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MAKTABGACHA VA MAKTAB TA'LIMI VAZIRLIGI

O'zbekiston Milliy Pedagogika Universiteti



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13.00.00 Pedagogika fanlari
13.00.01 Pedagogika nazariyasi. Pedagogik ta'limotlar tarixi
13.00.02 Ta'lim va tarbiya nazariyasi va metodikasi (sohalar bo'yicha)
13.00.03 Maxsus pedagogika
13.00.04 Jismoniy tarbiya va sport mashg'ulotlari nazariyasi va metodikasi
13.00.05 Kasb-hunar ta'limi nazariyasi va metodikasi
13.00.06 Elektron ta'lim nazariyasi va metodikasi (ta'lim sohalari va bosqichlari bo'yicha)
13.00.07 Ta'limda menejment
13.00.08 Maktabgacha ta'lim va tarbiya nazariyasi va metodikasi
13.00.09 Ijtimoiy pedagogika
07.00.00 Tarix fanlari
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01.00.00 Fizika-matematika fanlari
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03.00.00 Biologiya fanlari
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10.00.00 Filologiya fanlari
11.00.00 Geografiya fanlari

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MUNDARIJA СОДЕРЖАНИЕ CONTENTS

DESIGNING AN ESP COURSEBOOK FOR ARCHITECTURE STUDENTS ON THE BASIS OF VTTSS

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Abstract: The article examines the development of an ESP coursebook for architecture students based on VTTSS (Virtual Technologies for Teaching Special Subjects). The study is based on a needs analysis conducted among students at SamDAQU, UrDU and TAQU (n = 108). The results showed that students were relatively proficient at recognising architectural terms (86.9% on average), but found it considerably more difficult to use them independently in sentences (46.1%). Most students preferred learning through videos, images and 3D models. On this basis, the main principles and unit structure of the coursebook are proposed.

Key words: ESP, coursebook design, architectural terminology, needs analysis, VTTSS, visualisation.

Annotatsiya: Maqolada arxitektura yo'nalishi talabalari uchun VTTSS (Virtual Technologies for Teaching Special Subjects) texnologiyasi asosida ESP o'quv qo'llanmasini ishlab chiqish masalalari yoritilgan. Tadqiqot SamDAQU, UrDU va TAQU talabalari o'rtasida o'tkazilgan ehtiyojlar tahliliga asoslanadi (n = 108). Natijalar talabalar arxitektura terminlarini tanib olishda nisbatan yuqori ko'rsatkichga ega ekanini (o'rtacha 86,9%), biroq ularni gaplarda mustaqil qo'llashda ancha qiynalishini (46,1%) ko'rsatdi. Talabalarning aksariyati video, tasvir va 3D modellar yordamida o'rganishni afzal ko'rgan. Shu asosda o'quv qo'llanmasini ishlab chiqishning asosiy tamoyillari va uning bo'limlari tuzilmasi taklif etilgan.

Kalit so'zlar: ESP, o'quv qo'llanmasini ishlab chiqish, arxitektura terminologiyasi, ehtiyojlar tahlili, VTTSS, vizualizatsiya.

Аннотация: В статье рассматриваются вопросы разработки учебного пособия по ESP для студентов архитектурных направлений на основе технологии VTTSS (Virtual Technologies for Teaching Special Subjects). Исследование основано на анализе потребностей студентов SamDAQU, UrDU и TAQU (n = 108). Результаты показали, что студенты достаточно хорошо распознают архитектурные термины (в среднем 86,9%), однако испытывают значительно большие трудности при самостоятельном употреблении этих терминов в предложениях (46,1%). Большинство студентов предпочитают изучать терминологию с помощью видео, изображений и 3D-моделей. На этой основе предложены основные принципы разработки пособия и структура его разделов.

Ключевые слова: ESP, учебное пособие, архитектурная терминология, анализ потребностей, VTTSS, визуализация.

INTRODUCTION

In Uzbekistan, English is now taught at almost every non-linguistic university, and architecture programmes are no exception. Presidential Decree No. PQ-5117 of 19 May 2021 called for a qualitatively new level of foreign language learning [1], while the Development Strategy of New Uzbekistan for 2022-2026 emphasises the role of digital technologies in education [2].

For architecture students, this raises a practical question: what should they learn from, and how? In our experience, the answer is not straightforward. General English coursebooks provide students with grammar and everyday vocabulary but offer almost nothing about foundations, facades or site plans. Specialised dictionaries and glossaries are available, but a glossary is not a coursebook. It provides a word and its translation, leaving students to tackle the most challenging part on their own: using the term in authentic professional communication. Teachers often try to bridge this gap by preparing their own handouts, meaning that the quality of ESP teaching depends heavily on an individual teacher's time and effort.

