The Development of Vocabulary in *Kursbuch Netzwerk* A1: Textbook for German Learning Level A1

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Abstract. Vocabulary is the basic part of a language, especially for a foreign language like German. The more vocabulary means the better is someone at communicating. Mastery of vocabulary as material for one's communication should be developed throughout life because language is always evolving. Related to this, the paper aims to describe (1) the development of vocabulary in the textbook Netzwerk A1, and (2) The favorite vocabulary in every chapter. The research was conducted with data collection procedures, data categorization, data analysis, and conclusions. The source of the research data is the Netzwerk A1. Data from the book is used as the corpus of research data. Data was collected using the Simple Concordance Program (SCP), a concordance software to count the tokens and types of words. Data were taken from Netzwerk A1 (12 chapters). The results of the analysis show that (1) the development of the number of vocabulary in Netzwerk A1 switches to constantly rising at the beginning of a chapter, but then grows and drops unevenly from the middle to the end of a chapter; (2) the three high-frequency vocabularies in Netzwerk A1 are *ich, der*, and *sein*. The results of this study can be used by learners to further improve vocabulary so that the development of German learning will be better.

Keywords: Token and type of word · Density ratio · Consistency ratio · Favorite vocabulary

1   Introduction

Learning a foreign language requires a focus on vocabulary since it is the component of a language that is the most fundamental, especially for a foreign language like German learning. As one of the most essential fundamentals of language, vocabulary training has long been a primary focus [1]. The more vocabulary a person has in German, the more competent that person is in communicating in German. Mastery of vocabulary as material for one's communication should be developed throughout life because language is always evolving.

At many universities in Indonesia, German-language learners use Netzwerk for learning. The material contained in the book refers to the Common European Framework of

Reference for Languages (CEFR). The first book in this level namely Netzwerk A1 because it is the basic in the acquisition and learning of the German language or knowledge. Comparing the number of types of vocabulary and tokens between *Themen Neu, Studio D,* and *Netzwerk*, Kharis, et all revealed that the number of types and tokens of vocabulary in the three books are less than ideal because the numbers of vocabulary are unstable [2].

Early foreign language learners are like children learning a language. Language acquisition occurs when it is within the range of his ability. This is by Vygotsky's theory which assumes that learning occurs when children work or learn to handle tasks that have not been learned, but those tasks are still within the range of their abilities (in the zone of proximal development or ZPD). The key to human intelligence is the ability to use various types of tools. These tools are the symbolic systems we use to communicate and analyze reality. They include signs, symbols, maps, plans, numbers, musical notation, charts, models, pictures, and, above all, language. Cultural tools are not inherited genetically. They are developed and preserved in our culture. Vygotsky believed that the purpose of education is to introduce children to the full range of cultural tools and show them how to use them to analyze reality quickly and successfully [3]. In German learning, the development of vocabulary concerning other sources needs to be done so that the development of vocabulary becomes better. Based on this, this paper aims to describe: (1) the development of vocabulary in Netzwerk A1 book, and (2) the favorite vocabulary in every chapter of the book.

2 Method

In this case, the documentation method used is Netzwerk A1 books (12 chapters) with 166 pages. The research was conducted with data collection procedures, data categorization, data analysis, and conclusions. The research steps were used (1) to describe the development of Netzwerk A1; and (2) to describe the favorite vocabulary in every chapter of the book. Determination of developing vocabulary and identification of the favorite vocabulary using a descriptive-quantitative method and by using the *Simple Concordance Program* (SCP), which can count the token and type of words. Classification of data is done by reading, notifying, and marking the data in the corpus.

3 Results and Discussion

3.1 The Development of Vocabulary in Netzwerk A1 Books

3.1.1 General Information About Vocabulary Used in Netzwerk A1

Data collection was carried out with the Simple Concordance Program (SCP) software. After collecting data on the 12 chapters (units) in the Netzwerk A1, the following data were obtained:

Table 2 shows the total number of tokens and types as well as the type-to-token ratio and token-to-type ratio found in the data source, Netzwerk A1. Each of the above sections is explained as follows:

3.1.2 Details Information About Vocabulary Used in Netzwerk A1

In detail, the number of tokens, types, the ratio of tokens to types, and the ratio of tokens to types per chapter can be seen in Table 2.

