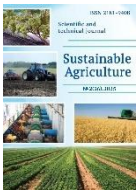
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Teaching Subject-Specific Terminology to Agricultural Students: Methods and Approaches

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a r t i c l e i n f o

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a b s t r a c t

This article describes optimal approaches for teaching vocabulary to students specializing in agriculture. Because the agricultural domain contains numerous technical and scientific vocabulary, students need to master this terminology in order to understand their specialty deeply and interact intellectually and practically in their discipline. The article analyzes modern didactic methods alongside uses of digital technology, contextual teaching, and immersion into the subject as teaching ways to learn effectively. In addition, the article examines existing approaches, discovers the voids, and provides recommendations for the gaps found relating to acquiring vocabulary by agricultural students.

1. INTRODUCTION

The wide-ranging and dynamic field of agriculture appreciates the value of developing vocabulary, which students are expected to learn at the onset of their education. The cultivation of vocational vocabulary permits the students to take part in professional conversations, read relevant materials, and synthesize practice with the theories learned. Nonetheless, teaching any form of vocabulary is challenging, and in this case, the problem is even more pronounced because of the complex nature and scope of the terminology used. The goal of this article is to construct and analyze comprehensive strategies for teaching the agricultural vocabulary to university learners through a combination of old and new techniques.

The branches of study within agriculture include plant and animal sciences, soil science, and agricultural automation, all of which have associated specialized vocabulary. Nation (2001) reinforces the importance of vocabulary, defining it as a vital dimension of language proficiency and subject understanding for learners with heavy subject load courses. The work of Dudley-Evans and St. John (1998) has also pointed out that ESP students are best served when provided with a strong blend of teaching content knowledge and language skills. The use of vocabulary is essential, not only for attaining academically but also for an international level collaboration and enabling comprehension of worldwide agricultural advancements. Understanding specific topic texts requires not just academic reading but also technical literacy, as Stoller (2011) mentions. In the absence of adequate terminology teaching, students will not grasp the content, causing gaps in their learning and application. Moreover, in an increasingly English-medium instruction (EMI) globalized education era, non-native students encounter even more challenges. Students need to acquire both the language and the content at the same time, which makes systematic vocabulary instruction crucial (Flowerdew, 2013). Gillett and Wray (2006) and Basturkmen (2010) lamented the absence of specialized vocabulary instructional design in the developed ESP paradigms, which have dominated the field.

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In addition, studies of second language acquisition (Larsen-Freeman & Anderson, 2011) argue for stroking retention of vocabulary through different modalities by repeated exposure and purposeful utilization. With the aid of corpus tools, frequency list, and semantic mapping, instructors will target mouth overload and instructions become easier to scaffold. Stronger outcomes and sustained engagement emerge, as Tomlinson (2011) argues, through a constructive approach that sets learners, real life activities, and critical thinking exercises as the focal point. This paper furthers the discussion by exploring classroom approaches, analyzing teaching models, and providing results from observations on teaching techniques for agricultural terms. The conclusions derived from this study seek to assist curriculum planners, ESP teachers, and educational strategists in enhancing policy frameworks concerning language learning within the scope of agriculture.

2. METHODS

The adopted methodology for this particular study is a mixed-method approach, which integrates both qualitative and quantitative data collection methods. A questionnaire survey was given to 120 undergraduate agricultural students from three universities. The survey included stratified Likert-scale questions centered on teaching preferences and overrides, perceived effectiveness of learning tools, and terminology retention. In addition, semi-structured interviews were conducted with 10 ESP instructors specializing in agriculture. Their responses were coded and thematically analyzed for patterns regarding teaching approaches.

Moreover, classroom observations for teaching in six agricultural language classrooms were conducted, and the application of various instructional techniques such as Task-Based Learning (TBL), digital flashcard drills, and field immersion activities were recorded to assess student participation and vocabulary retention. For measurement of reminiscence and correct terminology usage, assessment outcomes and assignments submitted by students were also scrutinized.

