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STUDENTS' COGNITIVE AUTONOMY FORMATION IN THE PROCESS OF ENGLISH FOR SPECIFIC PURPOSES LEARNING: A MODEL OF IT IMPLEMENTATION INTO TRADITIONAL TEACHING

Abstract. Due to the rapid development of new information technologies, educational techniques require rethinking of approaches to teaching methods and tools to fulfill the needs of learners regarding their training for the future job. The educators should consider not only the interests of students but the demands of employers who are looking for quick-thinking specialists ready to acquire new knowledge and skills in short terms. The article presents a model for teaching ESP (English for Specific Purposes) which facilitates formation of students' cognitive autonomy. On the basis of scientific and theoretical analysis of this issue, the author considers the methodological approaches to its elucidating. To clarify the structure of students' cognitive autonomy, the author provides the components and their subjective links on the subcomponents level on the hierarchical basis. The author determines the criteria and levels of students' cognitive autonomy as well as subjective and objective factors influencing the efficiency of students' cognitive autonomy in ESP study which were obtained through methods of mass survey (interviews, conversations, questioning), targeted observation of the formation of students' cognitive autonomy; methods of testing and ranking. As a result, the author designed and implemented into practice a model for teaching ESP, which represents a flexible educational environment with a suitable choice of teaching techniques, modes, strategies, tools, and resources on the basis of the integral unity of information technologies and traditional teaching technologies. The stages of the experimental teaching included the following: preparing the experiment, implementing, processing the results, and interpreting them. For the analysis and correlation of the income and the outcome sample data, the author applied statistical methods. Thus, the synthesis stage of the experiment allowed confirming the effectiveness of the implemented model for teaching ESP, which facilitates students' cognitive autonomy formation.

Keywords: autonomy; cognitive; model; formation; ESP; blended learning; information technologies.

1. INTRODUCTION

Integration with global social and cultural space requires Ukrainian system of education to shift to the modern paradigm based on the principles of effective implementation of teaching innovations at different levels. Under such conditions, there is an objective need for the creation of teaching technologies that meet diverse educational and professional needs of each individual as well as fulfill needs in the optimization of teaching process in higher educational institutions.

One of the strategic objectives is to change the "learning for life" approach for "lifelong learning" one. This aim is emphasised in a range of UNESCO reports and memorandums submitted to the UNESCO Institute for Lifelong Learning [1] – [5]. Thus, the teaching process in higher education should have the following features: the role of a teacher implies organization, administration, consulting, and control; students are initiative, independent, able to plan, maintain and self-control their cognitive activities as well as be responsible for their learning, etc. In these

terms, the independent cognitive activity of students is dominant, which requires a particular level of cognitive autonomy to perform cognitive and professional tasks effectively.

In this paper, we use the term ‘model for teaching ESP’ to describe flexible educational environment favorable for the formation of students’ cognitive autonomy as an essential quality of an individual enabling him/her to study independently, acquiring various professional knowledge and skills by means of a foreign language during their life. ‘Flexible educational environment’ implies a rapid shift from tools and methods which do not work to those optional ones which are optimal for the further development of students’ cognitive autonomy.

The purpose of the article is to highlight the methodology and results of a research and experimental work aimed at verification of the effectiveness of the model for teaching ESP which represents a flexible educational environment with a suitable choice of teaching techniques, modes, strategies, tools and resources on the basis of the integral unity of information technologies and traditional teaching technologies.

The objectives of the research are: to identify subjective and objective factors affecting the efficiency of students’ cognitive autonomy formation in ESP study; to design a model for teaching ESP which facilitates the formation of students’ cognitive autonomy; to validate the designed model as a possible tool for the formation of students’ cognitive autonomy.

2. THEORETICAL BACKGROUND

Having reviewed a number of scientific studies, we can conclude that the issue of students’ cognitive autonomy formation has been widely discussed and researched for many years by different experts in the fields of psychology and education.

