dimensions, after confirming the conditions for conducting the T-test an independent samples t-test was conducted as follows:

Table (13): *Mean and std. deviation and T score to determine the differences between high and low written language Anxiety in the written Expression test and is sub – dimensions*

		N	M	SD	T	Sig
Remember	**high language anxiety**	20	7.40	1.72	- 3.30	.002
	low language anxiety	20	8.85	.933		
Structure	**high language anxiety**	20	9.65	3.18	-2.31	.026
	low language anxiety	20	11.50	1.64		
fluency	**high language anxiety**	20	10.85	4.43	-2.23	.032
	low language anxiety	20	13.55	3.12		
Total score of writing Expression	**high language anxiety**	20	23.10	6.62	-2.55	.015
	low language anxiety	20	27.25	3.04		

The results of the study showed statistically significant differences between the mean scores of high and low language anxiety in the written expression test, including its sub-dimensions of memory, structure, and fluency among German language students. Various studies have highlighted the relationship between language anxiety and foreign language performance. For instance, Tekin et al.'s (2022) study demonstrated the role of anxiety in language performance in the second language, while Bahgat's (2021) study examined the relationship between language anxiety and prior knowledge on EFL students' performance in essay writing.

Wang's (2021) study indicated a relationship between language anxiety and creative writing in EFL, with state anxiety significantly predicting the creative writing of EFL. Delleman's (2014) study showed that anxiety has a negative effect on the memory process, while Fayegh et al.'s (2010) and Sullivan's (2002) studies explained the relationship between test anxiety and memory. Zarei and Moussavou's (2022) and Selwaness' (2022) studies showed that anxiety has a negative effect on fluency, but there was no study found that examined the effect of anxiety on written expression in German as a foreign language.

Other studies, such as Rasool et al. (2023) and Güvendir and Uzu (2023), have emphasized the negative impact of L2 writing anxiety on language performance. Guo (2023) explained that junior high school students are generally anxious about English writing, which is harmful to their English ability. Zhou et al. (2022) explained a negative relationship between L2 writing anxiety and L2 writing self-efficacy, and a direct effect of both on L2 writing engagement. Overall, these studies suggest that language anxiety can significantly impact foreign language performance in various ways.

4.5. The Fifth question:

Are there any significant differences in the written expression test and its sub-dimensions (remembering, structure, and fluency) between second year and fourth-year students?

To examine the differences between the second and fourth level students in the written expression test and its sub-dimensions, an independent samples t-test was conducted as follows:

Table (14): *Mean and std. deviation and T score to determine the differences between the second and fourth level students in the written Expression test and its sub − dimensions*

		N	M	SD	T	Sig
remember	the second year students	21	8.19	1.32	.27	.78
	the fourth year students	19	8.05	1.80		
structure	the fourth year students	21	11.23	1.97	1.69	.09
	the fourth year students	19	9.84	3.16		
fluency	the fourth year students	21	4.95	2.13	1.31	.19
	the fourth year students	19	4.00	2.44		
Total score of writing Expression	the fourth year students	21	26.38	3.89	1.48	.15
	the fourth year students	19	23.84	6.71		

The results showed that there were no statistically significant differences between second year and fourth-year students in the written expression test and its sub-dimensions, including remembering, structure, and fluency. The written expression test measured various processes involved in writing, such as remembering words and meanings in German, using appropriate linking tools to connect sentences, and composing words using specific letters. The test also measured fluency by evaluating the number of sentences written by the student about their studies in the German language section.

It can be concluded that the test did not depend on the level of study, whether in the second or fourth year, but rather on the student's ability to perform writing tasks. Therefore, the lack of significant differences between the two groups may suggest that the German language program effectively prepares students for the demands of written expression, regardless of their level of study.

4.6. Qualitative analysis:

The qualitative analysis is based on selecting a number of (9) students with high writing anxiety and two with (9) low writing anxiety, and comparing the written language of both groups in both the syntactic and semantic aspects of the German language.

