

Vocabulary Assessment as a Tool for Predicting Speaking Fluency Among ESL Learners

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Abstract

Acquiring vocabulary is essential to learning a second language, especially when it comes to improving speaking fluency. A growing amount of research indicates that vocabulary knowledge may serve as a powerful underlying predictor of producing fluent speech, despite speaking fluency being frequently regarded as an independent oral skill. The current study examines the validity of vocabulary assessments as a means of forecasting ESL learners' speaking fluency. A quantitative correlational study design was used to gather information from 100 undergraduate ESL students taking English language classes. Standardized tests that focused on both receptive vocabulary and depth of vocabulary knowledge were used to measure vocabulary knowledge. Analytical fluency measures, such as speech rate, frequency and duration of pauses, and overall fluency ratings, were used to assess speaking fluency through structured speaking tasks. Descriptive statistics, simple linear regression, and Pearson product-moment correlation were used to analyze the gathered data. The results show a strong positive correlation between speaking fluency and vocabulary knowledge, indicating that students who possess more vocabulary are more likely to be proficient orally. The fact that vocabulary knowledge is a strong predictor of speaking fluency is further supported by regression analysis. The study's findings highlight the pedagogical significance of vocabulary-focused instruction for improving students' speaking fluency and general oral proficiency, and it suggests that vocabulary assessment can be a useful diagnostic and predictive tool in ELT classrooms.

Keywords: familiarity with vocabulary, Speaking with ease, evaluation of vocabulary, ESL students, Oral competence

1. Introduction

Speaking fluency is widely acknowledged as one of the most difficult skills for learners of English as a Second Language (ESL) to master. Despite extensive exposure to English and years of formal education, many learners still find it challenging to communicate their ideas smoothly and spontaneously. Their speech often includes frequent pauses, hesitations, repetitions, and self-corrections, which can hinder effective communication. As a critical aspect of oral proficiency, fluency plays an important role in academic achievement, professional communication, and social engagement. Therefore, enhancing speaking fluency remains a key focus in English Language Teaching (ELT) environments.

Among the various linguistic and cognitive factors influencing speaking fluency, vocabulary knowledge has consistently been recognized as a vital factor. Learners with limited vocabulary often struggle to retrieve suitable words quickly, resulting in slower speech rates and more frequent pauses. This

difficulty in lexical retrieval can overwhelm learners' cognitive resources, disrupting the smooth flow of speech. Conversely, learners who possess a richer and more accessible vocabulary can express their ideas more rapidly and accurately, leading to more fluent speech production.

Vocabulary knowledge is a complex, multidimensional concept. It goes beyond the sheer number of words a learner knows (vocabulary size) to include the depth of knowledge—such as understanding multiple meanings of words, their collocations, grammatical properties, and appropriate usage in context. Research on second language acquisition has highlighted the importance of both breadth and depth of vocabulary knowledge for language performance, especially in speaking. Lexical competence helps learners select the right words efficiently and produce utterances more automatically, which is essential for fluency.

Despite its significance, vocabulary assessment in many ELT contexts is often treated separately from speaking assessment. Traditional speaking tests usually focus on pronunciation, grammar, and overall communicative effectiveness, while vocabulary knowledge is assessed through written tests that may not accurately reflect oral language skills. This separation means the potential of vocabulary assessment as a predictor or diagnostic tool for speaking fluency is underutilized. This gap underscores the need for empirical research that systematically explores the relationship between vocabulary knowledge and speaking fluency.

Recently, there has been growing interest among researchers in data-driven studies that explore how specific linguistic factors influence oral fluency. Understanding how well vocabulary knowledge predicts speaking fluency could offer valuable insights for teachers, curriculum developers, and assessment designers. If vocabulary assessment proves to be a reliable indicator of speaking fluency, it could help identify learners' strengths and weaknesses early on, enabling more targeted instructional support.

