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ECOLOGICAL CONTENT AT THE LESSONS OF ENGLISH: SOFT AND HARD CLIL ASPECTS

CLIL as a method has been recently viewed as a new approach to teaching science in English. While it has many types, soft CLIL for introducing ecological content in three dimensions has become the most effective based on the gained results. The research deals with the comparison of two forms of CLIL at the lessons of English (Foreign language, level 2) – soft CLIL (implicit introduction of the eco-content) as well as the hard CLIL (explicit ‘focused’ on eco-content) type in thematic, social and linguistic levels. The research investigated the 54 sophomore students’ (A. Baitursynuly Kostanay regional university, Kostanay, Kazakhstan) reflection on study the ecology at the lessons of English on the basis of questionnaire (3 open questions, 3 multiple choice test), GPA analysis, expert evaluation of the transformed syllabus. The outcomes of the research demonstrated the preference of the soft CLIL type to the hard one due to the insufficient level of linguistic aspect of study, low level of lexical competence of students. The further research must focus attention to the balance between soft and hard CLIL types at the lessons of English enhancing the linguistic aspect of study as well as stabilizing motivation to study ecology by students.

Key words: CLIL, ecological content, soft CLIL, hard CLIL, thematic-social-linguistic aspects of CLIL.

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Ағылшын тілі сабағындағы экологиялық контент: soft және hard CLIL аспектері

CLIL жақында ағылшын тілінде жаратылыстану ғылымдарын оқытудың жаңа тәсілі ретінде қарастырылды. Түрлердің алуандылығына қарамастан, экологиялық контентті үш өлшемде ұсынуға байланысты алынған нәтижелер негізінде «жұмсақ» (soft) CLIL ең тиімді болды. Зерттеу ағылшын тілі сабақтарында CLIL-дің екі түрін (шет тілі, 2-деңгей) – soft CLIL (эко-мазмұнды жасырын енгізу), сондай-ақ тақырыптық, әлеуметтік және тілдік деңгейлердегі «қатты» (hard) CLIL (эко-мазмұнға эксплициттік «бағдарлау») салыстыруға арналған. Зерттеуде екінші курс студенттерінің 54 рефлексивті жауаптары қаралды (А. Байтұрсынұлы атындағы Қостанай Өңірлік Университеті, Қостанай қ., Қазақстан). Сауалнама негізінде ағылшын тілі сабақтарында экологияны зерттеу (6 ашық сұрақ, бірнеше жауабы бар 4 тест), GPA талдауы, жақсартылған бағдарламаның сараптамалық бағасы ұсынылды. Зерттеу нәтижелері бойынша оқытудың лингвистикалық жағының жеткіліксіздігіне және студенттердің лексикалық құзыреттілігінің төмен деңгейіне байланысты CLIL-дің жұмсақ түрі қатаң түріне қарағанда басымдыққа ие болды. Алдағы уақытта жасалатын зерттеу жұмыстары ағылшын тілі сабақтарында CLIL-дің жұмсақ және қатаң түрлері арасындағы тепе-теңдікке, оқытудың лингвистикалық аспектісін күшейтуге, сонымен қатар студенттердің экологияны үйренуге деген ынтасын тұрақтандыруға назар аударуы керек.

Түйін сөздер: CLIL, экологиялық контент, soft CLIL, hard CLIL, CLIL-дің тақырыптық-әлеуметтік-лингвистикалық аспектілері.

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Экологический контент на уроках английского языка: аспекты soft и hard CLIL

CLIL как метод недавно рассматривался в качестве нового подхода к преподаванию естественных наук на английском языке. Несмотря на различие типов, «мягкий» (soft) CLIL для представления экологического контента в трех измерениях стал наиболее эффективным на основе полученных результатов. Исследование посвящено сравнению двух форм CLIL на уроках английского языка (иностранного языка, уровень 2) – softCLIL (имплицитное введение экосодержания), а также «жесткого» (hard) CLIL (эксплицитной «ориентированности» на экосодержание) типа на тематическом, социальном и языковом уровнях. В исследовании раскрыты рефлексивные ответы 54 студентов-второкурсников (Костанайский региональный университет им. А. Байтурсынулы, г. Костанай, Казахстан) изучения экологии на уроках английского языка на основе анкетирования (6 открытых вопросов, 4 теста с несколькими вариантами ответов), представлен анализ GRA, экспертной оценки преобразованной программы. Результаты исследования показали предпочтение мягкого типа CLIL жесткому в связи с недостаточным уровнем лингвистической стороны обучения, низким уровнем лексической компетентности студентов. Дальнейшее исследование должно сосредоточить внимание на балансе между мягкими и жесткими типами CLIL на уроках английского языка, усиливая лингвистический аспект обучения, а также стабилизируя мотивацию к изучению экологии у студентов.