Differences between high and low language anxiety in the light of the proposed written expression model:

Language anxiety affects the processes involved in written expression and its different semantic, synthetic and pragmatic levels, as follows:

On the semantic level, we find that the ideas are more interconnected, organized, and extended among students with low language anxiety. On the contrary, we find that among students with high language anxiety, the ideas are simple and concise.

On the syntactic level, the structure of sentences among low language anxiety is more complex, as the sentences include side and compound sentences and not simple sentences, while students with high language anxiety preferred simple sentences.

It should be noted that the phenomenon of collateral clauses is widespread in the German language, and the student must observe the proper rules when using them.

Language anxiety affects the process of language production quantitatively and qualitatively, as students with high anxiety avoid language production and are limited to producing simple sentences, One of the differences between high and low language anxiety is that low anxiety people use side sentences more.

The stage of semantic and compositional planning resulting from the previous stage is the entrance to this stage. This stage proceeds according to two parallel paths, namely the semantic in generating ideas and searching for linguistic templates to express them and linking those ideas and searching for linguistic links to express them. At the end of this stage, it includes the staged evaluation process to ensure that ideas are generated and linked, as well as putting them into sound linguistic templates. The output of this stage is the entrance to the next stage of written production.

We find that there are differences between high and low language anxiety, so the formation of ideas among those with low language anxiety is more interconnected with each other, as language anxiety affects the generation of ideas, and on the parallel side, the formulation of those ideas.

And on a pragmatic level the sentences of high written language anxiety students are characterized by the construction of incomplete sentences. The sentences may include only one or two words.

The sentences of those with high written language anxiety are characterized by an overlap between the German and English languages

The written expression differs between both high and low writing anxiety in terms of quantity and quality.

Those with low language anxiety had more words remembered than those with high language anxiety.

Some Responses of High language Anxiety Students

1- (Ich studiere germanstik) In English (I study germanistic)
2- Ich bin Studentin. Ich studiere Germanistik an der Heluan Universität. Ich habe schon seit 4 Jahren studiert.. Mein Traum beruf ist Lehrerin werden. In English (I am a student. I'm studying German at Heluan University... I've been studying for 4 years. My dream job is to be a teacher.)
3- Ich studiere an der helfen universität In English (I'm studying at the university)
4- An Helwan Universität studiere ich. Ich studiere an der pädagogische Fakultät. Dort studiere ich Germanistik. Und dieses Jahr wird ich absolvieren. In English (I study at Helwan University. I study at the pedagogical faculty. I'm studying German there. And this year I will graduate)
5- Ich studiere an der Helwan University in der Fakultät für Erziehungswissenschaften. Ich habe den Fachbereich Deutsche Sprache studiert. Ich habe mich für die Sprache entschieden, weil ich reisen möchte und das Studieren dort nicht einfach ist. Ich lerne viele Informationen daraus   In English (I study at Helwan University in the Faculty of Education. I studied the German language department. I chose the language because I want to travel and studying there is not easy. I learn a lot of information from it)
6- Das In English That
7- I   in English   i
8- Wünsch/ Handy/ möcht / räume/
9- Aktiv- aus- von- Mann-Männer

Some Responses of Low language Anxiety Students

1- (Ich bin Studientinan der pädagogoische Fakulität. Ich studiere Deutsch seit 4 Jahre. Ich möchte als deutschLehrerin werden.Mein Ziel ist, Meine Erfahrung zu vermitteln. Ich hoffe, dass es passiert.)

In English

I'm a student at the pedagogical faculty. I've been studying German for 4 years. I want to become a German teacher. My goal is to share my experience. I hope it happens.

2- (Ich studiere an der deutsche Abteilung Pädagogeschen Fakultät .Ich studiere im vierten Studenjahr. Wir haben mehrere Fächer ,die mein Interresse weckt, wie z.B Literature, Kultur Grammatik und Übersetzung. Meine Fakultätversuchtuns gut für den Arbeitsmarktvorbreiten .Diese Breich hat mehrere Berufe ,die wir arbeiten warden möchten . Wir könnten als Lehrerinnen ,Übersätzerinnen , Proisoren und Erzieherinnen arbeiten .)

