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Language education – technology serving motivation in education

Edukacja językowa – technologia na służbie motywacji do edukacji

Keywords: e-learning; language education; professional language; teaching.

Abstract: The following article presents a cross-section of the necessary information related to distance learning. It also analyses the most important turning points in the field of remote education. The main methodological assumptions and practical applications of blended learning are also presented. Finally, the authors describe the key result of the CLIL-VET project: a tool supporting teaching English in vocational schools.

Słowa kluczowe: e-learning, edukacja językowa, język zawodowy, uczenie.

Streszczenie: W poniższym artykule, przedstawiony jest przekrój potrzebnych informacji związanych z tzw. distance learningu. Dzięki czemu odbiorca może dowiedzieć się na temat najważniejszych punktów zwrotnych w obszarze edukacji zdalnej. Przedstawiono również główne obszary dotyczące głównych założeń metodycznych oraz praktycznego zastosowania *blended learningu*. Autor jako przykład rozwiązania technicznego przeprowadza analizę rozwiązania CLIL-VET jako narzędzia wspierającego edukację angielskiego języka zawodowego.

„The only sustainable competitive advantage is an organization's ability to learn faster than the competition”. P. M. Senge of the Massachusetts Institute of Technology in the USA.

The awareness that knowledge and its practical application is a key aspect of their competitive advantage in every organization is growing everywhere. Conferences and meetings are organized during which this issue is raised regularly. More and more advanced methods are used and artificial intelligence systems are implemented so that knowledge transfer is at its most effective.

However, the biggest challenges facing modern education are: 1: how to motivate students and employees to acquire knowledge, and how is practical it? 2. What tools are needed to make the education process not only effective but efficient? We will try to answer these two questions, using the example of the CLIL-VET system, and show that a network of international scientific research centres has developed a methodology which finds a balance between technology and inducing an internal motivation to learn.

The classic process of knowledge transfer assumes that the teacher prepares the thematic scope, prepares materials (including a syllabus), and transfers it in class. Students independently perform tasks at home. After completing them, they come to class and are assessed for their progress. In the context of vocational language education, this process is starting to become insufficient. In addition, it should be remembered that modern students have grown up surrounded by new technologies. Which directly translates into their way of learning and expectations of the learning process. They are accustomed to quick feedback, interactive images which convey information and the ability to make independent decisions about their own learning process.

In the realm of education, there is the concept of "distance learning" – which is a large collection of, among others, such subgroups as e-learning, blended learning or mobile learning. As early as 1728, the Boston Gazette published information about a correspondence course in shorthand. Interestingly, in Poland, the University of Krakow in 1776 proposed the first correspondence course for craftsmen.

However, the real flourishing of "distance learning" began with the development of technology from the mid-twentieth century. A special turning point was the emergence of the internet and the possibility of sending videos and voice messages to an individual recipient.

The first e-learning platform was the PLATO System platform, created at the University of Illinois in 1965. Even then it had such functions as a mailbox, chat or even gamification elements.

The arrival of "Khan Academy" in 2006 was a real revolution in distance education. It was then that Salman Khan began uploading math lessons to his YouTube channel. Not even knowing that in this way had started a whole new era of looking at the effectiveness and methodology of education. Not only in remote learning but a revolution in education in general.

The next use of e-learning principles was to evolve this method into a form mixed learning or "blended learning". It is a method aimed at making full use of the opportunities and possibilities offered by the direct student-teacher meeting and the advantages of e-learning and mobile-learning.

Krzysztof Redlarsski and Igor Garnik (2014) draw attention to some challenges often faced by the teaching staff in the aspect of implementing e-learning or blended learning systems. They mention, among others the issue of technical and methodical competences among the teaching staff who would prepare specific e-learning courses for students. As well as the frequent lack of training in this aspect. It is also worth noting that according to some educators, despite the above challenges, classes using ICT and blended learning should be mandatory and introduced into the education system or at least into some part of it (A. Basińska, I. Garnik, Gdańsk 2014)

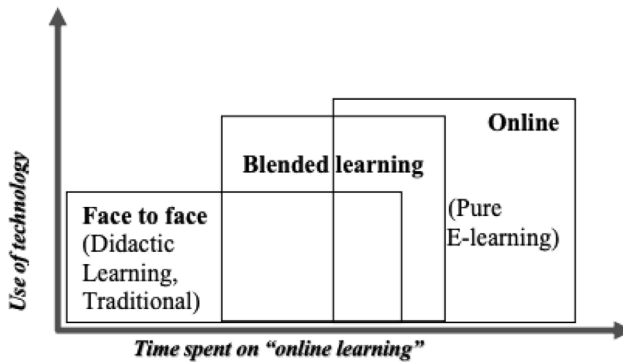
At this stage, it is worth recalling definitions that should be used in the context of distance learning.

