

DEVELOPING THE PROFESSIONAL VOCABULARY OF FOOD TECHNOLOGY STUDENTS USING MODERN INFORMATION TECHNOLOGIES

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Abstract: This study investigates the effectiveness of integrating modern information technologies (MITs) in developing the professional vocabulary of undergraduate food technology students. A quasi-experimental design was employed with two groups: an experimental group receiving vocabulary instruction enhanced by digital resources and online platforms, and a control group receiving traditional vocabulary instruction. Data were collected through pre- and post-vocabulary tests, and analyzed using statistical methods to determine the impact of MIT integration on vocabulary acquisition and retention. The findings indicate a significant improvement in the professional vocabulary of students in the experimental group, suggesting that MITs offer valuable tools for enhancing language learning in specialized fields.

Keywords: professional vocabulary, Food technology education, Modern information technologies, Digital resources, online learning, tools, Vocabulary acquisition

1. Introduction.

The acquisition of a specialized professional vocabulary is crucial for students pursuing degrees in technical fields such as food technology. A strong command of discipline-specific terminology enables effective communication, comprehension of technical literature, and successful engagement in professional practice. [1, 213-238] However, students often face challenges in mastering the extensive and nuanced vocabulary inherent in food science and technology.

Traditional methods of vocabulary instruction, such as rote memorization and textbook-based exercises, may not always be engaging or effective in promoting deep understanding and long-term retention. Modern information technologies (MITs), including digital resources, online learning platforms, multimedia tools, and interactive applications, offer promising avenues for enhancing vocabulary acquisition in various educational contexts. [2, 31-47]

In the field of food technology education, the integration of MITs has the potential to provide students with authentic and contextualized exposure to professional vocabulary. Digital resources such as online glossaries, scientific databases, interactive simulations, and virtual laboratory environments can offer rich and engaging learning experiences. Furthermore, online platforms facilitate

collaborative learning, peer interaction, and access to a wider range of authentic materials. [3, 183-214]

This study aims to investigate the impact of integrating MITs into vocabulary instruction on the development of the professional vocabulary of undergraduate food technology students. Specifically, it seeks to determine whether students receiving vocabulary instruction enhanced by digital resources and online platforms demonstrate greater vocabulary gains and retention compared to students receiving traditional instruction.

2. Methods

Participants: The study involved 60 undergraduate students enrolled in a food technology program at Karshi State Technical University. Participants were randomly assigned to either an experimental group (n=30) or a control group (n=30). Both groups had similar levels of English proficiency as determined by a preliminary language assessment.

Research Design: A quasi-experimental pre-test/post-test control group design was employed.

Instruments: Pre- and Post-Vocabulary Tests: Two identical vocabulary tests were developed, consisting of 50 discipline-specific terms relevant to the food technology curriculum. The tests included multiple-choice questions, matching exercises, and fill-in-the-blank tasks designed to assess both receptive and productive vocabulary knowledge. The tests were validated by two experienced food technology instructors and pilot-tested for reliability.

Procedure:

Control Group: The control group received traditional vocabulary instruction over a period of eight weeks. This instruction involved direct teaching of vocabulary items from the course textbook, dictionary work, and traditional paper-based exercises.

Experimental Group: The experimental group received vocabulary instruction integrated with MITs over the same eight-week period. This included:

- Access to an online glossary of food technology terms with definitions, examples, and pronunciations.
- Interactive vocabulary learning modules incorporating multimedia elements (images, videos, animations).
- Online discussion forums for collaborative vocabulary learning and peer interaction.
- Use of scientific databases and online articles related to food technology.
- Assignments involving the creation of digital flashcards and vocabulary mind maps.

Both groups received the same core food technology content during their regular coursework. The vocabulary instruction was supplementary and focused on reinforcing and expanding their understanding of key professional terms.[8, 57]

Data Analysis

The data collected from the pre- and post-vocabulary tests were analyzed using descriptive statistics (means and standard deviations) and inferential statistics (independent samples t-tests and paired samples t-tests) to compare the vocabulary gains of the two groups and the improvement within each group.

3. Results

The results of the pre-vocabulary test showed no statistically significant difference between the control group ($M=28.5$, $SD=4.2$) and the experimental group ($M=29.1$, $SD=3.9$), $t(58) = -0.65$, $p = 0.52$.

The post-vocabulary test results revealed a statistically significant difference between the two groups. The experimental group ($M=42.3$, $SD=3.5$) scored significantly higher than the control group ($M=35.8$, $SD=4.1$), $t(58) = 7.12$, $p < 0.001$.

Paired samples t-tests indicated a significant improvement in vocabulary scores from the pre-test to the post-test for both groups. However, the magnitude of improvement was significantly greater for the experimental group (mean difference = 13.2, $SD = 2.8$, $t(29) = 25.9$, $p < 0.001$) compared to the control group (mean difference = 7.3, $SD = 3.1$, $t(29) = 12.9$, $p < 0.001$).

4. Discussion

The findings of this study strongly suggest that the integration of modern information technologies is an effective approach for developing the professional vocabulary of food technology students. The experimental group, which received vocabulary instruction enhanced by digital resources and online platforms, demonstrated significantly greater vocabulary gains and retention compared to the control group receiving traditional instruction. [6, 112]

The positive impact of MITs can be attributed to several factors. Digital resources provide students with more engaging and interactive learning experiences, facilitating deeper understanding and better retention of new vocabulary. The use of multimedia elements, such as images and videos, can help students visualize abstract concepts and connect vocabulary with real-world applications in food technology. [7, 22]

Online learning platforms foster collaborative learning and peer interaction, allowing students to discuss and clarify the meaning and usage of professional terms. Access to authentic materials, such as scientific databases and online articles, exposes students to vocabulary in meaningful contexts, promoting a more nuanced understanding of its application.

The findings of this study align with previous research highlighting the benefits of technology-enhanced language learning. [4, 201-205] The integration of MITs not only enhances vocabulary acquisition but also develops students' digital literacy skills, which are increasingly important in today's technologically driven world. [5, 37]

5. Conclusion

This study provides empirical evidence for the effectiveness of integrating modern information technologies in developing the professional vocabulary of food technology students. The results demonstrate that MIT-enhanced vocabulary instruction leads to significant improvements in vocabulary acquisition and retention compared to traditional methods. These findings have important implications for curriculum design and pedagogical practices in food technology education, suggesting that educators should consider incorporating digital resources and online platforms to enhance students' mastery of discipline-specific terminology. Future research could explore the long-term impact of MIT integration on vocabulary retention and the effectiveness of specific types of digital tools for different vocabulary learning tasks. [9, 10, 15-63]

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