This study aims to investigate the extent to which vocabulary assessment can predict speaking fluency among tertiary-level ESL learners. Using standardized tests measuring receptive vocabulary and depth of vocabulary knowledge, alongside objective analytic measures of speaking fluency, the study seeks to provide empirical evidence on the predictive link between lexical competence and oral fluency. The results are expected to contribute to the ELT research field and offer practical recommendations for vocabulary-focused teaching and assessment strategies to improve learners' speaking fluency.

2. Review of Related Literature

2.1 Vocabulary Knowledge in Second Language Learning

Vocabulary knowledge is widely seen as a vital part of overall language ability and a key factor in successfully learning a second language. It supports the development of all four language skills—listening, speaking, reading, and writing—and directly impacts learners' capacity to understand and use meaningful language. According to Nation (2001), vocabulary knowledge consists of two main aspects: receptive vocabulary, which includes the words learners can recognize and understand when listening or reading, and productive vocabulary, which involves the words learners can actively use in speaking and writing. Both of these aspects are important for effective communication, especially in speaking.

Research consistently shows that learners with larger vocabularies tend to do better in speaking tasks. A bigger vocabulary helps learners find words more quickly during real-time communication, reducing the mental effort needed to search for and choose words. This smoother word retrieval allows learners to focus more on planning their message and organizing their speech. Besides vocabulary size, the depth of

vocabulary knowledge is also important for speaking performance. Depth includes knowing multiple meanings of words, common word combinations (collocations), associations between words, and how to use words correctly in context. Learners with deeper vocabulary knowledge can speak more accurately, naturally, and fluently because they can quickly pick the right words and use them in grammatically and contextually appropriate ways.

2.2 Speaking Fluency

Speaking fluency is the ability to speak smoothly, continuously, and with little hesitation. It is often seen as a key sign of oral proficiency and communication skills. Segalowitz (2010) defines fluency by looking at the timing of speech, such as how fast someone talks, how often they pause, and when hesitation occurs. These timing features show how automatic language processing is, which is necessary for fluent speaking.

Fluency is usually measured through objective data like speech rate (how many words or syllables are spoken per minute), the average length of speech without pausing, and how frequently and how long pauses (both silent and filled) happen. In addition to these measurable factors, fluency is also judged subjectively with speaking rubrics that assess how smooth and continuous the speech sounds overall. Many factors influence the development of speaking fluency, including language knowledge, cognitive ability, emotions like anxiety or confidence, and chances to practice meaningfully. Among these, vocabulary knowledge is especially important because not having enough words can break the flow of speech and cause frequent pauses and restarts.

2.3 Connection between Vocabulary Knowledge and Speaking Fluency

An increasing number of studies suggest a strong link between vocabulary knowledge and speaking fluency. Many have found significant correlations between how many words learners know and various measures of oral fluency, showing that learners with larger vocabularies generally speak more smoothly and confidently. Knowing more words helps learners retrieve them faster, which supports more fluid and continuous speech.

However, despite these findings, vocabulary knowledge and speaking fluency are often studied separately, and little research has focused on whether vocabulary tests can reliably predict speaking fluency—especially for ESL learners at the university level. This lack of research points to the need for more studies that explore how well vocabulary knowledge can forecast fluency in speaking. Filling this gap will offer useful information for English language teachers and curriculum developers, particularly in settings where time and assessment resources are limited, helping to create more focused and effective approaches to teaching and assessing speaking skills.

3. Objectives of the Study

This study was conducted to investigate the role of vocabulary knowledge in predicting speaking fluency among tertiary-level ESL learners. The first goal is to evaluate the learners' vocabulary knowledge using standardized tests that assess both receptive vocabulary and the depth of vocabulary understanding. The second goal is to measure the learners' speaking fluency through structured speaking tasks, utilizing objective analytic measures such as speech rate, pausing patterns, and overall fluency ratings. The third goal is to analyze the nature and strength of the relationship between vocabulary knowledge and speaking fluency through appropriate statistical methods. Lastly, the study aims to determine whether vocabulary knowledge can serve as a significant predictor of speaking fluency, highlighting the potential of vocabulary assessment as a diagnostic and predictive tool in English Language Teaching settings.

