



# The Effect of Effective Combination of Informal and Formal Learning in a Formal Learning Environment on High School Students' English Vocabulary Acquisition

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**Abstract.** In recent years, the rapid development of technology and the widespread popularization of the Internet have significantly increased opportunities and platforms for informal learning. This has expanded knowledge acquisition and learning channels beyond traditional classroom environments, with students leveraging online resources and social media to create immersive learning experiences and enhance their efficiency. While researchers have recognized the importance of informal learning in lifelong learning, current studies primarily focus on off-campus activities. There remains a need to explore the effective integration of formal and informal learning and its impact on high school students' English vocabulary acquisition. This study examines how to combine these learning strategies to improve vocabulary acquisition, providing practical guidance for educators and broadening learning opportunities for students.

**Keywords:** combination of informal and formal learning, vocabulary acquisition, high school learning

## 1 Introduction

In the digital age, informal learning has become an important way for high school students to acquire English vocabulary. However, how to effectively integrate informal learning into formal classroom environments to enhance students' vocabulary acquisition remains a challenge in the field of education. This study aimed to investigate the effects of combining informal and formal learning in a formal learning environment on high school students' English vocabulary acquisition. Through an empirical study of 120 senior high school students in a secondary school in Sichuan Province, we found that combining informal learning resources (e.g., bilingual subtitled movies) and formal teaching methods can significantly improve students' vocabulary comprehension and application. This study provides educators with practical guidance for integrating informal learning resources into English language teaching, with the aim of broadening students' learning opportunities and improving learning efficiency.

## 2 Effective Integration of Informal and Formal Learning

In lifelong learning, in addition to limited formal learning environments, our learning takes place in informal environments. Wang Linlin et al. believe that learning in informal environments can be either an unintentional behavior or a pre-determined activity with a learning purpose and intention.<sup>[1]</sup> Haim Eshach concludes from previous research that informal learning is spontaneous, unstructured and cannot be assessed.<sup>[2]</sup> Therefore, the author believes that informal learning can occur in both formal and informal learning environments. However, in the current education system, the most emphasis is placed on the formal learning of primary and secondary school students in formal learning environments, most educators overlook the importance of informal learning. As informal learning is spontaneous, unstructured and challenging for primary and secondary school students, and formal learning is mandatory and institutionalized, it is possible to effectively combine the two in order to improve the learning effectiveness of primary and secondary school students. Informal learning and formal learning combined learning mode can be traced back to Dewey's "Democracy and Education", in this work, Dewey believes that "the philosophy of education must be solved one of the most important problems is to maintain a proper balance between informal and formal, accidental and conscious forms of education." In foreign countries, many researchers have already been in the field of education.<sup>[3]</sup> "Abroad, many researchers have seen the need to combine informal and formal learning. Surrounded by Science: Learning Science in Informal Environments, published by the National Research Council (NAC), states that the quest for intersections and connections between schools and informal education organizations focuses on field trips, out-of-school programs, and teacher professional development. activities, out-of-school programs, and teacher professional development programs that help children expand their learning opportunities."<sup>[4]</sup>

According to many national and international research reports, most educational researchers have focused on the integration of informal and formal learning in informal settings (e.g., libraries, science and technology centers, virtual communities, etc.), that is, they have generally studied the effective integration of informal and formal learning in informal settings, and have conducted fewer studies on the effective integration of informal and formal learning in formal settings. In other words, they generally study the effective combination of informal and formal learning in informal environments, but less on the effective combination of informal and formal learning in formal environments. Although the learning platform provided by formal environments only accounts for 20% of people's learning career, it is the most important platform for fostering high school students' learning.<sup>[5]</sup> As the traditional formal learning has deficiencies such as homogenization and modeling, new learning and education methods have to be introduced to make up for it.

## 3 Vocabulary Teaching

Vocabulary is the focus of teaching English in China. However, there are still some problems in English vocabulary teaching in China. In formal learning, English learners

are not motivated to learn vocabulary. Most of the learners' memorization of words is done under the stimulation of the educators, who often urge the learners to complete the mechanical memorization of words through the test of dictation, which greatly reduces the motivation of the learners. Secondly, there is a lack of context. In order for learners to achieve the appropriate vocabulary, educators mostly use vocabulary lists to make learners memorize vocabulary mechanically, and learners usually only memorize the corresponding Chinese meanings of English words, while ignoring the meanings of certain words in certain contexts, which leads to learners failing to understand the meanings of the corresponding sentences. Thirdly, because the meanings of the vocabulary words examined in high school are relatively homogeneous, learners tend to memorize only the most common Chinese meanings when memorizing vocabulary words, resulting in other meanings being ignored.

