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THE MODEL FOR INTEGRATED TEACHING SUBJECTS AND FOREIGN LANGUAGES IN HIGH SCHOOL

The article deals with one of the acute problems of improving the high school educational process by means of Content and Language Integrated Learning method. Theoretical and methodological foundations, goals and principles of the content and language integrated learning have been investigated, the possibilities for foreign language support in the integrated process of teaching special subjects and professionally oriented foreign language have been considered; the model of content and language integrated learning in high school has been developed.

The main focus is on the theoretical and methodological foundations of organizing the integrated learning process in high schools. The goals, principles, structural components of the CLIL (Content and Language Integrated Learning) methodology and the features of its implementation in high school have been highlighted. In particular, the essence of such concepts as cross-curricular integration, integrated learning, foreign-language learning environment is revealed. The possibility of creating the elements of a foreign language support for the simultaneous learning of special subjects' content and mastering a foreign language for specific purposes is considered which should become a reliable basis for achieving the foreign language competence of an independent user. The development and coordination of curricula and subject programs, the harmonization of the content of the subjects, the subsequent correction of the whole integrated teaching/learning process, taking into account the results of independent testing, can significantly improve the effectiveness of the preparation of future engineers. On the basis of the analysis of the psychological and pedagogical literature the possibilities of application of this methodology for integrated teaching of various subjects in high school are substantiated. It is also noted that the concept of research is ensured by the unity of methodological, theoretical and methodological aspects. This complicated task involves integrated collaboration of high school managers, subject teachers, foreign language teachers and students.

Key words: *cross-curricular integration, content and language integrated learning, foreign language support, professional foreign language learning environment.*

Problem statement. At certain stages of social transformations, when a society is experiencing an economic, political and cultural crisis, the introduction of reforms and innovative methods that can help overcome existing problems become of particular importance. Modern Ukrainian high school, which has already started this long distance run reforming process, can not only improve the effectiveness of teaching students specific subjects and foreign language, but also reshape the system of their value orientations using the methodology

of integrated subject and language learning. In Europe, the CLIL (Content and Language Integrated Learning) integrated learning methodology was introduced in 1994. According to the philosophy of integrated subject and language learning, learning a foreign language as a separate subject is not a final goal in itself. Mastering a professionally oriented foreign language occurs through subjects that are thematically necessary and interesting for students. The essence of each specific subject should also be systematically and simply presented through a

foreign language, which improves understanding of the foreign language context, vision of intersubject connections and becomes the main guideline in achieving the goal of educational process. Such integrated activity depends on how successful the cooperation of the teaching teams (departments, chairs, foreign language teachers, subject teachers) will be organized to create a multilateral educational environment to focus on the integrated process of teaching subjects and a professionally oriented foreign language. In our opinion teaching and learning using elements of the CLIL methodology becomes more acute today and should take place in such a context in a modern Ukrainian high school. It is worth noting that wartime conditions significantly complicate the implementation of the integrated teaching/learning process in high school, as this requires interdepartmental coordination of educational activities, planning and conducting classes exclusively online.

The abovementioned approach determines the relevance of researching modern forms of subject and language integrated teaching, which can be implemented in high schools to increase the effectiveness of professional training process.

Analysis of recent research and publications.

The problems of integrated learning, which are currently being studied by a number of scientists, cover the fundamental provisions of pedagogical, psychological and methodological sciences. The theoretical provisions of the integrated learning methodology were developed by well-known foreign researchers B. Bloom, D. Coyle, I. McKenzie, D. Marsh, R. Tyler, F. Hud. The various problems of integrated learning of a subject and LM, in particular in higher education, were studied by domestic scientists L. M. Chernovaty, O. B. Tarnopolsky, N. O. Morska, M. O. Sova considered the possibilities of introducing the integrated learning model into the high school educational process. However, the insufficient number of publications devoted to problems of subjects and a foreign language integrated learning in high schools explains our interest in further research.