Research Questions

This study aims to address the following research questions:

1. What is the extent of vocabulary knowledge among ESL learners at the tertiary level?
2. How fluent are ESL learners in speaking, as determined by objective fluency measures?
3. Is there a significant correlation between vocabulary knowledge and speaking fluency in ESL learners?
4. To what degree can vocabulary knowledge serve as a predictor of speaking fluency among ESL learners?

5. Research Hypotheses

Drawing from the study's objectives and the literature review, the following hypotheses have been proposed:

- H₁: A significant positive relationship exists between vocabulary knowledge and speaking fluency among ESL learners.
 - H₂: Vocabulary knowledge is a significant predictor of speaking fluency among ESL learners.
- (Optional null hypotheses, if required by your journal:)
- H₀₁: No significant relationship exists between vocabulary knowledge and speaking fluency among ESL learners.
 - H₀₂: Vocabulary knowledge does not significantly predict speaking fluency among ESL learners.

6. Methodology

6.1 Research Design

In order to ascertain the predictive function of vocabulary knowledge in speaking performance and to investigate the relationship between vocabulary knowledge and speaking fluency among ESL learners, the current study used a quantitative correlational research methodology. Since the goal of the study was to determine the strength and direction of the relationship between the two variables without changing them, a correlational design was deemed appropriate. Additionally, the possibility that vocabulary knowledge could significantly predict speaking fluency was investigated using basic linear regression analysis. The research hypotheses were empirically validated, statistical analysis was conducted, and objective measurement was made possible by this approach.

6.2 Participants

One hundred undergraduate ESL students engaged in English language classes at a postsecondary educational institution made up the study's participants. Purposive sampling was used to choose the students since they had official English teaching as part of their academic program and had comparable educational backgrounds. Based on their institutional placement records, the participants' English language levels ranged from intermediate to upper-intermediate.

Every participant had studied English as a second language for at least ten years and was not a native English speaker. Participants gave their informed consent before any data was collected, and they were reassured that their answers would be kept private and used only for research. The students were made aware that participation in the study was entirely optional and that they might stop at any time without facing any repercussions on their academic record.

6.3 Instruments

Data was gathered using two primary instruments: speaking fluency assessment tasks and vocabulary assessment tools.

6.3.1 Vocabulary Assessment

Standardized vocabulary examinations that measure both receptive and deep vocabulary knowledge were used to evaluate students' vocabulary. A multiple-choice vocabulary test that asked students to choose the right meanings of target words was used to gauge their receptive vocabulary knowledge. Items that tested learners' comprehension of word associations, collocations, and contextual usage were used to gauge their depth of vocabulary knowledge. To guarantee content validity and reliability, the vocabulary assessments were modified from well-known tools utilized in earlier second language studies.

The sum of the scores from the depth-based and receptive tests was used to get the overall vocabulary score. In the statistical study, this composite score served as the independent variable.

6.3.2 Speaking Fluency Assessment

Structured speaking tasks intended to stimulate spontaneous oral production were used to measure speaking fluency. Each task lasted roughly two minutes and consisted of a speaking prompt based on an opinion and a brief image description. To guarantee accuracy in analysis, digital recording devices were used to capture the participants' spoken responses on audio.

Objective analytical metrics such as speech rate (words per minute), pause frequency and duration, and mean interval between pauses were used to assess speaking fluency. Additionally, a defined fluency rubric was used to assign an overall fluency score. A second trained rater independently rated a subset of recordings to improve reliability, and inter-rater reliability was computed.

6.4 Data Collection Procedure

There were two stages to the data collection process. During the first phase, participants had a given amount of time to finish the vocabulary test in a controlled classroom environment. To reduce outside distractions, speaking exercises were given one-on-one in a quiet setting during the second phase. Every speech was captured on tape and then transcribed for examination. All participants received standardized instructions to guarantee uniformity in the way the test was administered.