Effectiveness of education.

The effectiveness of education can be understood as the degree of implementation of the assumed teaching goals, i.e. the relationship between the achieved result and the intended goal (F. Bereźnicki 2006).

The evaluation of e-learning effectiveness should include four levels of activity included in the Kirkpatrick model: level of reaction, learning, behavior and results (D.L. Kirkpatrick 2001).

“Blended learning the effective combination of different modes of delivery, models of teaching and styles of learning” Heinze A., Procter C. (2004)



Source: Heinze A., Procter C. (2004).

In order to increase the effectiveness of cooperation and respond to the challenges of modern vocational language education, the CLIL-VET platform was created <http://clilvet.erasmusproject.pl/multimedia-scenarios>. Thanks to it and its functionalities, students and teachers have the opportunity to achieve common goals. Teachers transfer knowledge of a language. Students learn English supported by interesting and interactive aids that also helps them in learning their profession. This is possible thanks to previously systematized materials, tested and implemented together with a unified assessment system (G. Ubachs, E-xcellence. Quality Assessment for E-learning: A Benchmarking Approach, EADTU, Heerlen 2012, pp. 58–64).

In the following part, I would like to focus on presenting an IT solution that is publicly available as part of a completed project. The CLIL-VET platform provides full substantive and methodological support. Thanks to their simple and understandable interface, both the teacher preparing lessons and the student can easily find interesting materials - which is the basis for maintaining motivation to continue using this platform.

The platform includes such areas as:

1. Home

In this area, we find basic information about the project, FAQs and links to external project partners.

There is also a video to help you understand the CLIL-VET concept.

2. About project

Here you can find information about the project along with access to the partners who implemented the platform.

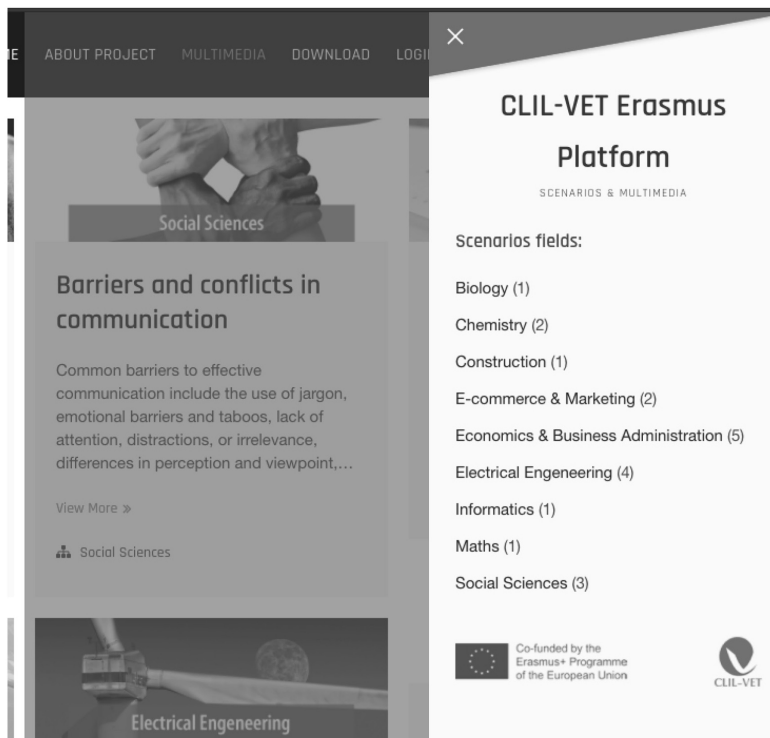
3. Multimedia

In this section, you find interactive multimedia.