The issues of cognition and autonomy arose in the ancient world and were largely a part of philosophy. Thus, the philosophers of ancient times (Confucius, Heraclitus, Democritus, Plato, Aristotle) believed that human development was carried out efficiently only in the process of self-perfection of the individual, in the process of self-discovery. The philosophers of Ancient Greece Aristotle and Plato stressed the importance of voluntary, active and independent learning. Socrates said that human thinking could successfully develop the process of self-activity and ability to improve through self-learning and activity that brought joy, satisfaction and prevented passivity in learning new knowledge. Socrates was one of the first to suggest the need for individuals’ cognitive autonomy formation. His heuristic conversations can be regarded as one of the methods aimed at enhancing cognitive autonomy. J. Kamensky, who paid much attention to cognitive autonomy and the methods of its formation, criticized the educational system of the time for its focus on teaching to watch with someone's eyes, to think with someone's mind. Learning autonomy began to be widely discussed in the 19th – early 20th century. Reviewing a range of researches, we found that the issue of learning autonomy is argued in terms of individualization featured as (1) "individual" (independent person); (2) the quality of the person that has certain abilities; (3) performing certain actions with initiative and making independent solutions; (4) identification of the person as a creative one.

The accumulation and analysis of multiple sources demonstrated that through the prism of a practice-oriented approach ‘cognitive autonomy’ can be considered as a personal quality which reveals itself in practical activities performed in a dynamic and changing professional environment (A. Leontev [6], S. Rubinshtein [7], M. Soldatenko [8]). As for a competence-based approach, cognitive autonomy implies the ability to perform professional tasks using a range of universal knowledge and skills (Y. Zymnyaya [9]). The representatives of a learner-centered approach focus on learners’ personal peculiarities (N. Alekseev [10], I.Bekh [11], H. Kytayhorodskaya [12], M. Weimer [13]). In its turn, a systematic approach allowed

conceptualization of cognitive autonomy as a system consisting of integrated components (S. Arkhanhelskyy [14], V. Bepalko [15], I. Malafiyik [16], Roth & Roth [17]).

A number of analysed views on the phenomenon under study brought us to the conclusion that ‘students’ cognitive autonomy’ is a concept which should be considered as an integrative quality of an individual, which implies the ability to effectively plan, organize, implement and evaluate the results of his/her educational activities without objective interference and influence, to find new approaches to solution of cognitive tasks through the acquisition of new skills as a basis for further self-education or in professional activities.

Accumulated information on the structure, criteria, indicators and levels of students’ cognitive autonomy allowed us to consider the studied phenomenon as a system, consisting of the following components – Goal & Motivation (goals, motives), Determination (volitional qualities of personality: dedication, discipline, determination, perseverance, independence), and Functioning (skills, knowledge).

The system methodological approach gave the opportunity to consider the educational process as interactions of two systems – teacher-learner / learner-teacher. Thus, students’ cognitive autonomy can be formed by a shift in relationships of power and control within the classroom. L. Dam [18] says that autonomy should be developed through the negotiation of curriculum and classroom tasks. V. Kohonen [19, p. 19] argued the idea that autonomy implies interdependence, emphasizing that “Personal decisions are necessarily made with respect to social and moral norms, traditions and expectations. Autonomy thus includes the notion of interdependence, that is being responsible for one’s conduct in the social context: being able to cooperate with others and solve conflicts in constructive ways”.

Due to the fact that our research is conducted at a university, we consider the process of students’ cognitive autonomy formation through the interaction of the teacher and the learners as active agents in the teaching-learning educational environment. So, we hypothesized that the students’ cognitive autonomy could be formed more effectively in a flexible educational environment which is designed considering the factors which are on the way of the forming process. This made us think that having in mind the main aim – students’ cognitive autonomy – we have to plan, organize, implement and reflect different procedures interconnected and structured into a model of teaching.

3. RESEARCH METHODS

The experiment involved 320 students from National University of Technologies and Design, Kyiv, Ukraine, majoring in engineering sciences (automated systems of industrial control, mechanical engineering, industrial engineering, textile manufacturing, etc.), who were doing an ESP course. 156 of them formed an experimental group, and 164 – a control group.

The research recognized that the subjective factors which are directly associated with personal qualities and characteristics of an individual as well as objective factors such as educational environment and circumstances that do not depend on the student, affect the process of cognitive autonomy formation.

We conducted a range of questionnaires to determine motivating factors encouraging students to activities aimed at cognitive autonomy formation. The data obtained showed that in a complex set of motives objective motivation had a dominant position (0.68:1), cognitive and professional motivation were almost balanced (0.59:1 and 0.55:1 respectively), negative motivation also existed (0,42:1).

Furthermore, the students were surveyed by means of a test, which showed that the level of volitional qualities of students is mostly intermediate (82.1%) and high (17.9%).

