

MULTIMODAL TEXT FOCUS AS A MOTIVATIONAL PEDAGOGICAL TOOL FOR CIVIL ENGINEERING STUDENTS' MOTIVATION IN LEARNING ENGLISH

МУЛЬТИМОДАЛЬНА ФОКУС-МОДЕЛЬ ТЕКСТУ ЯК МОТИВАЦІЙНИЙ ПЕДАГОГІЧНИЙ ІНСТРУМЕНТ ДЛЯ МОТИВАЦІЇ У ВИВЧЕННІ АНГЛІЙСЬКОЇ МОВИ СТУДЕНТІВ БУДІВЕЛЬНИХ СПЕЦІАЛЬНОСТЕЙ

This paper presents the results of a research project whose objective was to elaborate a multimodal focus model for civil engineering students' motivation in learning English.

The methods of the investigation are analysis and syntheses of the associated researches used to collect and present the findings and draw the conclusion and students' survey of motivation.

The literature review intended to determine the relation between multimodal texts and transition notes. Multimodal focus model has been aligned with transition notes on the framework of the system-functional semiotic model. The essence of the concept "transition notes" has been defined. The main tasks with transition notes in the form of diagrams have been presented. The author has also outlined 3 proof-of-concept stages multimodal focus model: 1 stage is examination of different text parts, specifically general notes and notes for technical drawings. Students try to read the notes for drawings, drawings themselves and general notes to grasp and recapitulate information which they provide.

The second stage is interaction between textual and visual parts (transition notes, tasks). Transition notes help to create stable lexical skills and booster vocabulary which is necessary for more complicated tasks such as determination of correct engineering and construction solutions to drawings.

The last stage is reflection when students are constantly alert to prior knowledge and skills and new ones. They have a holistic viewpoint about what they have already learnt.

The results have revealed that multimodal focus models are meaningful and motivational pedagogical tools, particularly if students pass successfully the second stage interaction between textual and visual parts (transition notes, tasks). It was also found that transition notes boost students' vocabulary before accomplishment of more complicated tasks.

The conclusion is that multimodal focus model includes 3 proof-of-concept stages, with particular focus on the second stage which demands usage of transition notes in various types of diagrams. Moreover, due to the application of this model, students' motivation in learning English has increased.

Key words: *multimodal text, civil engineers, the sketch construction project, transition notes.*

Ця стаття представляє результати дослідницького проекту, мета якого полягає

в розробці мультимодальної фокус-моделі для мотивації студентів-будівельників у вивченні англійської мови.

Методами дослідження є аналіз, синтез відповідних досліджень для представлення результатів та висновків та опитування студентів.

Огляд літератури мав на меті визначити зв'язок між мультимодальними текстами та перехідними примітками. Мультимодальна фокус модель пов'язана з перехідними нотатками в межах системно-функціональної семіотичної моделі. Визначено суть поняття «перехідні нотатки». Головні завдання з перехідними нотатками у формі діаграм представлено. Автор окреслив трьохетапну мультимодальну фокус-модель: перший етап – це визначення різних текстових частин, а саме загальних приміток та приміток до креслень. Студенти намагаються прочитати примістки до креслень та загальних приміток для того, щоб усвідомити надану ними інформацію. Другий етап показує взаємодію між текстовими та візуальними частинами (перехідними нотатками, завданнями). Перехідні нотатки допомагають сформувати стійкі лексичні навички та підвищити вокабулярний запас, який є необхідним для виконання таких складних завдань як визначення інженерно-конструктивних рішень до креслень. Останній етап – це рефлексія коли студенти постійно звертаються до попередніх знань та навичок. У них формується холистична точка зору стосовно вивченого.

Результати свідчать про те, що для студентів мультимодальні фокус-моделі є значущими та мотиваційними педагогічними інструментами, особливо якщо студенти успішно проходять другий етап взаємодії між текстовою та візуальною частинами (перехідні нотатки, завдання). Також було виявлено, що перехідні нотатки збільшують словниковий запас студентів перед виконанням більш складних завдань.

*Висновок полягає в тому, що мультимодальна фокус-модель включає три етапи з особливою увагою до другого етапу, який вимагає використання перехідних нотаток у різних видах діаграм. Крім того, завдяки застосуванню даної моделі підвищилася мотивація студентів до вивчення англійської мови. **Ключові слова:** мультимодальний текст, інженери-будівельники, ескізний проект будівництва, перехідні нотатки.*

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Introduction. The problem of multimodal text [3] has long been in the center of attention of researchers [3; 6; 7].