4. Download

Here you find the heart of the educational platform. In this part, teachers and students can use the shared online lessons along with downloadable materials.

5. The sidebar which facilitates quick navigation to the relevant section. Below is a screenshot showing the sidebar section:



Source: <http://cilvet.erasmusproject.pl/>.

In the section below, I would like to focus on discussing the "Multimedia" section - which is the main body of the program.

The screenshot displays the CLIL-VET Erasmus Platform website. The header includes the site name, navigation links (HOME, ABOUT PROJECT, MULTIMEDIA, DOWNLOAD, LOGIN), and a search icon. The main content area is a grid of multimedia scenarios, each with a title, a brief description, and a 'View More' link. The scenarios are categorized by subject: Social Sciences, Maths, Informatics, and Electrical Engineering.

- Social Sciences:**
 - HACCP and food safety:** The HACCP system was first implemented in 1959 by Pillsbury, USA, in its NASA research and food design projects for NASA's US space programs. Due... View More >
 - Competition - component of the market:** Competition arises whenever at least two parties strive for a goal which cannot be shared: where one's gain is the other's loss. Multimedia exercises Multimedia exercises Exercise... View More >
 - Barriers and conflicts in communication:** Common barriers to effective communication include the use of jargon, emotional barriers and taboos, lack of attention, distractions, or irrelevance, differences in perception and viewpoint... View More >
- Maths:**
 - Statistics:** Mean, median, and mode are three kinds of averages. There are many averages in statistics, but these are the three most common, and most likely... View More >
- Informatics:**
 - Informatics:** Creating, managing, and editing web pages have never been so easy and hassle-free. Multimedia exercises Exercise 1
- Electrical Engineering:**
 - Energy storage - battery:** Batteries provide us with a mobile source of... View More >
 - Wind Power:** The wind energy industry is booming... View More >
 - Electric motor:** Almost every mechanical movement around us is caused by an electric motor. Multimedia exercises Exercise 1

Source: <http://cilvet.erasmusproject.pl/multimedia-scenarios/>.

It is here that we have the opportunity to learn about such topics as:

1. HACCP and food safety
2. Competition – component of the market
3. Barriers and conflicts in communication
4. Statistic
5. Energy storage – battery
6. Wind Power
7. Electric motor
8. Electromobility
9. Company organizational chart
10. Customer service
11. Communication process
12. Capital budgeting and investment appraisal
13. Patrimonial structures of assets
14. Curriculum Vitae
15. Management in business
16. The matter of matter
17. Cell structure
18. The Periodic Table
19. Buildings of education

Those above topics, are divided into these main sections:

1. Biology
2. Chemistry

3. Construction
4. E-commerce & marketing
5. Economics & Business Administration
6. Electrical Engineering
7. Informatics
8. Maths
9. Social Sciences

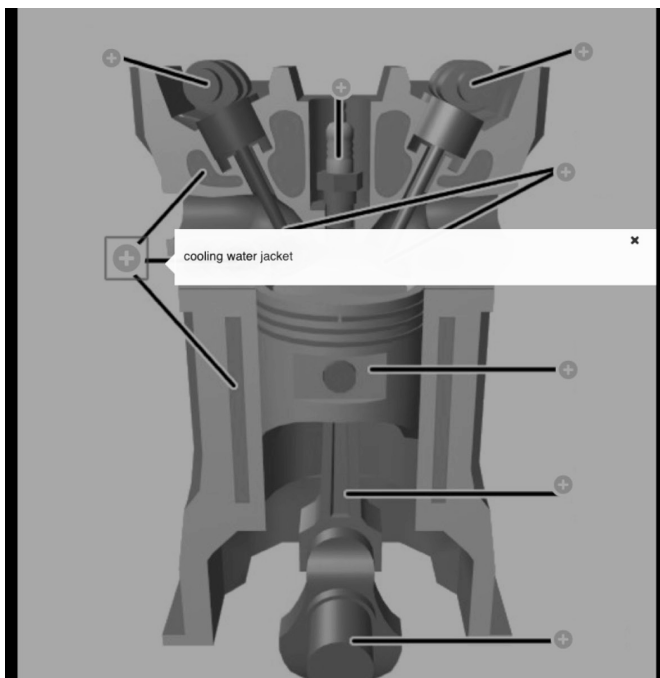
Thanks to such a wide range of topics, a teacher and student can create an extensive syllabus. Containing both topics related to the selected profession but also from areas in the field of entrepreneurship or building customer relations and management.