The idea of integrated subject and language learning (teaching) can be interpreted as selecting and combining educational material of different subjects for the purpose of holistic, systematic, and versatile study of a specialty; creating such integrated content for professional training that combines knowledge of different subjects into a single holistic multilateral focus [8, p. 11]. In the most simplified form, we consider the possibilities of creating general foreign language support for both simultaneous mastery of subjects and practical mastery of a professionally oriented foreign language, which should become a reliable basis for further development of foreign language communicative competence of high school graduates.

That is why the content of the curricula of all specialties and a foreign language should be integrated and create the necessary prerequisites for achieving both the practical goal of a separate discipline and the educational goal as a component of the multilateral focus of integrated knowledge. Each curriculum consists of specific subjects, which in turn include specific sections. Different faculties develop their own forms of curricula and subject programs, based on the main provisions of the Common European Recommendations on Language Education [9, p. 58]. Today, more than ever, joint work of teachers of different subjects (curriculum compilers) is necessary to coordinate the topics of educational material in order to create a multilateral focus of knowledge. Such a multilateral focus includes the thematic content of different subjects, discussed and agreed upon by all teachers belonging to certain chair (department) in the most logical thematic sequence, which will take into account the content of subjects and aspects of professionally oriented language in the most logical way. Curriculum development requires constant cooperation and ongoing monitoring of the effectiveness of learning outcomes throughout the academic year until the annual exams, when students' qualifications at this stage become clear (what they know and can do). After this a new correction of the integrated teaching and learning process should take place, the content of the curriculum and subject programs should be coordinated again. In European educational institutions, special curriculum councils are created, which are responsible for the analysis and development. Such curriculum councils may include the program managers, teachers and graduates [8, p. 46].

Today the process of learning foreign languages which starts in secondary schools is considered as a goal-oriented process of mastering systematized knowledge about nature, man, society, world culture, exact sciences basics by means of cognitive and practical activity, the result of which is the intellectual, social and physical development of the individual, which creates the basis for further education in high schools [3, p. 22]. Therefore, universities are to meet the need to coordinate the content of different specialties (subjects) with the subsequent use of forms and methods of cooperative-interactive technologies for teaching special subjects and a foreign language, where the special knowledge acquired by students will be adapted within the given limits of foreign language communicative competence B1 with the further development to independent user level B2 in a professionally oriented context. This will create opportunities for future Ukrainian specialists to be competitive at the world labor force market.

The objective of the article is to consider the possibilities of implementing integrated subjects and a foreign language teaching methods in high school;

to propose a high school integrated teaching model and to highlight its structural components.

Presentation of the main material. We anticipate that possible improvement of the educational process in high school at a qualitatively new level can occur provided that interdisciplinary connections are developed to a higher level of interdisciplinary integration. Among the main principles of such integrated teaching/learning we can distinguish the following: integrity, systematicity, structural and multilevel ones, correspondence of the didactic system to the economic, social and cultural spheres of life. The implementation of these principles will make it possible to optimize educational process because the integrated didactic system functioning can occur at the level of a separate unit; at the level of an educational module; at the level of an educational subject; at the level of the systemic integrity of educational cycles [6, p. 9].

Taking into account the main principle (content-based approach) implies the priority of the subject component over the language component. Adherence to this principle in teaching foreign languages contributes to the effective selection of the lexical and grammatical foreign language minimum, which may be sufficient for communication in appropriate professional communication situations, creating favorable opportunities for achieving a practical goal in a relatively short period of time. In foreign language classes, the university teacher should use the language in the target context (specific subject vocabulary, ESP texts), help students master knowledge of their professional subjects using foreign language tools. Having a number of advantages, integrated language learning allows combining thematic and non-thematic (not united by one topic) lesson algorithms. The selected topic should be thematically focused, informative, interesting for students, and also provide a sufficient amount of professional vocabulary and foreign language forms for logical thinking and speaking [2, p. 23]. An integrated approach, which naturally also implies a humanistic approach to learning, allows you to create a positive emotional atmosphere. Such a favorable atmosphere is created by the stimulating nature of the lesson, combined with professional and socio-cultural information, which corresponds to the topic being studied. An integrated approach is considered as one that allows the use of various types of work at the lessons aimed at the development and improvement of foreign language skills and speech abilities in listening, speaking, reading and writing. This form of integrated foreign language learning involves a gradual transition from speech warm-up to the subsequent execution of exercises and tasks for organizing a professional group discussion [4, p. 19]. An important factor is also the availability of appropriate authentic educational material, where

texts and tasks should be related to specific goals and real communicative situations [8, p. 11].