Displayed in the form of a diagram, the number of tokens can be described as follows:

The data in Fig. 1 shows that the number of tokens in each chapter is not the same. The number of tokens in chapters one to seven continues to increase but in the next chapter the number of tokens increases and decreases. Ideally, the number of tokens in each indicates a higher number. Increasing and developing the vocabulary needs to be done because it is based on the fact that the more a person has vocabulary, the better his

Table 1. Number of tokens and types of words

Chapter	Token	Type	Density Ratio (%) (Type/Token)	Consistency Ratio (Token/Type)
1	1171	293	25.02	4.00
2	1483	451	30.41	3.29
3	1744	508	29.13	3.43
4	1905	490	25.72	3.89
5	1971	474	24.05	3.89
6	2212	631	28.53	4.16
7	2438	670	27.48	3.51
8	1922	458	23.83	3.64
9	2390	625	26.15	4.20
10	2027	551	27.18	3.82
11	2218	602	27.14	3.68
12	2234	560	25.07	3.68
Total	23715	6313	26.62	3.99

Table 2. General Information to Vocabulary

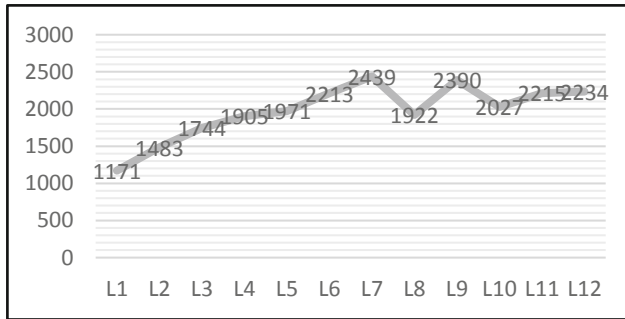| Aspects	Amount
Number of all words (tokens)	23715
Number of different words (types of words)	6313
Type/token ratio (measuring density ratio)	1: 0.26
Token/type ratio (measuring consistency ratio)	1: 3.99

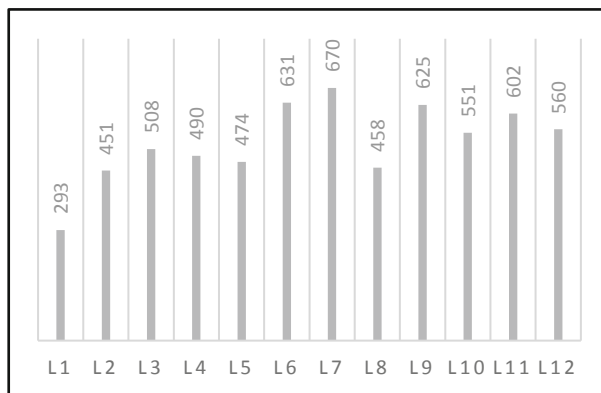**Fig. 1.** Number of tokens (wordcount)

Fig. 2. Number of types of words (vocabulary type)

language skills will be. Learners need to have mastery of vocabulary to participate in various communicative situations [4].

Meanwhile, the number of types of vocabulary in the data sources can be described in the form of a diagram as follows:

The data in Fig. 2 shows that the number of types in each chapter is also not the same. The number of types in chapters one to three continues to increase but in the next chapter the number of types increases and decreases.

Meanwhile, the token-to-type ratio can be described in the form of a diagram as follows:

3.1.3 Textbook Density Ratio

The density ratio of this book is 0.26 or 26%. The density ratio refers to the compactness of the text. The density ratio is used to describe the consistency of word types used in textbooks [5]. That is, how vocabulary with different word classes and numbers is presented in each chapter. Figure 3 shows the text density ratio of each chapter in the book. Density ratios should be consistent to show that different types of words are evenly
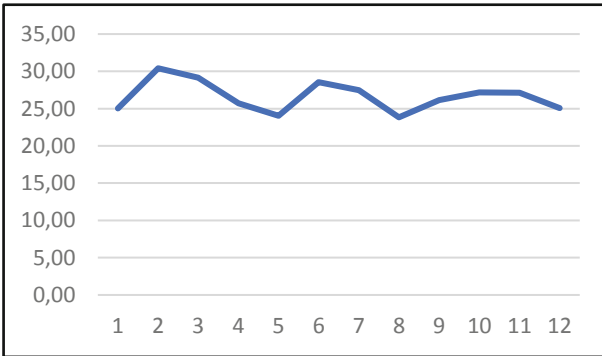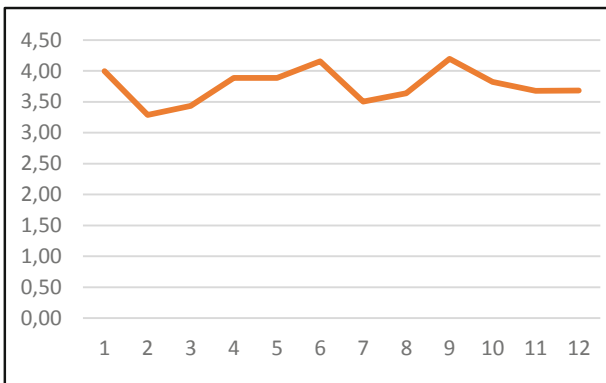
Fig. 3. Text density ratio

