ENHANCED INNOVATIVE METHODOLOGY FOR TEACHING SPECIALIZED SUBJECTS IN ENGLISH WITHIN THE FIELD OF LIGHT INDUSTRY ENGINEERING

Kimyo International University in Tashkent

II-kurs Magistratura talabasi

Ubayeva Munisaxon Baxtiyor qizi

Yo'nalish: Theory and Methods of preschool education

munisaaliakbarova5@gmail.com

Abstract

This article provides a profound analysis of the methodological foundations for teaching specialized subjects (textiles, garment manufacturing, footwear, and leather goods technology) in English. It highlights the integration of CLIL (Content and Language Integrated Learning), Scaffolding, and "Hands-on Learning" methods with technological operations in light industry. Furthermore, practical recommendations are provided for enhancing students' professional vocabulary and developing effective communication skills in technical English.

INTRODUCTION

Modern light industry is a rapidly evolving global sector. Today, world-renowned design systems such as Gerber Technology, Lectra, and CLO 3D have their technical documentation and user interfaces exclusively in English. Simultaneously, international exchange trading of cotton, silk, and synthetic fibers,

as well as quality certifications (e.g., Oeko-Tex), are conducted in this language. Therefore, English-Medium Instruction (EMI) in the educational process for specialized subjects is not merely an option but a strategic necessity.

METHODOLOGY OF APPLYING CLIL AND EMI APPROACHES IN LIGHT INDUSTRY

The **Content and Language Integrated Learning (CLIL)** approach serves as the fundamental cornerstone here. In this framework, the primary focus is not on linguistic grammar, but on the **"Content"** itself.

Practical Method: "Object-Based Learning"

- **Process:** The instructor brings various fabric samples (denim, jersey, silk, twill) to the classroom.
- **Method:** Students handle the fabric and describe its characteristics in English.
- **Example:** *"This fabric is a twill weave denim. It has high durability and a diagonal rib pattern."*
- **Result:** The student learns terms like "durability" or "diagonal rib" through a real physical sample rather than as abstract concepts.

Scaffolding Method: Before reading complex technical texts, students are provided with a "key vocabulary bank." For instance, in the topic of **"Spinning"**: *Bale opening -> Carding -> Combing -> Drawing -> Roving.* When this sequence is presented via a visual diagram, the student understands the logic of the process without language barriers.

INNOVATIVE TECHNIQUES FOR WORKING WITH SPECIALIZED TERMINOLOGY

Light industry terminology is often complex, where a single word can have different meanings depending on the context.

Method: "Visual Glossary and Mind Mapping" A visual glossary is created for each specific subject.

- **Example:** For the topic "Sewing Machine Parts," students are given an interactive diagram instead of a simple list.
- **Terms:** *Needle bar, Presser foot, Bobbin, Feed dog.*
- **Interactive Exercise:** Students must match the parts on the diagram with their English names and explain their functions using the "Present Simple" tense: *"The presser foot holds the fabric in place while sewing."*

Terminological Labyrinth (Game-based Learning): Students are given a disrupted sequence of a technological process (e.g., shoe assembly stages). They must "assemble" the process in the correct order using English technical terms.

INTEGRATION OF DIGITAL DESIGN AND SOFTWARE

For a light industry engineer, the greatest English language practice comes from working with professional software.

Method: "Software Immersion"

- **Process:** Classes are held in computer labs using **CLO 3D** or **AutoCAD** software. The instructor provides all instructions in English.
- **Command Examples:** *"Select the 'Pattern' tool, create a 'Basic Block', and adjust the 'Seam Allowance' to 1 centimeter."*
- **Practical Outcome:** The student links the term "Seam Allowance" with a real-life action. This makes language acquisition natural and intuitive.

Virtual Factory Tour: Through YouTube or VR technologies, the operations of the world's largest textile enterprises (e.g., denim factories in Turkey) are

showcased with English commentary. Students write a "Technical Report" based on what they observed.

DEVELOPING PROFESSIONAL COMMUNICATIVE COMPETENCE (ESP)

An engineer must not only be able to design but also be able to defend their project.

Method: "Case Study and Presentation"

- **Scenario:** "The fabric dyeing process at the factory is resulting in uneven color (Uneven dyeing problem)."
- **Task:** Students divide into groups to analyze the causes of this problem (pH levels, temperature, chemical concentrations) in English and propose a solution.
- **Target Phrases:** *"The main reason for the defect is...", "We suggest increasing the temperature by...", "This will result in..."*

CONCLUSION

In teaching specialized subjects in English within light industry, the principle of **"Learning by doing"** must remain central. The methodology should not be a mere translation of text; it must be oriented towards visualization, software interaction, and solving real production problems. This approach shapes the student not only as a proficient specialist but as a global-standard engineer-technologist.

PRACTICAL RECOMMENDATIONS (FOR EDUCATORS):

1. **Allocate 70% of class time to practical (laboratory) sessions**, where English serves as the primary medium of communication.

2. **Utilize Multimedia:** English-language animated videos showing the inner workings of textile machinery are the most effective explanatory tools.

3. **Error Correction Strategy:** If a student uses a technical term correctly, it is recommended not to over-correct grammatical errors (e.g., articles or prepositions). Prioritize **Fluency over Accuracy** in technical contexts.

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