Kress emphasized the robust modes and media of contemporary communication discourse on the basis of multimodal texts. Leon characterized the beliefs students have when interacting with multimodal texts and when they are involved in a foreign language

learning process. Relatedly, Danielsson and Selander presented a model for working with multimodal texts in education with the intention to highlight multimodal text analysis in relation to the subject content.

The current study focused on a model for working with multimodal text specifically for future civil engineers. Sketch construction project which includes verbal information in the form of general notes and visual

one with technical drawings is regarded as a multimodal text which requires the processing of more than one mode and the recognition of the interconnections between modes. We believe that the sketch construction project is a para-linguistically active text, which is also called multimodal [2;5]. A multimodal text is a text that combines different semiotic systems. It is worth considering the sketch construction project from the point of view of multimodality because it includes different semiotic systems, both verbal and non-verbal.

The present study was designed to make a contribution to better understand the model of working with specific multimodal texts for future civil engineers.

We address the following research question:

Which multimodal text focus is important for future civil engineers' motivation for learning English?

The rest of the paper is organized as follows: The introduction presents and discusses findings. Literature review has overview of relevant literature. Methodology setting and participants discuss the process of defining the most relevant multimodal focus. Conclusions present and discuss the results of the research paper.

Literature review. Considering different research papers about multimodal texts [3; 6; 7], it is possible to say that another study by Malkina [8] exactly distinguishes that the sketch construction project as a complex in which verbal and non-verbal components under the conditions of equal semantic importance or the impossibility of replacing or omitting one of them make up a single visual, structural, semantic and functional whole. We share the same concept about the sketch construction project as a multimodal text. Danielsson presents a model for working with multimodal texts which includes general structure, thematic orientation and sequencing, interaction between textual parts, proximity/closeness and coherence between writing and other semiotic resources, reflection as to the interaction between different resources and what aspects of the content that appear as central, congruence and coherence between concepts, descriptions and explanations, analysis of figurative language (in writing and images, etc.), deconstruction of the figurative language, explicit discussion of aspects such as right/wrong, us/the others, female/male, etc. implicit (e.g. in metaphors, images, perspectives) [3].

There are other findings which demonstrate the usage of transition notes on the basis of multimodal texts but not the model itself [1; 9]. Transition notes are regarded as notes in relation with text content in tables, diagrams with the purpose of generalization and organization of communication language [1]. Their applicability is particularly showcased on the basis of multimodal texts where students have to juggle between visual images and verbal texts. Our study is aligned to add to the body of research about multimodal texts and transition notes by examining the effectiveness of multimodal focus model with

transition notes for future civil engineers' motivation in learning English.

Methodology setting and participants. The participants of the study were 72 2nd year civil engineering students enrolled in the optional course "English language for specific purposes". The course included 30 hours of classroom instruction delivered through English, and 42 hours of individual work, over 6 months. Participants were assigned to two experimental groups, which differed in the instructional approach used in their classes. Participants were recruited through announcement to receive course-credit in the discipline "English language for specific purposes" for participation. They gave informed consent to take part in the study.

We think that in the process of pedagogical research it is necessary to apply the most optimal set of methods that would allow obtaining versatile information, analyzing the course of the experimental-pedagogical process. Therefore, we conducted a survey of future civil engineers in order to find out their reflective assessment of the proposed group of exercises. We studied the level of internal motivation development compared to other disciplines in the curriculum with the help of a questionnaire [4].

By the way, we analyzed the sketch construction project as multimodal texts through the framework of the system-functional semiotic model in the architecture of O. Tul [10] in order to create relevant transition notes for the multimodal focus model.

Findings. According to the students' survey, the most interesting forms of work in ESP classes for students turned out to be the determination of correct engineering and construction solutions to drawings with notes. Among the tasks of the post-experimental section, task No. 4 – a cloze test to determine the level of formation of the skills of using contextual guesswork and forecasting turned out to be the most difficult, both according to the performance results and according to the answers of the survey participants (39%).

These findings make us think that students have to boost their vocabulary and refine lexical skills to do their favorite tasks, particularly determination of correct engineering and construction solutions to drawings with notes better. The main point is that it must be done within the interaction of verbal text and visual image of the sketch construction project.

Following Danielsson's model of working with multimodal texts we have elaborated our own one which is aligned with transition notes created on the framework of the system-functional semiotic model in the architecture of Tul.