At the next stage we estimated the level of foreign language competence according to ALTE (Association of Language Testers in Europe) scale, offering students to perform some

language tests and interviewing them to determine the level of knowledge and skills necessary for effective learning and cognitive activity (knowledge 19.5%, primary skills 36.45%, secondary skills 31.4%, automated skills 12.65%). This level of language competence affects the functioning level of students' cognitive autonomy (awareness 14.75%, cognition 41.85%, behavior 33.45%, interaction 9,95%).

We analyzed the content and syllabi of the ESP course, legal acts in the field of higher education to observe the state of the issue researched as well as to estimate the potential of the current educational environment for its further modification aimed at students' cognitive autonomy formation.

Theoretical and empirical data analysis, synthesis, systematization, and generalization resulted in designing a model for teaching ESP aimed at facilitating students' cognitive autonomy formation, integrity and consistency of which are ensured by its structural and functional units (Fig.1).

A conceptual unit ensured the implementation of leading ideas. The methodological sub-unit reflects determined methodological approaches that made a theoretical basis for the research as well as the development and implementation of the whole model for teaching.

A diagnostic unit was implemented by conducting an empirical research such as identifying the objective and subjective factors, conducting different tests and surveys to obtain valid results proving the effectiveness and adequacy of the flexible educational environment.

A functional unit represents elementary algorithm of teacher's activity, which implies careful analysis and selection of ESP course content, which is supposed to be closely connected with the students' future professional activity and thus can motivate learners to master it. Also, a supporting function of a teacher is to maintain and encourage students' cognitive activity through a proper combination of modes of study, teaching strategies and teaching means which constitute a flexible educational environment.

An outcome unit is associated with the prediction of the expected result and the outcome of the experiment, estimating the level of students' cognitive autonomy according to the criteria and levels – evaluation and analysis of which confirms the efficiency of the teaching model.

Having analyzed the income data about the subjective and objective factors influencing formation of students' cognitive autonomy, we reviewed the goals, objectives, and content of the ESP course and chose means, strategies, and modes of study to ensure the adaptability of the flexible educational environment.

Taking into account the relevant factors, we made the emphasis on the following objectives: (1) formation of motivation for ESP study and acquiring cognitive skills; (2) formation of students' cognitive skills, increasing the level of foreign language competence, the acquisition of knowledge about rational methods of cognitive activity, i.e., "learning to learn" competence; (3) implementing traditional and innovative teaching strategies, modes of study and tools to supplement students' cognitive autonomy formation.

As for the formation of motivation, it occurred at all stages of the educational process:

- at the early stage of the course and any theme module through (1) updating regulatory requirements of the syllabus, necessity for the future professional activities and disclosure of personal and valuable sense of knowledge and skills for mastering the content of the subject (acceptance ratio is objectively and subjectively important goals); (2) encouraging students to successful performing of the task, making them feel a kind of "Creator of circumstances", able to overcome the difficulties (forming the motive of achievement);

- while studying to assure a better understanding of the theoretical and practical relevance of assimilated knowledge through the essential content of the course (contextual basis) and selection of teaching resources as a system of practical tasks simulating possible professional situation aimed to boost students' cognitive activity;