6.5 Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used to examine the data that was gathered. The participants' overall levels of speaking fluency and vocabulary knowledge were assessed using descriptive statistics, such as mean, standard deviation, and range. To investigate the direction and intensity of the association between speaking fluency and vocabulary knowledge, a Pearson product-moment correlation analysis was used.

Speaking fluency was the dependent variable and vocabulary knowledge was the independent variable in a straightforward linear regression analysis conducted to address the study's predictive component. A significance criterion of $p < 0.05$ was established. The research hypotheses were tested and conclusions about the function of vocabulary assessment in predicting speaking fluency among ESL students were drawn from the statistical analysis results learners.

7. Results

The results of the study, which looked at the connection between speaking fluency and vocabulary kno-

wledge as well as the predictive function of vocabulary knowledge, are shown in this section.

7.1 Descriptive Statistics

To ascertain the general levels of vocabulary knowledge and speaking fluency among the ESL students, descriptive statistics were calculated.

Table 1: Descriptive Statistics of Vocabulary Knowledge and Speaking Fluency (N = 100)

Variable	Mean	Standard Deviation	Minimum	Maximum
Vocabulary Knowledge	68.45	8.72	45	85
Speaking Fluency	70.12	9.15	48	88

The findings show that the participants' speaking fluency and vocabulary knowledge ranged from moderate to high. Significant score variation, however, points to variations in each learner's oral performance and lexical competency.

7.2 Correlation between Vocabulary Knowledge and Speaking Fluency

A Pearson product-moment correlation analysis was used to investigate the connection between speaking fluency and vocabulary knowledge.

Table 2: Correlation between Vocabulary Knowledge and Speaking Fluency

Variables	Vocabulary Knowledge	Speaking Fluency
Vocabulary Knowledge	1.000	
Speaking Fluency	0.72**	1.000

**p < 0.01

The findings show a statistically significant positive connection (r = 0.72) between speaking fluency and vocabulary knowledge at the 0.01 level. This suggests that students who possess a larger vocabulary also typically exhibit more fluent speech.

7.3 Regression Analysis

To ascertain whether vocabulary knowledge could significantly predict speaking fluency, a simple linear regression analysis was performed.

Table 3: Simple Linear Regression Analysis Predicting Speaking Fluency

Predictor Variable	B	Std. Error	β	t	Sig.
Constant	22.36	4.18	—	5.35	.000
Vocabulary Knowledge	0.70	0.06	0.72	11.67	.000

There was statistical significance in the regression model (p < 0.001). About 52% of the variation in speaking fluency scores could be explained by vocabulary knowledge (R² = 0.52). This demonstrates that among ESL learners, vocabulary knowledge is a strong predictor of speaking fluency.

8. Discussion

The results of this study offer compelling empirical evidence that vocabulary knowledge helps ESL learners become more fluent speakers. Speaking fluency and vocabulary knowledge have a strong positive link, indicating that students who possess a wider range of lexical resources are better able to produce spoken language with fluency. This result is in line with earlier studies that highlight the significance of lexical competence in producing speech in real time.

This association is further supported by the regression analysis, which shows that speaking fluency is significantly predicted by vocabulary knowledge. Increased vocabulary scores were associated with better speech flow, less pauses, and faster speech rates. This is due to more effective lexical retrieval mechanisms, which lessen the cognitive load when producing speech and enable students to concentrate on creating messages rather than words searching.

Since students who had a deeper vocabulary seemed to do better on fluency tests, the results also lend credence to Nation's (2001) distinction between vocabulary size and depth of knowledge. These results support Segalowitz's (2010) theory that automatic language processing reflects fluency. Learners are more likely to attain automaticity in speaking, which improves fluency, when their vocabulary knowledge is strong.

In terms of pedagogy, the results emphasize the necessity of including vocabulary-focused training within speaking exercises as opposed to treating speaking and vocabulary as distinct elements. As a result, vocabulary assessments can be used as a useful diagnostic tool to identify students who could have trouble speaking fluently as well as a gauge of lexical knowledge.