Nation (2001) states that L2 learners need to gradually build up their knowledge of new words through repeated exposure to new words in the input<sup>[6]</sup>. For high school English learners, it is difficult to change vocabulary memorization from short-term to long-term because of the low probability of repetition of English vocabulary due to the single exposure environment. In order to realize the transformation of memory types, it is necessary to intervene in formal learning to help students consolidate and strengthen their vocabulary memory. Because of the personalized nature of informal learning, educators cannot accurately locate the informal learning dynamics of all learners, so they have to settle for the second best, integrating informal learning resources into formal learning. As far as vocabulary is concerned, informal learning resources that can provide a large amount of vocabulary in a focused way are English movies. Dukhayel (2022) selected 63 EFL students as the subjects of his study, and found that watching movies has a positive effect on incidental vocabulary learning, and that frequency of vocabulary and visual imagery have a facilitating effect on vocabulary learning.<sup>[7]</sup>

To summarize, scholars at home and abroad have focused on the effective combination of informal and formal learning in informal environments, and most of the research subjects are in the sciences, with less research on the learning of language. In this study, high school students are selected as the research object to study the effect of effective combination of informal learning and formal learning in formal environment on English vocabulary acquisition.

## **4 Research Design**

### **4.1 Research Target**

In this study, three classes with similar average scores in English in the first year of high school in a middle school in Sichuan Province were selected as the research subjects, and a total of 120 individuals participated in this study.

### **4.2 Research Tools**

1. Film and television resources

In this study, we will use a bilingual subtitled soundtrack as an informal learning resource. The bilingual subtitled movie is *We Bare Bears*, which is a comedy story about three bears integrating into the human society. The plot is witty and positive, and the vocabulary difficulty is moderate, which is very suitable for high school students' learning materials. In this experiment, the first episode of season 1 of *We Bare Bears* is selected as the material for the experiment, which includes 46 key vocabulary phrases.

#### 2. The English Vocabulary Acquisition Test

It includes three types of questions to assess students' understanding and application of vocabulary. Reading Words: 10 words worth 10 marks, testing pronunciation mastery. Write Chinese Meaning and Make Sentences: 20 words worth 40 marks (1 mark for meaning and 1 mark for sentence), testing word meaning. Understand and Use Words in Context: 25 words worth 50 marks, requiring students to understand and use words in sentences, testing comprehensive usage beyond mechanical memorization.

### 4.3 Research Process

This study was conducted with three parallel first-grade classes in a high school in Sichuan Province, each with similar English achievement levels. The classes were divided into three groups: A, B, and C. Group A studied only formally, with the teacher explaining 46 key vocabulary phrases in a traditional manner. Group B studied only informally by watching provided experimental materials without any explanation. Group C combined both methods, watching the experimental materials first, followed by teacher explanations of the 46 key phrases. After the learning sessions, all groups completed a vocabulary acquisition test. For the first question type, the 120 students individually read words to the teacher, who scored them on pronunciation accuracy. The second and third question types were completed within 30 minutes. The test papers were then collected and analyzed.

## 5 Findings and Discussion

### 5.1 English Vocabulary Acquisition Test Results

Table 1 shows that Group C outperformed Groups A and B on the vocabulary test, especially in the third question type. This supports the hypothesis that combining informal and formal learning enhances students' ability to understand and apply vocabulary in context. Group C benefited from rich contextualized vocabulary input through informal learning and systematic explanations through formal learning, leading to better mastery of vocabulary meanings and usage.

Group A performed better in the word-reading questions, reflecting the advantages of traditional formal learning in pronunciation teaching and basic vocabulary memorization. Under this mode of learning, the teacher's explanation of key vocabulary lacked context, and many students could only get a rough idea of the corresponding Chinese meanings of the English words, so they did not perform as well as Group C in sentence construction and comprehension application questions. This suggests that by relying

only on formal learning, students may have limitations in the contextual understanding and flexible use of vocabulary.