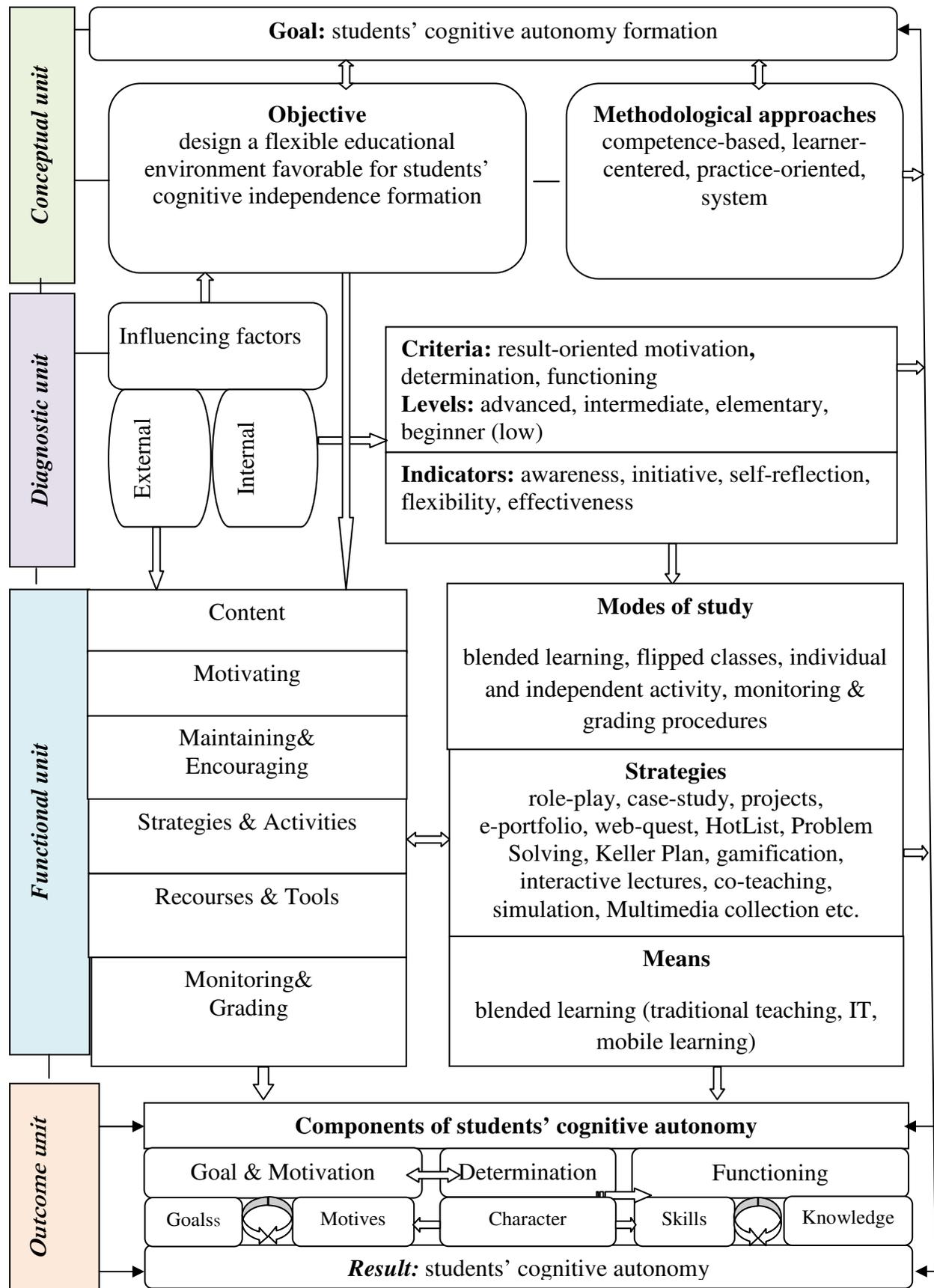


Figure 1. A model for teaching ESP, which facilitates students' cognitive autonomy formation

- at the grading and marking stage focusing on the development of students' self-reflection and self-control.

As for the formation of learning as well as cognitive skills of students we provided a range of manuals and memos called "Learning to learn", namely "How to work with a bilingual dictionary", "How to work with a new text without a dictionary", "How to work with audio texts", "How to prepare a presentation" etc.

We supposed that modes of study should provide an organic combination of traditional and innovative approaches to planning, organizing, maintaining and monitoring students' cognitive autonomy formation (blended learning). Then, we assessed innovative strategies based on contextual learning, suggesting maximal involvement in the learning activity of all students without exception, and the realization of the potential of each individual through the combination of interactive methods and IT.

Among the types of classes (modes) we can approve of various types of seminars (seminar-presentation, seminar-competition, seminar-quiz, seminar-trail, seminar-debate, seminar-tournament, integrated seminar, a team-work seminar, seminar-briefing, seminar-report); interactive workshops, Keller Plan workshops (when more capable students act as teacher's assistants consulting other learners), Eureka lectures, excursions, business role-plays, roundtables or conferences, press conferences, auctions of knowledge, interviews, etc. The students got interested because all the activities named above were conducted in the educational environment simulating real business situations and allowed all the participants to realize their skills and fulfill their ambitions.

As there is a worldwide tendency in education to reduce in-class study in favor of the autonomous study, we implemented flipped classes which imply independent study of new material followed by classroom training in the form of discussions, explanations, generalization and creative interpretation of the obtained information. This is mostly done through viewing a series of 5-10 minute video lectures that are posted on the Internet or cloud, i.e., podcasts recorded by the teacher or a video of native speakers presented online.