First stage is examination of different text parts, specifically general notes and notes for technical drawings. Students try to read the notes for drawings, drawings themselves and general notes to grasp and recapitulate information which they provide.

The second stage is interaction between textual and visual parts (transition notes, tasks). Transition notes help to create stable lexical skills and booster vocabulary which is necessary for more complicated tasks such as determination of correct engineering and construction solutions to drawings.

The last stage is reflection when students are constantly alert to prior knowledge and skills and new ones. They have a holistic viewpoint about what they have already learnt.

Let's review the second stage in details because transition notes play a major role in interaction between textual and visual parts. The basis of transition notes is the system-functional semiotic model by Tula. The objects of this system are a building, a floor, a room, and interior items. The author distinguishes the following functions: empirical function (characteristics of the object) means the practical purpose of the building as a whole and its individual parts, general features of the building; interpersonal (characteristics of the object in relation to external objects, public appearance) – in a general way and orientation to the adjacent territories outside the infrastructure of the territory; structural (components of the object) – in connection with other objects or parts in the infrastructure of the territory.

We analyzed and modified the system-functional semiotic model in the architecture of Tula according to the names of the objects on the typical sketch construction drawings: plot plan, floor plan, elevation.

We will present samples of partially filled transitional notes developed by us in the form of tables and diagrams with the addition of specially selected verbal information to drawings based on the abovementioned system-functional semiotic model.

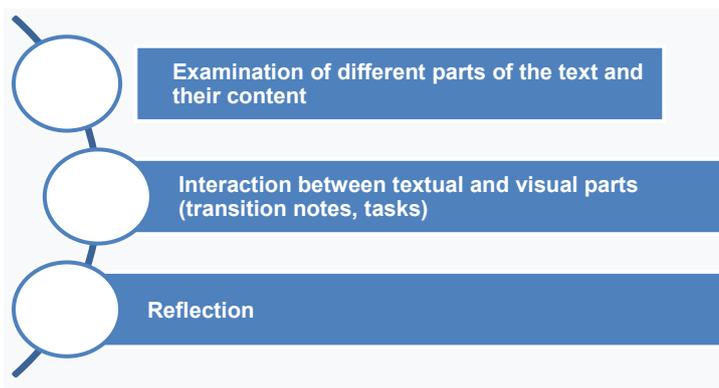


Fig. 1. Multimodal focus model for future civil engineers

In sample No. 1, it is necessary to fill in the location of the floor in relation to other floors, the function of the floor and the names of the rooms on the floor.

Sample No 1

Plot plan

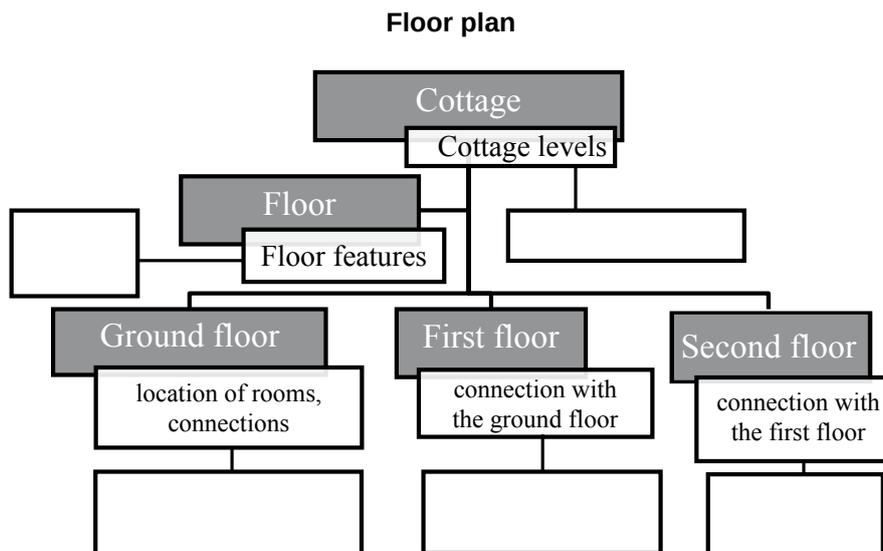
Object	Function	Connection with other floors and rooms on its floor	Rooms on the floor
Ground floor	to provide with recreation, study and washing		Study Recreation room Garage
First floor			Kitchen Bedroom Living area

Sample No. 2 is presented in the form of a hierarchy diagram. The student has to fill in the number of rooms on the floor, their location, connections with neighboring rooms (types of doors, windows), connections between floors.

