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ҒЫЛЫМИ ЖУРНАЛЫ

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Торайғыров университета

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УНИВЕРСИТЕТІНІҢ
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DEVELOPING OUTCOME - BASED ENGLISH FOR SPECIFIC PURPOSES CURRICULUM FOR CHEMISTRY-BIOLOGY STUDENTS

Intended learning outcome-based framework in higher education serves as both a theoretical foundation for curriculum design and a skills development tool. This article describes constructive alignment of the university, faculty, curriculum, course and lessons in order to create an effective framework of English for Specific Purposes (ESP) curriculum for Higher Education students who are majoring in chemistry and biology. The term constructive indicates that students are fully accountable for the information and abilities they have acquired. In turn, a teacher's responsibility is based on taking into account what students must learn in order to achieve learning outcomes. A suitable curriculum with sufficient learning opportunities can increase the likelihood that students will achieve desired outcomes. Thus, the article shows the role of the teacher who is directly responsible for leading this coordinated educational process such as implementation of all the values defined by the university, faculty, curriculum, and course through complicated forms and techniques of teaching, as well as the logical use of a system of technical means and visual aids.

Keywords: Intended Learning Outcomes (ILO), constructive alignment, curriculum, English for Specific Purposes (ESP), chemistry, biology

Introduction

When creating a curriculum, a Great Teacher must understand how different aspects relate to one another in order for the learning process to be effective. And the solution comes to mind right away: an excellent teacher is someone who enjoys learning and is always seeking out fresh information about subjects they are teaching. It has already become obvious to everyone that the training of future teaching staff is the top priority today in educational policy of Kazakhstan. Examples are the increase in the passing score in the unified national test (UNT) for those students who are entering pedagogical specialties, and the scholarship for future teachers has increased significantly. Along with all of the above, the desire to achieve world standards of quality in teacher education encourages leading pedagogical universities of the country to expand academic mobility opportunities, join international initiatives. Accordingly, the question arises about compliance with the qualifications of foreign language teachers, who directly provide the very opportunity for academic mobility. In relation to this term, no one can deny that the country's continued progress in the field of education has a direct impact on various sectors of the country and its future generation. With these remarks, we hope to explain and emphasise that teachers' professional development is an important factor to consider.

The English for Specific Purposes (ESP) curriculum in higher education (HE) should undoubtedly differ from that provided in basic and secondary education because HE serves as the transitional stage before students engage in professional activities. In this sense, the study and creation of the curriculum is a crucial component that directly impacts assessment, pedagogy, and compliance levels. The ESP is a connecting link between teaching a foreign language and subject-specific components, which appear adaptable, particularly in the context of higher education. The seriousness comes from the notion that their employment performance and entrance to universities overseas should be immediately influenced by the abilities taught in the developed curriculum because their future depends on foreign language teachers at universities. Just imagine a situation where you learned something and still have a skill, like hitting a ball into a basketball net, riding a bike or swimming. Just remember how you learned to ride a bike. Most likely at first it was a 4-wheel bike and various equipment, such as helmet and knee pads to help you keep your balance and get less injuries, and over time, the items of equipment became less and less. In the end, the parents, having removed all the devices and additional wheels, simply walked next to you, securing. They walked until you started to ride on your own. I think that from that moment you have not lost this skill and to this day you know how to ride a bicycle. Now imagine what would happen if your parents taught you to ride not on the street, but in the

classroom? First, you need to learn all the parts of the bicycle and their functions. For example, how fast should you press the pedal to move at a certain speed. Or when you have enough leg speed as well as proper body angle you will be able to keep your balance. Then you should collect and study information and write a research paper on the history of the bicycle. Moreover, at the end of all the work done, you will need to write a final exam, and only after successfully passing the exam will you be able to apply the acquired skills. This is similar to how we teach students. We put them in classes and say, this is what we want to teach them and it is important to them, do all exercises. And the students understand that it is not true that we do not really value this kind of learning, so it is not surprising that they are not involved, bored or not interested.