Today, unfortunately, in many situations thematic planning of various specialties (subjects) occurs without any discussions and subsequent coordination between subject teachers and foreign language teachers. In most high schools, there exist no general requirements or recommendations for organizing integrated teaching of a subject and a professionally oriented foreign language for their students. Besides it is necessary to mention that there is a shortage of highly qualified university staff, especially for technical specialties. It must be admitted that some high schools grant the teachers, who are familiar with the methodology of teaching foreign languages, permission to teach certain professional subjects in a foreign language (for example technical translation).

The process of planning special subjects and conducting classes in a certain specialty requires creating close contacts as well as maintaining mutual understanding of the teaching process between foreign language teachers and teachers of special subjects (electrical engineering, electronics, metallurgy, house building etc.). Regarding the number of subjects that are selected for the creation of curricula, as a rule, they try to combine close technical sciences; various natural sciences; theoretical (fundamental) and applied sciences; natural and social sciences; foreign languages and cultural environment [9, p. 53].

The complexity of implementing elements of integrated teaching/learning process in high school is explained by the need for:

- discussion and agreement by all participants of the thematic content of various subjects including foreign language (cross-curricular integration, integrated learning, professional foreign language learning environment);
- extension of the foreign language content for various subjects (reinforcing the content with foreign language material in the form of advertising, instructions, tables, graphs, etc.);
- simplification of elements of foreign language support and alignment with the content of subjects;
- organization of close cooperation between high school management, subject teachers, foreign language teachers and students.

However, subject teachers do not always actively cooperate with foreign language teachers and quite rarely reinforce the content of their subject lessons with foreign language material in the form of advertising, instructions, tables, graphs, etc. This means that high school students have limited opportunities to use the acquired foreign language skills and habits at the lessons in specific subjects. That is why subject teachers should extend and diversify the content of their lessons with elements of foreign language support, just as foreign language

teachers should help to assimilate information from other subjects through a simplified foreign language in an integrated way, using innovative methods and techniques of teaching foreign languages for specific purposes [1, p. 111; 5, p. 15].

In our opinion, the introduction of language elements for integrated teaching of subjects and language can be most effective if we use the model of integrated teaching of subjects and IM in high school developed by us (Table 1).

Conclusions and prospects. Thus, the effective development of professional skills of high school students makes it necessary to administer a gradual transition from teaching individual subjects, supplemented by language support, to real inter-subject integration. Development and coordination of educational and subject programs requires constant coordination of their content by high school stuff (managers, teachers of various subjects, psychologists), subsequent correction of the entire process of integrated teaching/learning which should take into account the results of independent testing. These measures can significantly increase the

effectiveness of training high school graduates. No less important should be the consideration of the model's substantive components for integrated teaching/learning in high school, which will help integrate the teaching of subjects and professionally oriented foreign language within a certain pedagogical team. The implementation of the methodology of integrated teaching of the subject and foreign language is most important and requires the organization of active cooperation between special subject teachers and foreign language teachers at the faculties (chairs).

The complexity of the entire integrated process within a specific academic structure which involves high school management, numerous teachers and students is obvious. Gaining pedagogical experience and improving the educational process also involves a new approach to organizing extracurricular educational activities, as well as performing other transformational tasks of a pedagogical nature, for example, organizing motivated groups of students, creating a strong foreign language learning environment within the faculty, organizing subject meetings with qualified foreign specialists which helps