Blended learning has much more advantages compared to the traditional one. Its implementation in the teaching-learning process helps

- to facilitate course management and resources for a learner support. For example, to provide information and resources to students (e.g., lecture notes or recordings, assessment guidelines), and to perform basic administrative functions (e.g., announcements or course emails);

- to enrich the quality of the student learning experience through interactive learning activities beyond those attainable through face-to-face classroom interactions. For example, utilizing technology to support communication and collaboration, assessment and the management of the course;

- to support learning that is largely self-directed but also involves the use of interactive and collaborative learning activities. In this mode, courses are delivered fully online.

The analysis and validation of the results of the implemented model for teaching ESP, which facilitates students' cognitive autonomy formation, allows us to conclude that it is efficient, as it 1) fully takes into account the individual learning style of students (level of the language knowledge, personality type, cognitive abilities, pace of learning), 2) gives the limitless opportunity to access online information and resources; 3) allows maximum involvement of students in learning activities; 4) engages and motivates students through interactivity and collaboration enhancing academic efficiency; 5) supports course management activities (communication, assessment submission, marking and feedback).

Blended learning promotes the individualization of education and students' socialization. On the other hand, there is a misconception that the use of the Internet technologies negates the need for face-to-face education.

Blended learning develops the ability to organize and plan work independently to obtain and analyze knowledge, to search for and select information, make decisions, to study independently. In addition, it allows forming skills of presentation of projects, which are especially important for the future professional activity of learners.

As a result of implementing blended learning the following skills are formed: self-planing and self-organization of effective learning, orientation toward the final result; decision making skills; responsibility for making choices; ability to work in the information space for selecting information in accordance with the subject, structuring the information, and its presentation using various information technologies.

However, blended learning involves a number of technical problems (hardware and software support; low bandwidth ability of communication channels, etc.), social and psychological problems (problems in student-teacher interaction; level of students' self-organization; affordability of the Internet), educational problems (lack of teachers' readiness to use the technology; lack of direct contact with a teacher, the need to create didactic materials in digital form, etc.).

Of course, the implementation of blended learning requires a lot of effort. It requires changes to the regulatory framework and developing appropriate training content and retraining of teachers. But without doubt, today's trends in all the fields of social and industrial activities call for a global plan for modernization of the entire educational sphere. In our opinion, the development of blended learning may be one of the key directions of this modernization plan.

Students' autonomous work was based on the differentiated and gradual basis, i.e., taking into account the level of foreign language competence, the individual characteristics of perception and reproduction of the information in the foreign language, the levels of cognitive independence. The students were involved in project work, guided tours, presentations, composing resumes and portfolios; writing essays and reviews, observing a thematic directory of sites, reviewing sites on the given topic, work with web-quests and mailing lists, participation in webinars and forums, online chats, Skype and ICQ communication; they analyzed and created multimedia projects and presented them. Those who had a high level of foreign language competence defended their theses in foreign languages.

To control and grade students' progress we used both traditional and innovative means and forms such as matrix testing, training cards, auctions, workshops, writing letters, essays, situational tests, proficiency games, individualized independent work, presentations with the use of multimedia technologies, online practicing with various computer applications, network services, online testing, and others.

We implemented innovative methods based on contextual learning, suggesting absolute involvement of all the students in the learning activity and the realization of each individual's potential through the combination of interactive and IT-methods: business gaming, role-playing, active programmable learning, problem lectures, "learning to learn" activities, a method of developing critical-thinking, problem-based learning, a method of projects, a case-study (analysis of specific situations), electronic portfolios, "Multimedia collection", WebQuest, Hot List (review and analysis of top-rate websites), etc.

Of course, before implementing IT into the educational process, it is essential to check if each student and the educational institution on the whole are provided with the necessary equipment and access to the Web.

To optimize the process of students' cognitive autonomy formation we used a range of IT tools and means. They are the following: Internet services (e-mail, mailing lists, web forums, blogs, wiki; chats, webinars; social networks such as Facebook, Twitter, Vk; streaming media, YouTube, Internet radio, Internet TV; IP-telephony, Skype, Google Talk, ICQ; Wikipedia, Google), mobile educational software (Moodle, multimedia applications).

4. THE RESULTS AND DISCUSSION

Having implemented the experimental model of teaching, we needed to estimate its effectiveness through analysis of the income and the outcome data obtained by conducting questionnaires, surveys, and interviews; monitoring students' cognitive activity via testing and grading. The dynamics of students' cognitive autonomy formation was analysed by comparing the control and the experimental groups (table 1).