Fig. 4. Consistency ratio

distributed throughout the book. Figure 3 shows that the density ratio of each chapter in the book is not consistent. For example, more types of words can be found in chapter 1 than in chapter 2, which is indicated by a sloping curve.

3.1.4 New Vocabulary Recognition Consistency Ratio

The consistency ratio is obtained by dividing the total number of words (tokens) by the number of different words (types) found in the book. This calculation aims to measure the consistency of the book in introducing new vocabularies (Fig. 4).

Based on Table 1, the introduction of vocabulary in the Netzwerk A1 book is done after 3.99 words (token). In other words, the introduction of each new vocabulary is carried out at intervals of 3.99 words. Vocabulary is given in learning in stages per chapter, both in terms of the number, complexity of word phonotactic patterns, and the number of words in a sentence. Based on this description, it is known that a textbook can be based on the number of vocabulary words, the complexity of the phonotactic patterns of words, and the length of vocabulary in sentences. These criteria are those set by *Room to Read*, namely the complexity of words and sentences, the average number of

sentences per page, the average number of words per sentence, topics, and illustrations [6]. Ideally, through determining the criteria for each book, the learner's language skills increase with the level of the book being studied [7].

3.2 The Favorite Vocabulary Per Chapter

Using an entry application and manual analysis Kisyani et al. [8] identified the favorite vocabulary of elementary school students and compared the vocabulary between early grade elementary school and advanced. They revealed that from the data sources, the favorite vocabularies of early and advanced grade students were the same, even though the advanced class has more than 1,093 entries compared to the elementary class [8].

Meanwhile, this current research uses the *Simple Concordance Program* software feature, and data on the frequency of vocabulary in the data sources in each chapter is obtained, as shown in Table 3.

Table 3 shows that the 10 words with the highest 5th frequency are dominated by stopwords. Only a few words were found that were not included in stopwords: *Wohnung, arbeiten, kommen,* and *Uhr*. Based on the frequency, the words *Ich* (I) and *der* (third-person singular) are always the words with the three highest frequencies in each chapter. This shows that learning German emphasizes the learner's self as a learner. According to Vygotsky's theory, learning takes place when children work or learn to manage previously unlearned activities while such tasks are still within reach of their skills. This concept is referred to as the zone of proximal development [9]. The zone of proximal development refers to a situation in which the capabilities of students somewhat exceed those of the students themselves. The use of the word *'ich', 'sein' 'der' 'und' 'kommen'*

Table 3. The top 5 words

Chapter	Top 5 words				
	1	2	3	4	5
1	Ich	sein	der	und	kommen
2	Ich	der	und	arbeiten	sein
3	der	sein	Ich	einen	Und
4	der	ich	Und	mögen	Essen
5	ich	der	Sein	am	Uhr
6	ich	der	Sein	und	Haben
7	der	ich	Mein	und	Sein
8	der	ich	Wohnung	sein	Und
9	ich	der	Sein	und	Haben
10	ich	der	Und	sein	Dies
11	ich	der	Sein	und	Ich
12	ich	der	Sein	und	In

in sentences that beginners read, write, speak, and hear, are some examples of tasks that are still within reach.

4 Conclusion

The CEFR standard Netzwerk A1 book teaches German learning through vocabulary learning that switches to constantly rising at the beginning of a chapter, but then increases and decreases unevenly from the middle to the end of a chapter. In general, the density ratio of each chapter in the book is not consistent and new vocabulary is carried out at intervals of 3.99 words. In the Netzwerk A1 with 12 chapters, there are three favorite vocabularies in is *ich, der,* and *sein*. These words are an easy vocabulary for beginners.

Authors' Contributions. The authors conceived the original idea. Kharis writing an article, Suhartono analiting data and Kisyani proof reading.

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