Ключевые слова: CLIL, экологический контент, soft CLIL, hard CLIL, тематический-социальный-лингвистический аспекты CLIL.

Introduction

The 21st century education demands the rapid change in forming the culture of the future teacher. The teacher has changed the role of knowledge transmitter performing the model to follow or reject. The correlation in knowledge, behavior and beliefs is the indivisible part of the teacher personality acting on the basis of morality. Ecological component in education has become an inseparable part of modern programmes – from normative documents in the sphere of education to certain educational programmes, plans and syllabi.

The English language as a “subjectless” one has been transformed to the platform for forming multiple intelligences, various personalities capable of protecting ‘the place of living, not only forming communicative skills’ (Stavreva-Veselinovska, Kirova, 2013).

One of the best ways to teach students is integrating knowledge of subjects in the form of merge “for students to learn various teaching contents” (Kirova, Stavreva-Veselinovska, 2011), whilst CLIL methodology occupies the leading position in this regard.

As a basic CLIL (Content language integrated learning) structure, following Pellegrino et al. it includes three components: thematic, social and linguistic. ‘Diverse formations’ (Hsieh, Ming-Hung, 2022) from various perspectives bring better results

in CLIL implementation. Following Olyunina, the language in CLIL must be focused, resulting in intensive vocabulary work and 4 Cs (Coyle, 2010) (content, communication, cognition, and culture) that is realized through three stated above levels of CLIL implementation – thematic (content), social (culture, communication), linguistic (cognition). Consequently, CLIL can become the ‘functional approach’ (Yurasova, 2015), to teach both content and language.

Literature review

The technology on CLIL has been used differently worldwide, bringing various educational aspects to clashes or peaceful composition both in language and content. Introduction of CLIL as the originally referred tool “to improve students’ language proficiency” (Arnó-Macià, 2015), had the greater impact on language skills, rather than on science knowledge. In broader sense, CLIL has been defined as a universal “any type of pedagogical approach” (Linares, Morton, 2017), used for integrating both linguistic aspects of the second or foreign language and non-linguistic content.

Typical combination of four Cs in CLIL (content, communication, cognition and culture) has led to 2 various types of CLIL – ‘soft’ and ‘hard’ ones.

Still, there is a misbalance between the content, language and instruction in CLIL methodology in two mentioned above types. There is a stable correlation between the publications on soft CLIL (mainly focused on language, rather than on content), and the hard one (content-focused teaching with low attention to linguistics and error correction).

K. Bakirova and A. Tuktassinova dedicated their research to biological content in CLIL stating that this methodology must be developed for further enhancing of content knowledge. However, even being utmost popular among Kazakhstani researches, CLIL has been viewed as something ‘complicated to be implemented in Kazakhstani educational institutions’ (Tyutenova et al., 2020).

The difficulty in implementing CLIL in various forms was thoroughly scrutinized worldwide. Following Ponomareva and Yakovleva, CLIL-technologies are used for teaching subject through English, not vice versa (2021) claiming ‘hard CLIL’ to be more effective. At the same time, CLIL must be based on the ‘authentic materials’, bringing real language to the classroom (Kholina, 2017) focusing the attention of CLIL-teachers on the ‘soft’ variant of it.

Introduction of CLIL when teaching ecology has been connected with the two dimensions of its application, too. Ananyina and Chernova state “CLIL in ecology cannot be applied constantly (school system)” (2023), while Gorbulina considers project based CLIL to be significant in learning the language on a fragmental basis (school system) (2022).

In the higher educational institutions CLIL for teaching ecology has been given a rise within the boundaries of the XXI century environmental issues (global ecological problems, introduction of CLIL as a technology, school-university ecologisation). As a result, a vast majority of scientific, methodological and practical works have been published worldwide.

Kazakhstani researchers focus their attention to CLIL in distance education (B.A. Zhetpisbayeva, D.V. Diyakov, G.A. Khamitova, A.A. Muratbekova, etc.) (2021), global issues on “Green ecology” and ecologisation of education (Zh.O. Zhilbayev, L.V. Moiseyeva, etc.) (2016).