Materials and Methods

It is widely accepted that the recognition of learning outcomes depends on a systematic examination of learners' needs. Learning outcomes were first introduced in the 1960s as a component of a systems approach to curriculum design [1]. The value of truth and accountability has surely had an impact on the creation of needs analysis as a type of educational technology and its diversity into a collection of educational inquiry approaches. The need for needs analysis in educational planning was also emphasised at this time, and it was required that all significant educational goals be specified in terms of measurable outcomes [2]. A phase in the process of setting goals and results is doing a needs analysis. It focuses on the casual conversations that take place between instructors and students. These can be done with one or more students, a bunch of students, or the whole class [3]. Other techniques of doing needs analysis outside group discussions include interviews, questionnaires, ranking activities, oral/written activities, observation, informal teacher consultation, examinations, learning diaries, or portfolios. Finding the needs of the learners is the first stage in a needs analysis. Making learning outcome statements is the next stage. Following that, the fourth stage is determining the knowledge and skills needed to achieve the results. The last step is making lesson planning be taken into consideration.

The ESP course at our university was launched for students of chemical and biological faculties. In the process of teaching, teachers faced a number of problems, such as a lack of understanding of the relevant professional areas, an insufficient number of professionally oriented materials, different backgrounds and levels of students, which leads to different preferences. To overcome the problems listed above, we decided to follow a constructive alignment scheme. A learning plan that is constructively aligned states explicitly what students are expected to learn and how they are to demonstrate their understanding before any learning takes place. Then, learning is planned to include students in learning activities

that increase their likelihood of reaching those outcomes, and assessment tasks are planned to offer a clear assessment of how well those outcomes have been attained [4]. As a result, it is essential to create a framework of the curriculum that effectively manages the interaction between the curriculum's broad aspects. Constructive alignment refers to this programme. Constructive implies that learners are entirely responsible for the knowledge and skills they have learned. It cannot just be transferred from teacher to student right away and it is important to remember that practice is necessary for learners to become proficient in a certain ability. In turn, alignment means that the teacher's role is based on considering what learners need to learn in order to attain learning outcomes and providing a suitable curriculum with enough learning experiences to increase the chances for students to reach desired results [5] (see figure 1).

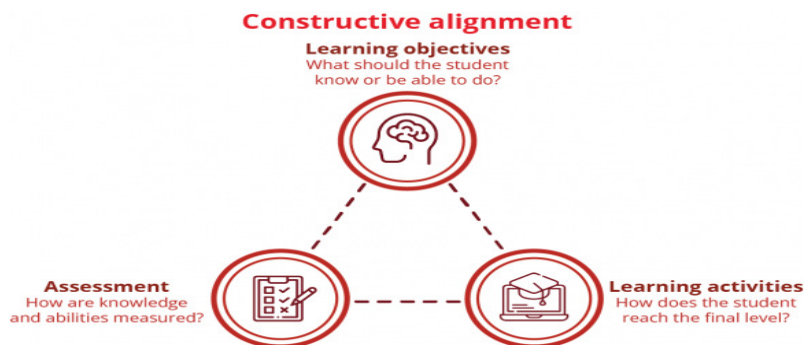


Figure 1 – Constructive Alignment by J.B. Biggs, (2003)

When three things are aligned, they are arranged side by side. However, neither learning nor assessment are tied to teaching and learning activities. It is vital to identify the targeted learning outcomes that would help students attain them in the first place in order to develop an organised, aligned system. The student is expected to demonstrate certain information, skills, or abilities at the end of the course, which are referred to as the usual intended learning outcomes. Another alignment that merits special attention is constructive alignment, which is consistently used at the lesson, course, faculty, and university level. At the university and faculty levels, the educational objectives and graduation competences must be agreed upon. The suggested programme (curriculum) outcomes also align with the objectives of the faculty. The program's outcomes should align with the course's planned learning outcomes (curriculum) [7]. Since

the course's intended learning results must coincide with the intended learning outcomes of the assignment (see figure 2).