Purposive sampling was used to select the 10 ESP instructors for interviewing. Additionally, all instructors held postgraduate qualifications and possessed at least two years of practical experience, confirming their availability as suitable respondents who met the selection criteria. Descriptive statistics were generated using SPSS, and charts and tables were compiled on Excel. Moreover, students' written reports were subjected to error analysis to examine the extent and nature of terminological errors made within different pedagogical frameworks.

3. MAIN PART

1. Importance of Terminology in Agricultural Education

The role of terminology in agrarian education cannot be overemphasized because it serves as the foundation and basis for understanding fields of study such as agronomy, horticulture, soil science, and animal husbandry as livestock management is often dubbed. Students cannot appreciate the understanding of sophisticated manuals, policy documents, research articles, or any other literature without understanding the precise meanings of words and their relevant applications.

2. Problems Related to the Teaching of Agricultural Terminology

The difficulty level of understanding of agricultural terminology, alongside its Latin roots, lies in the fact that it requires interdisciplinary knowledge. For a non-native English speaker, the challenge becomes even greater as some terms are highly abstract and the meanings and usage tend to vary based on context. There are also didactic considerations such as how much vocabulary teaching should be done vis-a-vis other curricular expectations.

3. Old Approaches of Teaching Terminology.

Old approaches include memorizing terms, translation exercises, glossary creation, and reading comprehension tasks. While foundational knowledge may stem from these methods, lacking the contextual richness necessary for deep understanding is fundamentally deficient. It remains exceptionally useful, however, when combined with an eclectic method that integrates alternative approaches.

4. Innovative and Contextual Approaches

Newer innovations in pedagogy emphasize that learning and assimilation of terminology should be based on context and communicative approaches. This includes:

Task-Based Learning (TBL): where students are encouraged to apply the use of agricultural terms in given real-life contexts.

Project-Based Learning (PBL): where the use of agricultural terminology takes place in long-term projects such as crop planting, soil testing, etc.

***Co**ntent and Language Integrated Learning (CLIL):* Merges learning subjects with language learning.

5. Integrating Digital Tools

New technologies allow for the use of educational websites, mobile apps, and even interactive games for reinforcing vocabulary learning. Tools like Quizlet, Kahoot!, and Anki assist learners in vocabulary term retention and usage through paced repetition and game-like elements.

6. Use of Visual Aids and Field Work

Visual materials, including infographics and charts, aid in the understanding of more abstract concepts. Fieldwork and practical exercises enable learners to meet the terms in a real-world context, helping them to retain and understand better.

LEVEL OF STUDY ON THE TOPIC

Many researchers have focused on teaching vocabulary relevant to English for Specific Purposes (ESP), especially in the technical and scientific fields. Hutchinson and Waters (1987) advanced the underpinning concepts of ESP, and more contemporary studies focus on learner and conversation-centered methods. In agricultural studies, some experts like Dudley-Evans and St. John have supported the use of needs-based syllabuses that integrate language teaching and professional skills. Nevertheless, there is much less focused research on the learning of agricultural terms, particularly in non-English speaking countries.

The study was conducted with third-year undergraduate agricultural students from three different universities. A mixed-method approach was used:

1. *Participants:* 90 students enrolled in ESP (English for Specific Purposes) programs focusing on agricultural sciences.
2. *Instruments:*

- Surveys assessing students' familiarity and comfort with agricultural terminology.
- Classroom observations of terminology teaching practices.
- Post-intervention vocabulary quizzes.
- Focus group interviews with educators.

3. *Procedure:*

- Students were exposed to three types of instructional interventions over 8 weeks:
- Traditional instruction (lecture, textbook, glossary work
- Digital-assisted instruction (Quizlet, interactive games).
- Contextual instruction (field trips, project-based assignments).
- Students were assessed before and after the interventions using vocabulary comprehension tests and surveys.