The use of English for developing ecological outlook of HEI students has been scrutinized in recent publications. The concern of researches lies either in the sphere of effectiveness of CLIL for teaching ecology in the university, or teaching English through ecological content.

Thus, we put forward the assumption that ecological content in Content and Language Integrated

Learning refers to the inclusion of topics, themes, or subjects related to ecology, environmental sustainability, and the interconnectedness of natural systems within the curriculum in soft and hard types. This content aims to educate students about ecological principles, environmental issues, and human impacts on the environment while simultaneously developing their language proficiency in the target language. Integrating ecological content in CLIL fosters students’ awareness of environmental challenges and encourages them to consider the implications of their actions on the natural world, promoting a more sustainable mindset and global citizenship.

The article seeks to attempt the study of the two ways of CLIL applied to ecological content – ‘soft’ and ‘hard’ types, demonstrating the appropriate character of the use in Pedagogical Institution in specialty 6B01705 ‘Foreign Language: two foreign Languages’ during the educational process at the lessons of English (Professional cycle of disciplines).

Materials and methods

The use of CLIL in the given research has two dimensions – hard and soft CLIL variations versus three levels of regulations at the lesson (as the functional approach stated in the introduction of the article) – thematic, social and linguistic.

Thus, the **goal** of the research is to find out the most appropriate type of CLIL for implementing ecological content at the lessons of English.

The following **objectives** have been set in the research:

1. To analyse the typical FL syllabi (ESP, EAP, FL (levels 1-2) on the absence/presence ecological content;
2. To elaborate the eco-filled syllabus on FL (level 2, Intermediate) based on combinations soft/hard CLIL;
3. To compare the gained results (online questionnaire, summative assessment, expert evaluation of the syllabus);
4. To present the outcomes of the research (dealing with soft and hard CLIL lesson conducting).

The research question: which type of CLIL has a more effective impact on forming ecological outlook of students: soft or hard CLIL?

Hypothesis of the research – soft CLIL for teaching ecology at the lessons of English has the better effect on the formation of ecological culture of students.

Possible combinations of the tools in the given research include:

A. Soft CLIL (all themes, elements of ecology mediated content, implicit);

B. Hard CLIL (certain themes, all ecological content at the lesson, explicit).

Methods of the research are presented through the **stages** of the given work:

1. Analytical stage (analysis of entry syllabi, eco-content);

2. Transformational stage (introducing CLIL in soft/hard variations at the lesson of English (FL, level 2);

3. Post-transformational stage (analysis of the gained results in GPA, questionnaire conduct, expert evaluation).

The participants of the research are 54 students of the major “Foreign Language: two foreign languages” 6B01705, 2nd year students/sophomores studying the discipline “Foreign Language”, level 2. The period of the research is 2022-2023 academic year at A. Baitursynuly Kostanay Regional University (Kostanay, Kazakhstan).

The parameters of the participants:

1. Male – 10; Female – 44.

2. Average age – 19.5 years old.

Results and discussion

The experimental work included the following stages: analytical, transformational, post-transformational. The stages have been described below in more details.

Analytical stage of the research

Following the research plan, the analytical stage presupposes the following steps:

1. Sampling the syllabus for the transformation (FL level, 5 teachers conducting the discipline);

2. Analyzing the content of the syllabus (the per cent of thematic aspect dedicated to ecology);

3. Identifying the syllabus for further transformations (thematic, social and linguistic components).

The abstract of the syllabus on Foreign Language, level 2 demonstrates the scope of the themes dedicated to ecology (Table 1) – 3 themes out of the 12.

Table 1 – The abstract of the syllabus on “Foreign Language, level 2” – soft CLIL

Topic	Reading	Speaking	Grammar	Listening	Writing	Vocabulary	Hours
<i>Environment and people (Units 5, 6, 10)</i>	MISB p. 42 Text “Are this people criminals?” HWISB p. 92-93 A changing scene L.R. Kenan p. 206-209 “A Fish Story” “Nuclear Energy: Pros and Cons”	MISB p. 43 ex. 2 HWISB p. 92 (Pre-reading task) p. 94 ex. 1, 2	MISB p. 44 Language Point 1, Practice p. 35 Language point 2 p. 35	MISB p.43 T. 6. 1 p. 33 ex. 1, 2, 3 p. 34 T 5.1 T 5. 2 p. 36 T 5.5 p. 71 T 10.1 MIWB p. 34 ex. 1, 2, 3, 4	MISB p. 38 ex. 1, 2, 4 p. 76 ex.1, 2, 4, 5 MIWB p.23 ex. 11 Composition “How to save the world”	MISB p. 45 ex. 1, 2, 3 A Changing Scene L. R. Kenan p. 209, 210 MIWB p. 19 ex. 6, 7	20