Table 1

Objects and functions of the sketch construction project layouts

Object	Functions		
	Empirical	Interpersonal	Structural
Cottage on the plot plan	Private house	Orientation to the road and adjacent buildings	Yard Road Garden
	Orientation on world parts		
Floor on the floor plan	Work Dream Storing Parking	Connection with another floors Connection among rooms (door views, windows)	Room Stairs
Room on the floor plan	Study room Room for games Bathroom Pantry Living room Kitchen Bedroom	Connection with another rooms (types of doors, windows)	Doors Windows
Cottage on elevation	Private house	Connection with stairs	Windows Doors Stairs Roof



In sample No. 3, it is necessary to fill in information about the object's function, connection with other floors and rooms on its floor.

Sample № 3

Floor plan

Object	Function	Connection with other floors and rooms on its floor	Rooms on the floor
Ground floor	to provide with recreation, study and washing		Study Recreation room Garage
First floor			Kitchen Bedroom Living area

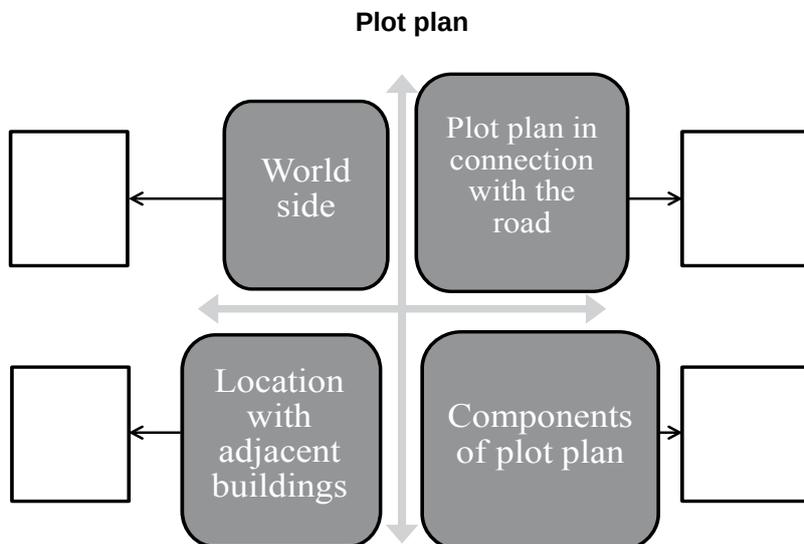
In the sample No. 4 students have to fill in the empty spaces of diagram with omitted information.

The student has to fill in the number of rooms on the floor, their location, connections with neighboring rooms (types of doors, windows), connections between floors.

Transition notes within the multimodal focus model have been designed with the aim of forming stable and flexible lexical skills to choose better and correctly relevant engineering and construction solutions to drawings.

We determined the level of internal motivation before and after the experimental study of a multimodal focus model for future civil engineers. An average level of internal motivation after the experimental study was found in 92% of participants in comparison with 52%. As a result of interviews with students, it was found that the reason for the low level of internal motivation to study ESP is the uniformity of some tasks, the lack of interesting vocabulary tasks, creative and professionally oriented tasks. But transition

Sample № 4



notes give ample opportunities to do interesting vocabulary tasks with many visualization components in the form of diagrams and tables.

A high level of motivation can be observed among students to such a professional discipline as urban planning and engineering structures. Such results confirm that the most interesting forms of work in ESP classes for students turned out to be such professionally oriented tasks in urban planning and engineering structures and determination of correct engineering and construction solutions. Their accomplishment might be better with multimodal focus model for future civil engineers, particularly if they pass the second stage of interaction between textual and visual parts. Transition notes help boost vocabulary by spelling, remembering, juggling between visual images and words before accomplishment of much more complicated tasks which evolve particular students' interest and enhance motivation such as determination of correct engineering and construction solutions.

Conclusion. The current study examined the multimodal focus model which turned out to be important for civil engineering students' motivation for learning English. It includes 3 proof-of-concept stages, with particular focus on the second stage which demands usage of transition notes in various types of diagrams. The samples of transition notes have exemplified the ways how to boost vocabulary which is necessary for more complex tasks that are aligned with students' professional civil engineering activity. Survey of internal motivation has confirmed the considerable rise of students' motivation after the set of tasks done within our multimodal focus model.

Our findings suggest that for the civil engineering students, multimodal texts are meaningful and motivational pedagogical tools for learning English. The model is intended for different subject areas, and as was discussed above, different disciplines place various multimodal demands on the reader.

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