Although the students in Group B were able to access the vocabulary in a more natural context, their overall performance on the test was poorer due to the lack of systematic explanation and instruction. This shows that although informal learning can stimulate students' interest and increase their exposure to language, students may have difficulty in grasping the precise meaning and usage of vocabulary without professional guidance.

**Table 1.** mean value of each question

research group	number of people	Mean value of the first question	Mean value of the second question		Mean value of the third question	overall mean score
			Chinese Meaning	sentence-making		
Group A	39	7.95	16.51	14.69	38.44	77.59
Group B	43	5.67	13.33	10.95	35.07	65.02
Group C	38	7.89	17.31	15.84	43.79	84.84

Table 1 shows differences in the mean values of Chinese meanings and sentence-making among the three groups, indicating that knowing the Chinese meanings alone doesn't ensure correct vocabulary usage in context. This is a major problem for high school students learning English vocabulary. Some students struggle with verb usage, unsure if verbs are transitive or intransitive, and often misuse prepositions, leading to sentence construction errors.

Table 2 shows a smaller mean difference between groups A and C than group B, highlighting the importance of teacher explanations in vocabulary learning. Group C, with informal learning materials, had fewer sentence construction errors due to better contextual understanding.

**Table 2.** the difference value

research group	Difference between the mean values of Q II-1 and Q II-2
Group A	1.82
Group B	2.38
Group C	1.47

## 5.2 Discussion

The English vocabulary acquisition test shows that combining informal and formal learning is more effective than using either method alone. Informal learning creates a rich, authentic language environment that stimulates interest, while formal learning provides systematic guidance for efficient vocabulary understanding and memorization.

Together, these methods help learners appreciate vocabulary in context and use it accurately. For instance, students remembered "shot" commonly as "to shoot" or "to fire." In the informal learning resources, such as a movie, they understood "nice shot" as a good attempt. With the teacher's explanation, they learned that "shot" also means injection and "give it a shot" means to try. Test results showed that Group C, using combined learning, understood more meanings of "shot" than Groups A and B.

The combination of informal and formal learning is more effective than informal learning, as learners can receive professional explanations and guidance, and have a deeper understanding of the content in the informal learning materials. For example, the words "rectangular", "conspiracy", "photographic", "perimeter", etc. appear in this movie. These words are complicated and it is difficult for Group B to get the words in the passing subtitles, and there is no repetition of the words, which leads to Group B scoring significantly lower than Groups A and C in the second question of writing the meaning of the words in Chinese. In group B, the movie is the only learning content, and students are more likely to pay attention to the plot of the movie and ignore the correct usage of some key words in the subtitles, which results in group B scoring significantly lower than groups A and C in all the questions.

In addition, the experimental design reflects the inclusiveness of students with different learning abilities. Through the diversified question designs students' abilities in different aspects of vocabulary learning were examined, and students' vocabulary acquisition levels were comprehensively assessed from pronunciation to comprehension to application.

## 6 Conclusion

This study examined the impact of three teaching modes—formal learning, informal learning, and combined learning—on high school students' English vocabulary acquisition. The main findings are: (1) Combined informal and formal learning is more effective than either method alone for vocabulary teaching. (2) Informal learning increases interest but may result in inaccurate vocabulary comprehension without teacher guidance. (3) Formal learning provides systematic knowledge but lacks contextualized usage.

The study highlights the importance of combining informal and formal learning for effective vocabulary acquisition, illustrating the limitations of using a single mode. This blended approach provides valuable insights for English teachers designing vocabulary activities. Teachers should create rich, authentic English contexts, such as using films and TV shows, to immerse students. Informal resources can be adapted based on student acceptance levels, like using English songs for fill-in-the-blank activities to enhance interest and emotional connection with vocabulary. Pronunciation is crucial, and informal materials offer authentic examples for students to imitate, improving accuracy. Teachers can also use basic pronunciation patterns to help students memorize words efficiently.

Although this study concluded that the combined informal and formal learning model has a facilitating effect on vocabulary acquisition of high school students in a

formal learning environment, there are some limitations. First, the sample size was small, and it would have been more representative if the sample had been enlarged. Second, the choice of informal materials was relatively homogeneous, and if a variety of informal learning resources could be used for evidence, the results would be more generalizable. Finally, the scope and content of the vocabulary acquisition test paper need to be further improved. In conclusion, how to combine informal and formal learning in a formal learning environment to improve students' vocabulary acquisition deserves further exploration by ELT researchers.

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