The quantitative analysis of existing syllabi on FL, level 2 (5 syllabi from 5 working lecturers) demonstrates the following:

1) Ecological content can be found in semester 3 (12 hours), 10 % of the total content;

2) Ecological content can be found in semester 4 (6 hours), 5% of the total content (Graph 1).

As it has been seen above, soft CLIL must be applied to balance the implicit content and furthermore, to reduce the insufficient imposing the eco-content to the students when studying various themes.

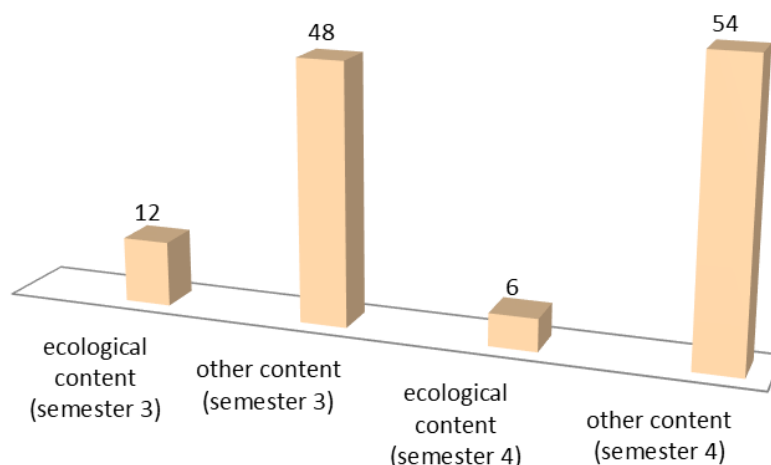
Transformational stage – soft and fragmentarily hard CLIL introduction

Following the levels of transformation of content (thematic, social and linguistic), it must be presented at every level.

Thematic level of transformation deals with the analysis of the content of FL. The sample of added subtopics and the process of transition to eco-content is presented below:

Topic 1: Family.

Eco-subtopics: ecological upbringing at home, ecological habits, ecological behavior of parents, etc.



Graph 1 – Ecological content in FL, level 2 (per semesters) – soft CLIL

Topic 2: Food.

Eco-subtopics: wasting products, utilization of food, ecologically friendly food production, eco-food, etc.

The significant idea is in the implicit character of the subtopic introduction, the students may add their own subtopics to contribute.

Social level of transformation encompasses the real social aspect of the eco-content. Consequently, the students may experience poll methods (questionnaire, interviews, feedback forms, etc.), organise real ecological events in English (eco-club, eco-volunteering, eco-projects) that really contribute to the existing social awareness.

The students composed the questionnaire (“How green are you?” “Top 5 ecological lifehacks”, “Is my house green?”).

Eco-volunteering projects reflected the real help of students (Patronage, planting trees in Kostanay, participating in eco-meetings, projects of local organisations).

All of the reports on the results of eco-activities were written and presented in English.

Linguistic level of CLIL includes the proper choice of language material (topics for reading, literature based reading, listening texts, vocabulary, etc.).

The students are free to compose their ecological glossary (the extract is presented below):

Ecology-ecological-ecologically...

Biodiversity – biodiverse ...

Habitat – habitual ...

Environment – environmental – environmentally...

Ozone layer – ...

The three aspects of the lesson when introducing the eco-content, must be within the stages of the lesson. So, the given stage of the research deals with the introducing CLIL in soft format – elaborating the system of exercises containing the eco-content via three stages of the lesson – Engage, Study, Activate (ESA) (Harmer, 2010).

Engage stage can include the following aspects:

Ecological tongue-twisters (Friendly fleas and fireflies, Hungry hunter hated hunting) can promote discussions on the topics of flora and fauna/hunting the animals.

- What is your attitude to hunting?

- How can we prevent people from killing animals/experimenting?

The *study* stage can be tailored to any topics of the syllabus.