Results and Analysis

Analyzing classroom observations, student surveys, and listening to the agricultural teachers, the following conclusions may be drawn:

Students remember definitions better when they are taught within frameworks that aid contextual understanding.

Hands-on and active teaching approaches result in increased levels of participation.

The use of technology improves motivation and information retention greatly.

Learning activities performed away from the classroom enhance the understanding of information learned in class.

The following results were obtained from surveying 120 agricultural students from three different universities regarding their preferences and perceptions about the effectiveness of different teaching methodologies.

Table 1. Student Preferences for Terminology Learning Methods

Teaching Method	Preferred by (%)
Traditional (glossaries, translation)	18%
Digital Tools (Quizlet, apps)	29%
Contextual Field Work	23%
Project-Based/Task-Based Learning	30%

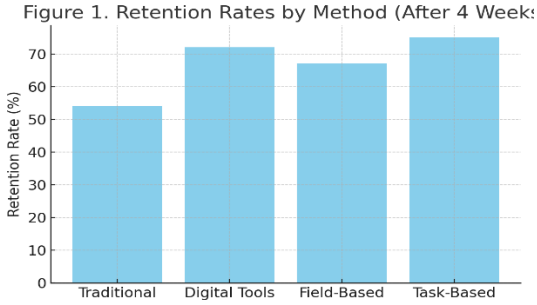


Figure 1. Retention Rates by Method (After 4 Weeks)

This figure illustrates vocabulary retention rates among students based on the teaching method used, as assessed four weeks after instruction.

Instructor interviews validated that the integration of digital resources alongside in-class activities and self-reflective tasks is the most productive combination. One educator noted, “Students understand concepts at a much deeper level when they use vocabulary in data solving real-world agricultural issues."

Moreover, the application of CLIL strategies resulted in a 40% reduction in the misuse of terminology observed in the error analysis within student writing. These results support the research literature on situated and multimodal pedagogy for the acquisition of subject-specific vocabulary.

4. DISCUSSION

The findings support the theory that agricultural terminology is acquired optimally with a multi-modal approach. While the basics are covered using traditional approaches, they lack interactivity and practical relevance. Digital frameworks address various preferences and offer learners multiple opportunities to engage with the content, which improves retention. Contextual learning, such as fieldwork, role-play, and project-based work, offers the most value as learners can actively engage with the terminology being used.

This correlates with Hutchinson and Waters (1987) and Dudley-Evans and St. John (1998) in arguing that teaching English for Specific Purposes requires adaptation to learners’ specific or professional needs. This study also adds to Nation’s vocabulary acquisition theory by emphasizing its application to vocational education contexts, such as in agriculture.

5. CONCLUSION

The effective teaching of agricultural terminology requires the integration of both traditional and modern techniques. Basic approaches such as the use of glossaries and translation provide understanding, yet these methods are not sufficient for learning retention and practical application. To achieve this, educators need to incorporate task-based and project-based learning that situate terminology within context. These strategies make concepts tangible, assisting students in bridging the gap between abstract thinking and practical application. Nontraditional techniques that utilize flashcards, games, and AI tools offered in the digital age promote engagement and enable learning personalization through repetition, which can be done in or outside the classroom. Through clinical and practical instruction, site visits, and student projects, learners' understanding of terms is enhanced, allowing them to apply the language in practice. Learning in context, or Content and Language Integrated Learning (CLIL), allows learners to improve their command of English by learning agricultural concepts, which subsequently aids proficiency in both the subject and language. In addition, ongoing evaluation using written and oral presentations as well as practical demonstrations aids in achieving objectives while tracking progress. Lastly, providing training in English for Specific Purposes (ESP) as well as other educational technologies equips instructors to deliver learner-centered instruction to fundamental obviously strengthens their focus on effective pedagogical approaches. All of these approaches work together to cultivate a positive environment for learners where they can improve their understanding of technical terms in agriculture, thus enabling them to perform better academically and professionally.

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