Table 1

Model of integrated teaching of subjects and foreign language in high school

Productive cooperation of all participants in integrated teaching/learning: departments, subject teachers, foreign language teachers.		
The main goal is to use elements of general foreign language support to develop interdisciplinary connections and subject integration.		
Principles of organizing integrated learning: - creating a multiple educational focus; - providing a favorable learning environment; - organizing active learning of all participants; - supporting cooperation of participants in integrated teaching/learning		Tasks: - to determine the theoretical and methodological principles for integrated teaching of subjects and foreign language and study peculiarities of such process in high school; - to justify the introduction of language support for integrated teaching the specific subject content and foreign language; - to agree on the possibilities of practical application of elements of general language support in integrated learning of subjects and foreign language
Pedagogical conditions: - orientation on the priority of the subject component over the language component; - creating a strong foreign language learning environment; - using a personality-oriented approach and humanistically oriented pedagogical technologies in the educational process; - encouraging students' activity in group and pair work; - introducing elements of foreign language support for teaching subjects.		
System of subject support language elements		
Stage	Organizational forms	Coordinated aspects of curricula, various subjects, extracurricular activities
1	Theoretical knowledge	1. Subject, theme, objectives, interdisciplinary connection (engineering, foreign language). 2. Subject, theme, objectives, interdisciplinary connection (electronics, foreign language). 3. Subject, theme, objectives, interdisciplinary connection (house building, foreign language).
2	Group discussions	1. Discussion of problems related to the topic of the lecture. 2. Reinforcement of the subject content with foreign language material in the form of advertising, instructions, tables, graphs, etc. 3. Use of authentic sources of information.
3	Practical actions	1. Viewing and discussing popular science films in a professionally oriented foreign language. 2. Meetings with experienced engineers of different industries (conferences, round tables). 3. Meetings with foreign language native speakers (business people, supervisors, volunteers). 4. Extracurricular activities in a foreign language (performances, concerts, intellectual games, etc.). 5. Participation in international projects in corresponding professional spheres.

to improve the level of students' foreign language communicative competence. Therefore we believe that the specified model for organizing integrated teaching of special subjects and a professionally oriented foreign language should be introduced in high schools aimed at reforming the system of Ukrainian education.

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Александров В. М., Александрова О. Ф., Пінчук Л. М. Модель інтегрованого навчання предметів і іноземної мови у вищій школі

Стаття присвячена одній з актуальних проблем удосконалення навчального процесу в вищій школі засобами методики інтегрованого навчання предмету та мови. Досліджено теоретико-методичні засади, цілі та принципи методики інтегрованого навчання спеціальних предметів та професійно-орієнтованої іноземної мови, розглянуто можливості впровадження елементів загальної іншомовної підтримки в інтегрованому навчанні спеціальних предметів та іноземної мови на немовних факультетах; розроблено модель інтегрованого навчання предметів та іноземної мови у вищій школі.

Основну увагу зосереджено на теоретико-методичних засадах організації процесу інтегрованого навчання в сучасній вищій школі. Висвітлюються цілі, принципи, структурні компоненти методики CLIL (Content and Language Integrated Learning) та особливості її впровадження у вищій школі. У найбільш спрощеному вигляді розглядаються можливості створення загальної іншомовної підтримки для одночасного засвоєння студентами змісту навчальних предметів спеціальності і оволодіння професійно-орієнтованою іноземною мовою, що має стати надійною основою для розвитку іншомовної компетенції від рубіжного рівня B1 до рівня незалежного користувача B2. Розробка і координація навчальних та предметних програм, узгодження змісту навчальних предметів, наступна корекція всього процесу інтегрованого навчання з урахуванням результатів незалежного тестування можуть суттєво підвищити ефективність підготовки здобувачів вищої школи. На основі аналізу педагогічної і методичної літератури обґрунтовуються можливості впровадження інтегрованого навчання предметів спеціальності та іноземної мови в вищій школі, що передбачає здійснення поступового переходу від окремих міжпредметних зв'язків до реальної міжпредметної інтеграції. Запропонована модель інтегрованого навчання предметів та іноземної мови може бути використана для подальшого практичного розвитку ідеї інтегрованого навчання спеціальних предметів та іноземної мови для спеціальних цілей з метою реального реформування сучасної вищої школи. Зазначається також, що концепція дослідження забезпечується єдністю методологічного, теоретичного та методичного аспектів. Таке ускладнене завдання передбачає інтегровану співпрацю керівників вищої школи, викладачів предметів, викладачів іноземних мов та студентів.

Ключові слова: міжпредметна інтеграція, інтегроване навчання предмету та мови, іншомовна підтримка спеціальних предметів, іншомовне навчальне професійне середовище.