LITERATURE REVIEW

The literature on ESP has long emphasised that course materials should be developed in response to learners' actual needs [3; 4]. Need analysis is therefore the starting point for any ESP course [5], and effective materials should be developed according to clearly defined principles rather than simply based on what happens to be available [6]. For architecture students, there is an additional consideration: their profession is highly visual, and they are accustomed to thinking in terms of drawings, models and spaces. This makes the VTTSS approach, which connects terminology with virtual tours, 3D models and other visual media, particularly suitable for this group of learners [7]. The aim of this article is to describe how the needs of architecture students were investigated and how the findings were used to formulate the principles and structure of an ESP coursebook based on VTTSS.

RESEARCH METHODOLOGY

To identify students' actual needs, we conducted a needs analysis questionnaire between May and October 2026. The questionnaire was completed by 108 students enrolled in architecture-related programmes: 56 from Samarkand State University of Architecture and Civil Engineering (SamDAQU), 35 from Urgench State University (UrDU), 15 from Tashkent University of Architecture and Civil Engineering (TAQU), and 2 who did not specify their university. Most participants were first- and second-year students studying architecture, interior design and the restoration of architectural monuments. The questionnaire was administered in Uzbek via Google Forms to ensure that students' English proficiency did not affect their understanding of the questions.

The questionnaire consisted of four parts. The first collected background information, including how long students had studied English and how they assessed their proficiency. The second contained statements rated on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), covering students' knowledge of terminology, attitudes and experience with digital learning materials. The third part addressed learning difficulties and preferred learning methods, allowing respondents to select multiple answers. The final part was a short test worth 20 points. In the multiple-choice items, students selected the Uzbek meanings of English terms such as foundation slab, blueprint and load-bearing wall. In the remaining items, they had to produce the English terms themselves, for example, by completing the sentence: Good _____ keeps buildings warm in winter. When selecting topics for the coursebook, we also considered the main specialized subjects identified by students, including architectural design and composition. The responses were analyzed using descriptive statistics. We calculated mean scores for the Likert-scale items, percentages of agreement (ratings of 4 and 5), and the proportion of correct answers in the test.

ANALYSIS AND RESULTS

Students' background. Most respondents described their English proficiency as beginner (40.7%) or intermediate (38.0%), while only 21.3% rated their proficiency as good or high. Approximately two-thirds (65.7%) had studied English for one to three years, and 14.8% reported that they did not yet know English. Students encountered English terminology in their specialized subjects rarely (43.5%) or only sometimes (36.1%). When learning terminology, they relied primarily on the internet (43.5%), followed by textbooks (25.9%) and their teachers (20.4%). Self-assessment and attitudes. Table 1 reveals a clear contrast. Students rated their knowledge of architectural terminology as low, yet they recognized its importance and expressed positive attitudes towards visual and virtual learning.

Table 1: **Students' self-assessment and attitudes (n = 108, five-point scale)**

Statement	Mean	Agree (4 to 5), %
Learning architectural terms in English is important for my future profession	4.11	74.1
Virtual technologies are useful for learning terms	3.94	70.4
Interactive tasks increase my interest in the lesson	3.74	60.2
I remember terms more easily through pictures, drawings and 3D objects	3.73	64.8
Videos and animations make it easier to remember terms	3.71	63.0
I have used 3D models, videos or digital drawings in architecture classes	2.76	34.3
I can understand English architectural terms in context	2.76	25.9
I know English architectural terms	2.68	14.8
I can translate architectural terms from Uzbek into English	2.56	13.9

Difficulties and preferences. The most common difficulty was remembering terms over a long period (57.4%), followed by using terms in sentences (46.3%), pronunciation (34.3%) and the lack of visual materials in class (27.8%). When asked which methods would help them most, students selected learning through videos and animations (64.8%), pictures and drawings (61.1%), and 3D models (61.1%). Using terms in sentences (45.4%) and preparing a project or short presentation (43.5%) were the next most popular options, while translation exercises (38.0%) and working with professional texts (31.5%) were less popular.