9. Conceptual Framework of the Study

Second language acquisition theory, which highlights the importance of lexical competence in oral language output, serves as the foundation for the conceptual framework of this study. Speaking fluency is viewed as the dependent variable in this paradigm, whereas vocabulary knowledge—which includes both receptive and deep vocabulary—is conceived as the independent variable.

Speaking fluency is directly impacted by vocabulary knowledge since it facilitates continuous speech production, decreases hesitation, and speeds up lexical retrieval. Objective fluency metrics including speech rate, pause frequency, and mean run duration are used to operationalize speaking fluency. According to the framework, having a larger vocabulary improves automaticity in language processing, which raises fluency.

This framework provides a theoretical foundation for the study's regression model by illuminating a unidirectional association between speaking fluency and vocabulary knowledge. Additionally, it reinforces the value of vocabulary-focused instruction for producing fluent speakers by supporting the use of vocabulary evaluation as a predictive and diagnostic tool in ELT classrooms.

10. Conclusion

The goal of the current study was to ascertain whether vocabulary assessment may be a valid indicator of oral fluency and to look into the connection between speaking fluency and vocabulary knowledge among ESL students. Standardized vocabulary exams and structured speaking tasks were used to gather data from 100 undergraduate ESL students using a quantitative correlational research methodology. The study's conclusions offer convincing empirical support for the idea that vocabulary knowledge is crucial to the growth of speaking fluency.

The findings showed a robust and statistically significant positive correlation between speaking fluency and vocabulary knowledge. Higher vocabulary knowledge levels were associated with increased fluency, which was manifested by smoother speech production, faster speech rates, and fewer pauses. Additionally, the regression analysis demonstrated that a large amount of the variance in learners' fluency performance may be explained by vocabulary knowledge, which is a significant predictor of

speaking fluency. These results lend credence to theoretical viewpoints in second language learning that highlight how lexical competence promotes automaticity in speech output.

The study also emphasizes how critical it is to see vocabulary knowledge as a multifaceted concept. Fluent speech was found to be influenced by both receptive vocabulary and depth of vocabulary knowledge, indicating that learners need to gain a deeper comprehension of word usage, collocations, and contextual meanings before simply being exposed to vocabulary is enough. This supports the idea that expanding one's vocabulary is essential to speaking proficiency and should not be seen as an afterthought to language acquisition.

Overall, the study adds to the corpus of ELT research by showing that vocabulary evaluation can serve as a useful diagnostic and predictive tool for speaking fluency in addition to being a measure of lexical competence. The study provides useful information for language instructors, curriculum developers, and assessment professionals by clearly demonstrating the connection between oral fluency and vocabulary knowledge. The study's sample size and concentration on a single educational context limit its applicability despite its contributions. This study could be expanded in the future by incorporating bigger and more varied learner populations, using longitudinal designs, or looking at more linguistic and affective factors that affect speaking fluency.

11. Pedagogical Implications and Recommendations

The study's conclusions have significant pedagogical ramifications for teaching English. First, speaking-focused courses should place more of an emphasis on vocabulary education. Instead of treating speaking and vocabulary as distinct educational components, teachers are urged to include vocabulary development exercises straight into speaking assignments. Role-playing, conversations, and presentations are examples of activities that should be planned to encourage the active and significant application of recently acquired language.

Second, a diagnostic tool for identifying students who could struggle with speaking fluently is vocabulary evaluation. Frequent evaluation of vocabulary depth and size can assist educators in developing focused interventions and offering tailored assistance. Third, teaching collocations, word connections, and contextual usage should help students gain deeper vocabulary knowledge in addition to expanding their vocabulary.

Lastly, in order to provide teachers with useful tools to improve their students' lexical competence, teacher training programs ought to highlight the connection between speaking fluency and vocabulary knowledge. Additionally, in order to promote more efficient and comprehensive language learning outcomes, institutions are urged to implement evaluation procedures that acknowledge vocabulary knowledge as a crucial predictor of oral proficiency.

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