The proper choice of texts/audio/video-materials will result in linguistic competence of students as well as in thematic aspect.

The examples of the texts can be found in various sites as British Council. The ‘environment’ topic has been presented through versatile ways – from A1 level audio and printed texts to C1-C2 levels.

Vocabulary must be equally treated for the linguistic side of soft CLIL. Mediated online tools enhance the process of learning – from presentation of the vocabulary via demonstration, translation or definition, to primary consolidation in the form of drills and recognition – to speech preparatory exercises (identification, differentiation, imitation). The content was modernized up to 20 per cent (5

subtopics were added to the content; the summative assessment contained 25 per cent of eco-issues for monologues).

Activate stage can be presented via discussions, role plays, debates (speaking skills) or essays, synopsis, narrative or descriptive writing. Here hard CLIL can be easily implemented.

For example, the themes for speaking and writing skills can be added as eco-based ones in both variations – soft and hard CLIL (see Table 2):

This stage of the research presupposed the transformation of all of the topics in syllabus into ecology-oriented with explicit meaning and low level of imposing.

Table 2 – The sample of added eco-content – soft and hard CLIL

Topic	Eco-content added (see hard type in bold)
My future profession	Monologues: Ecologist as a profession of the future. Every teacher must have ecological culture. Agree or disagree. <i>Hard CLIL: Ecologist in action: the concept of biodiversity, its significance, and factors affecting biodiversity loss.</i>
Family relations	Writing an essay: The best family holiday is being on the lone of nature. Eco-family – living in harmony with nature <i>Hard CLIL: Discuss the concept of ecological footprint and its implications on families and communities.</i>
Traveling	Project: Eco-tourism in Kazakhstan <i>Hard CLIL: Analyse the case on the benefits of ecological tourism, such as promoting biodiversity conservation, supporting local economies, and raising environmental awareness</i>
Courts and Trials	Debate: People must be prosecuted for ‘killing nature’. G.Thumberg must be the idol to follow. <i>Hard CLIL: debate on the landmark environmental court cases or legal battles that have impacted conservation efforts</i>

Post-transformational stage and discussion
Post-transformational stage included the following stages:

- analysis of the gained results in GPA;
- google form mediated questionnaire conducting on the soft and hard CLIL types of lesson conducting;

- expert evaluation of the syllabus by local stakeholders.

The analytical stage of the post-transformation was devoted to the GPA of semester 3 and semester 4 comparison. The average GPA was calculated for the exams in two semesters. Special attention was given to the question 3 in the examination card (Fig. 1).

Akhmet Baitursynuly Kostanay Regional University Department of Foreign Languages	
Examination ticket # 1	
Course: Foreign language (English) (level 2)	
Questions:	
1.	Text reading
2.	Lexico-grammatical test, listening.
3.	Monologue. Do you agree or disagree? Eco-future of our generation is optimistic.
Teacher _____	
Reviewed and approved at the meeting of the Department of Foreign Languages on _____ (date),	
Protocol # _____	
Head of Department _____ (signature)	

Figure 1 – Ecological content at the summative assessment (examination card sample at BKRU)

The results of GPA in the semester 4 (taken in question 3 as a median) demonstrated the slow increase in comparison with the semester 3 (2.33 up to 3.33) as the CLIL types were firstly introduced.

However, the results on overall competence of the students were slightly different after the separate introduction of soft and hard CLIL types.

The competency-based tests (complex language tests taken from the bank of unit tests) after the soft CLIL – lessons demonstrated the following results:

- A (excellent) – 13%;
- B (good) – 57 %;
- C (satisfactory) and below – 30%.

The competency-based tests applied after the hard CLIL – lessons demonstrated the following results:

- A (excellent) – 8%;
- B (good) – 55 %;
- C (satisfactory) and below – 37%.

The criteria for the monologue assessment included the format, style, vocabulary and grammar accuracy as well as the cohesion aspect.

Google forms contained 3 open questions, 3 multiple choice test tasks.

1. What was the most difficult – to study ecology at the topic of ecology or within the other topics? (Hard and soft CLIL).