Monitoring of the dynamics of students' cognitive autonomy formation was done considering a set of criteria. The experimental group showed a qualitative change in the level of cognitive autonomy. The most significant changes occurred with the level of motivation – the number of students with critical and low-level motivation decreased by half. Since the dynamics of cognitive skills formation is 19.4% for secondary skills and 8.7% for automated skills level, we can see its positive impact on the quality of overall functional level, as the behavior level increased by 13.1% and interaction level by 8.2%.

Table 1

Data on the dynamics of students' cognitive autonomy formation in the control and the experimental groups, %

Criteria		Group	Levels							
			Low		Elementary		Intermediate		Advanced	
			in	out	n	out	in	out	in	out
Result-oriented motivation		C	9.7	10.4	43.3	43.9	35.4	32.9	11.6	12.8
		E	11.6	5.7	44.8	18.5	35.8	52.6	7.8	23.2
Determination		C	-	-	-	-	84.1	82.9	15.9	17.1
		E	-	-	-	-	80.1	75	19.9	25
Functioning	Knowledge	C	19.3	15.7	35.3	33.7	32.2	35.8	13.2	14.8
		E	19.7	8.7	37.6	20.5	30.6	50	12.1	20.7
	Skills	C	14.1	11	42.1	39.6	33.5	36.6	10.3	12.8
		E	15.4	10.3	41.6	25.5	33.4	46.5	9.6	17.8

(C – control group, E – experimental group, in – income, out – outcome)

The research findings from this experiment confirm the effectiveness of the model of teaching ESP which facilitates the formation of students' cognitive autonomy through creating a flexible teaching environment. This research argues for a differentiated approach to the organization of educational process considering data obtained during the monitoring of the effectiveness of students' cognitive activities, which indicate the discrepancy between the predicted and the actual level of the quality being formed.

We applied methods of mathematical statistics for validation of results of the pedagogical experiment. Firstly, we assumed that the experimental and the control group were equal using Shapiro-Wilk test. We compared the coefficient of normality of distribution with $p = 0.05$. As the control group had a normal distribution ($p = 0.49344 > 0.05$), we used T-student test, which showed that $g = 0.179701 > 0.05$, and therefore there were no significant changes in the level of students' cognitive autonomy. As for the experimental group, where $p = 0.02675 < 0.05$ and is not normal, we applied non-parametric methods – Sign test and Wilcoxon signed-rank test which showed that $p = 0.042522$ and $g = 0.001217$ (respectively

< 0.05). This statistics allows us to confirm perceptible qualitative and quantitative changes in the level of students' cognitive independence.

5. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

The results of the experimental work give every reason to believe that the set goal is achieved through the realization of objectives by means of our model for teaching ESP, which facilitates formation of students' cognitive autonomy, which in its turn demonstrates the importance of the conducted research and its outcomes for theory and practical implementation in the modern context of higher educational institutions. But the results do not claim to be a perfect and final exhaustive coverage of the issue under study. We see the prospects for further scientific investigation in examining psychological and pedagogical features of cognitive autonomy, consideration of cognitive autonomy formation in the paradigm school – university – job, debating the specific autonomous skills required in a particular professional environment, and selecting IT tools optimizing autonomous training and retraining of specialists in different business spheres.

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ФОРМУВАННЯ ПІЗНАВАЛЬНОЇ САМОСТІЙНОСТІ СТУДЕНТІВ У ПРОЦЕСІ ВИВЧЕННЯ ІНОЗЕМНИХ МОВ ПРОФЕСІЙНОГО СПІЛКУВАННЯ: МОДЕЛЬ ІМПЛЕМЕНТАЦІЇ ІТ У ТРАДИЦІЙНЕ НАВЧАННЯ