In English I'm studying at the German Department of Pedagogical Faculty. I am a fourth year student. We have several subjects that arouse my interest, such as literature, culture, grammar and translation. My faculty is trying to prepare us well for the job market. This area has several professions that we would like to work in. We could work as teachers, translators, provosts and educators.

3- (Ich bin jetzt im vierten Jahr, dem letzten meines Studiums an der Helwan Universität. Ich bin nach dem Abitur dazugekommen und habe mich auf die deutsche Sprachabteilung spezialisiert.Aber für dich lerne ich nur Deutsch, aber es gab Lehrmaterialien. Wir gingen auch zur Schulausbildung, die eine Hochschule Praktikum war, um uns zu qualifizieren, nach dem Abitur zu unterrichten.)

In English I am now in my fourth year, the last of my studies at Helwan University. I joined after high school and specialized in the German language department. But for you, I'm only learning German, but there were teaching materials. We also went to college, which was a college internship, to qualify us to teach after high school.

4- Ich bin Studentin an der helwan Universität, Fakultät für Pädagogik, Deutsches Departement. Es gibt viele angesehene Dozentenan der Universität. Wir haben viele Fächer, also ist das lernendortschwer. Ich

bevorzuge spezialisierte Fächer zu Bildungsfächern, weil Bildungsfächer schwer zu verstehen sind. Aber die Studie hat viele Nachteile, zum Beispiel haben wir nicht mit der ersten Stufe in der Sprache begonnen, sondern mit der zweiten Stufe und dies hat sich auf unser Sprachniveaua usgewirkt.

In English I am a student at Helwan University, Faculty of Education, German Department. There are many respected lecturers at the university. We have many subjects, so learning there is difficult. I prefer specialized subjects to educational subjects because educational subjects are difficult to understand. But the study has many disadvantages, for example, we did not start with the first level in the language, but with the second level and this affected our level of the language.

5- Ichstudiere die deutsche Sprache an der Helwan University, das Studium dort ist aufgrund der Entfernung des Weges sehr schwierig und Bücher sind nicht verfügbar.
Aber die Uni ist sehr schön, da gibt es Bibliotheken Sehrnützlich, und ich habe dort viel über die Sprache gelernt.

In English am studying German language at Helwan University, study there is very difficult due to distance of way and books are not available.

But the university is very nice, there are libraries Very useful, and I learned a lot about the language there

6- Die Ausbildung an der Helwan University ist wunderbar
Die Ausbildung an der Helwan University arbeitete an der Leitung vieler Gelehrter Viele Menschen lernen gerne an der Helwan University.

In English The education at Helwan University is wonderful

Education at Helwan University worked on the guidance of many scholars

Many people enjoy studying at Helwan University

7- Garten ..Mentale prozesse ..Nationalität Prüfung ..Universität..Information ..Untersuchung..

8- Buchstäblich/ Ansinglesch/ Mentale Prozese/ Nationalität *Prüfung/ Universität/ Information/

9- Garten- Buchstäblish_Prűfung / universität/ informationen/

5. Recommendation and Conclusion:

The present study underscores the significance of integrating both semantic and syntactic elements in foreign language education to enhance writing proficiency. Teachers should receive training to guide students through the writing process effectively and review their work before submission. Encouraging learners to employ cognitive strategies like remembering, memorizing, and constructing linguistic templates can foster successful language acquisition. Additionally, addressing and mitigating written linguistic anxiety is crucial, as it detrimentally impacts expression quality. Teachers must recognize anxiety's adverse effects and implement measures to support learners in managing and reducing anxiety levels.

For future research, a study could evaluate the effectiveness of a self-regulation program in alleviating linguistic anxiety among language students. Such a program might incorporate strategies like goal setting and self-reflection to enhance language learning outcomes. Another avenue for exploration could involve investigating the interplay between language anxiety and academic self-efficacy, examining their influence on students' motivation and performance. Furthermore, research could explore how language anxiety affects speaking proficiency in foreign languages, shedding light on its impact on overall language acquisition. Finally, developing and assessing a model aimed at enhancing speaking proficiency in German as a foreign language could offer valuable insights into effective instructional strategies for language learners. This model could incorporate techniques such as guided practice and peer feedback to improve speaking skills effectively.

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