2. Which topic mostly suits ecological content? Why?

3. Evaluate your knowledge in ecology at every topic of the syllabus (1low -5 high).

4. Evaluate your speaking skills on ecology (1low – 5high).

5. Evaluate your writing skills on ecology (1low – 5high).

6. Was it appropriate to include ecological content at the lessons of English?

Google forms created for the purposes of disclosing students' attitudes towards hard and soft CLIL at the lesson of English demonstrated the following results:

1. Hard CLIL in its pure ecological format is less effective than soft variant of it due to the following reasons: less pressure and imposing character of soft CLIL, having 'background knowledge' on other topics – cited by the students;

2. The most 'suitable' topics for the eco-content introduction included 'housing', 'travelling' and 'Environmental issues';

3. The students stay focused on ecology provided the topic deals with ecology directly, the introduction of eco-content in other topics must be 'mild' and transparent;

4. The value added result of the eco-content introduction is high self-assessment of productive skills by students (writing – 3.5, speaking – 4.5 out of 5);

5. The most challenging question on relevance of eco-content introduction demonstrated that the students are ready to study ecology 'if it is appropriate' to the content of the lesson.

It is necessary to present some anonymous views on ecology from the side of soft CLIL organization: 'I really did not care about the environment, but some topics made me change my view, maybe I will be more ecologically friendly in the nearest future'; 'The topic of ecology has always been boring, as we constantly watched films on saving the planet, discussed problems, unlike here [in the institute] when I was really planting trees, made my town cleaner via litter collection, it was great, as I acted really... and my English was used to report on all of this work done, I am proud of myself and think that this ecology works!'

However, the hard CLIL was negatively evaluated at the lessons: 'I don't need such a deep understanding on human footprints, succulents and the staff, I am a teacher of English, no more', 'It was challenging to present the ideas I couldn't come up with, I searched a lot and still just read from the slides or copies', 'It took me much time, I thought it was a waste of it...'

Expert evaluation was organised to assess the modernized content of the syllabus. Experts (2 teachers of FL, 2 teachers of ecology, 2 students) performed the isolated analysis of the content in terms of 1 low – 5 high scale:

- Relevance;
- Completeness;
- Indiscreetness;
- Linguistic appropriate character;
- Quality of the information.

Before the course modernisation the results were the following:

- Relevance (2);
- Completeness (2);
- Indiscreetness (2);
- Linguistic appropriate character (5);
- Quality of the information (5).

After the course modernisation, the expert evaluation was the following:

- Relevance (4);
- Completeness (4);
- Indiscreetness (5);
- Linguistic appropriate character (4);
- Quality of the information (5).

As it can be seen from the criteria above, the linguistic appropriacy has decreased because of the ‘overloading of the eco-content’ in hard CLIL sections resulting in low motivation to study ecology in the imposed manner.

To conclude, the research demonstrated the attempt to combine two modes of CLIL at the lesson of English as the integrative tool for developing ecological accuracy of students.

Conclusion

Having analysed the three levels of CLIL implementation, namely thematic, social and linguistic, the research reached the outcomes, both main and subsidiary.

The research reached the desired outcomes as well as realized the set of objectives:

1. The analysis of typical FL syllabi (ESP, EAP, FL (levels 1-2) on the absence/presence ecological content demonstrated the low level of information on eco-content in each topic in soft and hard types;

2. The eco-filled syllabus on FL (level 2, Intermediate) based on combinations soft/hard CLIL was modernized (the increase of eco-content reached 25 per cent compared to the original (inclusion of summative assessment modernized and transformed as well as the topics on eco-content introduced);

3. Online questionnaire, summative assessment, expert evaluation of the syllabus demonstrated the

preference of ‘soft’ CLIL type to the ‘hard’ one in teaching ecology at the lessons of FL.

Hypothesis of the research – soft CLIL for teaching ecology at the lessons of English has the better effect on the formation of ecological culture of students with 80/20 combination (soft/hard mode) – has been experimentally verified.

Research highlights include the following:

1. CLIL has demonstrated the value added aspects when forming ecological culture of future teachers;

2. Implicit introduction of eco-content through fragmental and non-imposing character into the educational content of the English language brings more effect than explicit one;

3. Soft type of CLIL includes the balanced attitude to both content (ecology), and language (English proficiency);

4. Thematic, social and linguistic levels of CLIL give the systemic approach to modernisation of eco-content at the lessons of English.

The further work on the eco-content introduction into methodology and linguistic disciplines can be performed and scrutinised.

Special attention can be given to the analysis of thematic level of eco-content transformation, social character of the modernisation as well as to the process of linguistic change of the thesaurus of the disciplines.

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