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Анотація. Через швидкий розвиток інформаційної галузі, освітні технології вимагають переосмислення підходів до вибору форм, методів та засобів навчання задля задоволення потреб тих, хто навчається, зважаючи на особливості їх майбутньої спеціальності. Педагоги мають враховувати не тільки особисті інтереси студентів, але й вимоги працедавців, які потребують кмітливих та гнучких працівників, які здатні опанувати нові знання та навички в обмежені терміни. У статті розглядається педагогічна модель формування пізнавальної самостійності студентів у процесі вивчення іноземних мов професійного спрямування. Спираючись на науково-теоретичне дослідження автор обґрунтував методологічні підходи до вирішення поставленої проблеми. Автор розглядає структуру пізнавальної самостійності студентів як систему компонентів та їх взаємовпливових зв'язків на рівні субкомпонентів на ієрархічній основі. Автор конкретизує критерії, показники та рівні сформованості пізнавальної самостійності студентів, а також визначає об'єктивні й суб'єктивні чинники, що впливають на ефективність формування пізнавальної самостійності студентів у процесі вивчення іноземних мов, були отримані емпіричним шляхом завдяки методам масового опитування (опитування, бесіда, анкетування), цілеспрямованому моніторингу процесу формування пізнавальної самостійності студентів, методам тестування та ранжування. Теоретична та емпірична розвідка стають підґрунтям для розробки та імплементації педагогічної моделі формування пізнавальної самостійності студентів у процесі вивчення іноземних мов професійного спрямування на основі створення варіативного дидактичного середовища через доцільний вибір форм організації навчання, методів та засобів навчання на засадах інтегральної єдності інформаційно-комунікаційних та традиційних педагогічних технологій. Експериментальне навчання здійснювалось у кілька послідовних етапів: підготовчий етап, практична імплементація, опрацювання отриманих результатів. З метою аналізу та кореляції вихідних та вхідних даних автор застосовує статистичні методи. Отже, узагальнюючий етап дослідження дає змогу підтвердити ефективність апробації педагогічної моделі формування пізнавальної самостійності студентів у процесі вивчення іноземних мов професійного спрямування.

Ключові слова: самостійність; пізнавальний; модель; формування; англійська мова професійного спрямування; змішане навчання; інформаційні технології.

ФОРМИРОВАНИЕ ПОЗНАВАТЕЛЬНОЙ САМОСТОЯТЕЛЬНОСТИ СТУДЕНТОВ В ПРОЦЕССЕ ИЗУЧЕНИЯ АНГЛИЙСКОГО ЯЗЫКА ПРОФЕССИОНАЛЬНОЙ НАПРАВЛЕННОСТИ: МОДЕЛЬ ИМПЛЕМЕНТАЦИИ ИТ В ТРАДИЦИОННОЕ ОБУЧЕНИЕ

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Аннотация. В связи с быстрым развитием информационной отрасли образовательные технологии требуют переосмысления подходов к выбору форм, методов и средств обучения для удовлетворения потребностей учащихся, учитывая особенности их будущей специальности. Педагоги должны учитывать не только личные интересы студентов, но и требования работодателей, которые нуждаются в находчивых и гибких работниках, способных освоить новые знания и навыки в ограниченные сроки. В статье рассматривается педагогическая модель формирования познавательной самостоятельности студентов в процессе изучения иностранных языков профессионального направления. Опираясь на научно-теоретическое исследование, автор обосновал методологические подходы к решению поставленной проблемы. Автор рассматривает структуру познавательной самостоятельности студентов как систему компонентов и их взаимоотношений на уровне субкомпонентов на иерархической основе. Автор конкретизирует критерии, показатели и уровни сформированности познавательной самостоятельности студентов, а также определяет объективные и субъективные факторы, влияющие на эффективность формирования познавательной самостоятельности студентов в процессе изучения иностранных языков, полученные эмпирическим путем благодаря методам массового опроса (опрос, беседа, анкетирование), целенаправленному мониторингу процесса формирования познавательной самостоятельности студентов, методам тестирования и ранжирования. Теоретическая и эмпирическая разведка становятся основой для разработки и имплементации педагогической модели формирования познавательной самостоятельности студентов в процессе изучения иностранных языков профессионального направления на основе создания вариативной дидактической среды через целесообразный выбор форм организации обучения, методов и средств обучения на основе интегрального единства информационно-коммуникационных и традиционных педагогических технологий. Экспериментальное обучение предполагало следующие шаги: подготовительный этап, практическую имплементацию, обработку полученных результатов. С целью анализа и корреляции входящих и исходящих данных автор применяет статистические методы. Таким образом, обобщающий этап исследования позволяет подтвердить эффективность апробации педагогической модели формирования познавательной самостоятельности студентов в процессе изучения иностранных языков профессионального направления.

Ключевые слова: самостоятельность; познавательный; модель; формирование; английский язык профессионального общения; смешанное обучение; информационные технологии.