Training methods.

Within the project, it was assumed that the most important focus is the use of the most effective and proven methods of transferring and acquiring knowledge. Therefore, in the following section, I would like to present a few selected examples.

One such method is a cross-sectional representation of a given mechanism.

As you can see in the picture below, in the "Electromobility" section one of the tools for transferring knowledge is to show a real cross-section of an engine. In addition, each student can find out what each component is called.



Another method included on the platform is the multiple-choice answer. What is important is that within one exercise it is possible not only to provide an answer but also to improve a student's willingness to understand such a question. The system informs me, if at a given stage I need it, how many correct answers were given and which answers are correct. In addition, the system has been enriched with a visualization of the student's progress.

Exercise 2

Choose all the sources of renewable energy.

natural gas	<input type="checkbox"/>
the Sun	<input checked="" type="checkbox"/>
oil	<input type="checkbox"/>
wind	<input checked="" type="checkbox"/>
water	<input checked="" type="checkbox"/>
carbon	<input type="checkbox"/>
✓ biomass	<input checked="" type="checkbox"/>
coal	<input type="checkbox"/>
petroleum	<input type="checkbox"/>

1/4



1. Another method is True or False.

A system based on a closed question, typically aimed at testing knowledge

Exercise 3

At the beginning of the 20th century, electric motors and internal-combustion engines were equally popular in automobiles.

True False

You got 1 of 1 points

1/1

The internal-combustion engine was the preferred choice in urban areas due to its greater range; whereas the electric powertrain was more prevalent in rural traffic.

True False

You got 0 of 1 points

0/1

2. Method „Drag & Drop”

Thanks to this system, the course participant can pair the given words together. Under this system, feedback was taken care of through:

- A progress bar and level of correct answers
- Information that the answers are correct

Excercise 3

Drag the words into the correct boxes

kinetic ✕

power ✕

air ✓

greenhouse

wind ✓

high ✕

generate

renewable energy

climate

pace of

★ 2/10

3. Method „Fill in”

Thanks to the system below, the learner can enter the answers themself. Thanks to this, they can test their knowledge by themself, without any hints and suggestions. After completing it, they receive feedback on both correct and incorrect answers. In addition, they may receive extra information about the correct answers.

Fill in the missing words

Batteries provide us with a mobile source ✓ power.

Without batteries, everything that needs electricity would have to be plugged ✓.

When two dissimilar metals are in contact with each other in an electrolyte, there is a tendency ✕ electrons to pass from one material to another.

Batteries can be divided ✕ primary and secondary batteries.

The cathode in alkaline batteries is composed ✕ a manganese dioxide mixture.

The electrolyte in zinc-carbon batteries is either ammonium chloride ✕ zinc chloride.

Lithium-ion batteries are often used ✕ high-performance devices, such as cell phones and digital cameras.

★ 2/7

4. Method "Word search"

By using this system, the student deepens their knowledge of the word and exercises their perceptiveness. Thanks to that, in a fun way, we transfer and consolidate knowledge.

Find the words in the grid.

X	A	H	T	E	N	G	A	M
X	A	R	O	T	O	R	Y	L
O	R	O	T	A	T	S	N	I
M	O	T	O	R	E	M	I	H
P	O	L	A	R	I	T	Y	X
G	V	C	W	T	Y	R	F	K
C	O	M	P	O	N	E	N	T
B	E	R	I	W	G	W	I	D
C	U	R	R	E	N	T	X	W

Find the words

- ✓ polarity
- ✓ current
- ✓ magnet
- ✓ motor
- ✓ rotor
- ✓ stator
- ✓ wire
- ✓ component

⌚ Time Spent : 1:49 7 of 8 found

You got 7 of 8 points

📊 7/8

🔄 Retry

5. Scenarios

In addition, it is worth adding that lesson plans were created for each group of tasks. They can be opened on the platform as well as downloaded.

+ Scenario (preview)

+ Scenario (download)



Multimedia exercises

Thanks to the above methods, in combination with the student's meetings with the lecturer, the process of vocational education in English, in my opinion, is definitely easier and is more effective.

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