Test results. The test revealed the same gap that students had reported in their self-assessments. When they only had to recognise a term and select its Uzbek meaning, they performed well: on average, 86.9% of their answers were correct, ranging from 79.6% for load-bearing wall and site plan to 100% for facade. However, when they had to produce the term in an English sentence, the proportion of correct answers fell to 46.1%. For example, only 39.8% of students supplied foundation in the sentence The _____ supports the whole building, and only 30.6% supplied reinforcing or reinforcement in Workers use steel for _____ the structure. Several students provided related but incorrect terms, such as framework or insulation. This suggests that although they recognised the words, they had not yet established firm connections between the terms and their meanings or uses.

Coursebook design. On the basis of these findings, we formulated four principles for the coursebook. First, each new term is introduced alongside an image of the actual object, using a virtual tour, photograph, drawing or 3D model. Second, recognition alone is insufficient; therefore, each unit guides students from understanding a term to using it in their own sentences, descriptions and projects. Third, terms are recycled across units to address the problem of forgetting. Fourth, the content follows the students' specialised subjects, ensuring that English supports what they learn in design and composition classes. Following the logic of VTTSS, each coursebook unit is organised into five steps: Virtual exploration. Students take a guided virtual tour of a building and encounter new terms in context. Visual reinforcement. Students identify and label the same elements on a 3D model, drawing or plan.

Language practice. Students complete exercises focusing on pronunciation, meaning and the use of terms in sentences. Professional task. Students describe a building, explain a structure or present a small project in English. Review and self-assessment. Students complete short interactive quizzes and a terminology checklist, which they can also use online at home. The units are grouped around themes drawn from the architecture curriculum: building elements and structures, building materials, architectural styles and history, architectural drawings and documents, and urban planning. In our view, the most important finding of the needs analysis is the gap between recognising a term and using it. Almost nine out of ten answers were correct when students only had to select a meaning, but fewer than half were correct when they had to produce the term themselves. This finding is consistent with research on vocabulary acquisition, which suggests that receptive knowledge of a word generally develops earlier and more easily than productive knowledge [8].

For an ESP coursebook, this means that lists of terms with translations, which remain common in many classrooms, are insufficient. Students need regular opportunities to use terminology orally and in writing within professional contexts. The second key finding is the clear preference for visual learning. Approximately two-thirds of the students reported that they remembered terms better through pictures, drawings, 3D objects and videos, yet only a third had actually used such materials in their classes. This supports the view, based on dual coding theory, that words presented alongside images may be remembered more effectively [9; 10].

It is also consistent with the visual nature of the architectural profession. Architects often think in visual terms, so a coursebook that begins with a building or a model rather than a text may better reflect the way they work. The study also has several limitations. Most respondents came from SamDAQU and UrDU, while the number of students from TAQU was relatively small. The questionnaire relied partly on self-assessment, and the test was short. In addition, the proposed coursebook structure has yet to be evaluated in a full course. Testing its effectiveness will therefore be the next stage of our research.

CONCLUSION

The needs analysis showed that architecture students recognise the importance of English terminology for their future profession but have limited command of it. They recognise terms much more successfully than they use them, often struggle to remember terminology, and express a preference for visual and digital learning materials. These findings provided the basis for designing an ESP coursebook using the VTTSS approach. Its main principles are to introduce each term alongside a visual representation, guide students from recognition to active use, recycle terminology across units and align the content with their specialised subjects. Each unit takes students from virtual exploration and work with a 3D model to language practice, a professional task and self-assessment. We believe that this approach could also be useful in other technical fields where professional terminology refers to concrete objects and structures.

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13.00.00 Pedagogika fanlari
13.00.01 Pedagogika nazariyasi. Pedagogik ta’limotlar tarixi
13.00.02 Ta’lim va tarbiya nazariyasi va metodikasi (sohalar bo‘yicha)
13.00.03 Maxsus pedagogika
13.00.04 Jismoniy tarbiya va sport mashg‘ulotlari nazariyasi va metodikasi
13.00.05 Kasb-hunar ta’limi nazariyasi va metodikasi
13.00.06 Elektron ta’lim nazariyasi va metodikasi (ta’lim sohalari va bosqichlari bo‘yicha)
13.00.07 Ta’limda menejment
13.00.08 Maktabgacha ta’lim va tarbiya nazariyasi va metodikasi
13.00.09 Ijtimoiy pedagogika
07.00.00 Tarix fanlari
19.00.00 Psixologiya fanlari
01.00.00 Fizika-matematika fanlari
02.00.00 Kimyo fanlari
03.00.00 Biologiya fanlari
09.00.00 Falsafa fanlari
10.00.00 Filologiya fanlari
11.00.00 Geografiya fanlari

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