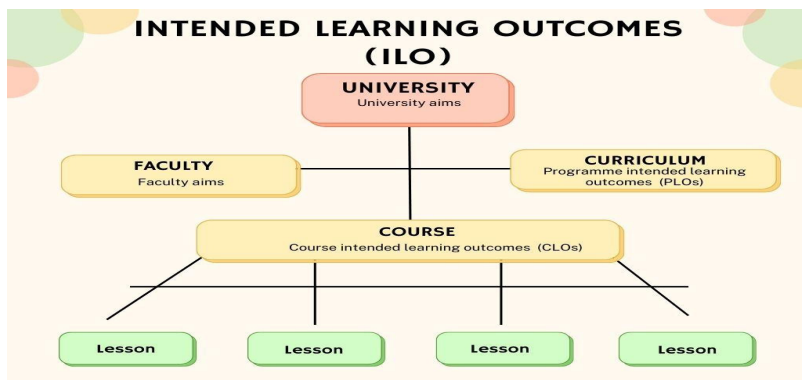


Figure 2 – Hierarchy of Intended Learning Outcomes

As it was previously noted, constructive alignment is an approach to teaching that aims to give students a thorough grasp of the standards and goals being met as well as the best way to reach them. Assessment tasks are constructed to permit accurate assessments as to how well those outcomes have been accomplished, and teaching is subsequently intended to engage students in learning activities that maximise their chances of obtaining those results. Until recently, most universities followed a teacher-oriented teaching approach, when the teacher himself chose the content that should be covered and put traditional-oriented marks without referring to the assessment criterion. In student-centred learning, assessment is necessarily criterion-oriented, making it simple to comprehend what grade was given for each completed assignment [4].

Results and discussion

The initial educational goals and graduation competencies must be agreed upon at the university and faculty levels, according to the illustration in figure 2 - hierarchy of intended learning outcomes. Since this case study was conducted at the university, we choose to start by examining the objectives of the university and faculty.

University aims: The university's core beliefs and objectives are to: 1. Promote innovation and creativity; 2. Foster moral and ethical principles; 3. Foster independence and transferable skills; 4. Strive for excellent achievements; 5. Develop global citizens; 6. Inspire future leaders (sdu.edu.kz) [8].

Faculty aims: In addition, the department of pedagogical mathematics and natural sciences, which represents the mission of the faculty of education and humanities, provides programmes for the training of scientific teachers. This department has always focused on producing top-notch graduates who will become cutting-edge worldwide educators in the twenty-first century. Nearly 80 % of the courses are delivered in English as a result of faculty emphasis on English language learning as it prepares future instructors with medium English instruction (sdu.edu.kz) [9].

Curriculum (Programme) intended learning outcomes: The programme's objectives are to prepare qualified chemistry and biology teachers, equip them with the skills necessary to design the learning environment using instructional technologies, employ a variety of unique teaching methods and techniques in their instruction, and stay current with advancements in their field. In contrast, students learn the abilities needed to be successful in their chosen careers.

ESP Course's intended learning outcomes: The English language programme at SDU is now being developed based on student interests, while taking into account the particulars and involving the interests of the university, faculty, and specialisation. Even though there is still work to be done, it is good to see that SDU's English programme is evolving into a more academic setting than it was in the past.

ESP Lessons' intended learning outcomes: Learning happens when students take an active role in their education, that is they do what they learn, not what the teacher does [10]. For the purpose of choosing learning activities and creating assessment tasks, the cycle of anticipated learning outcomes serves as the foundation. If the learning objectives are focused on higher order learning, the teaching and learning system will be set at a high level of learning. The needs analysis showed that 55% of the chemistry-biology learners wanted to replace or modify the ESP course by incorporating components of academic English. So, it was decided to split the elective English course into two, the ESP and the EAP courses, with the EAP being targeted towards learners who had graduated from specialised schools with English medium instruction or who had a high level of language proficiency. It was a complete freedom to choose the resources that were desired to use as teachers. The information in the textbook was motivated by the needs to assist non-English speakers in mastering the learning methods needed to succeed in academic courses at a university setting, so it was decided to use an off-the-shelf EAP textbook titled "Extended Writing and Research Skills" published by J. McComack and J. Slaght in University of Reading. The fundamental assumption of the materials is that learners must develop the skills and confidence to become self-directed and independent learners as it was required in ILO's curriculum, in

order to successfully conduct research and finish projects, such as lengthy written assignments or oral presentations. Learners must rehearse improving study skills like critical thinking as well as improving study procedures like taking notes and making bibliographies. Learners are required to finish two different kinds of projects throughout the English course. The first assignment is to write a mini research paper. Students are required to select a research topic in their own field of study and work in pairs to complete the project, which is approximately 2,000 words long. They must be able to select their own project title and identify its significance. The next step is to decide on and write understandable, practical learning outcomes (LO), that are listed below:

LO1: 'By the end of the course, students will be able to establish a specific focus and develop own ideas';

LO2: 'By the end of the course, students will be able to find sources of information from books, journals and the Internet';

LO3: By the end of the course, students will be able to select information appropriate to students' specific needs;

LO4: By the end of the course, students will be able to incorporate ideas and information into own text through paraphrasing/summarising, while avoiding plagiarism;

LO5: By the end of the course, students will be able to follow appropriate styles for referencing;

LO6: By the end of the course, students will be able to compare different scholars opinion, discuss what the different literature argues, and link to own purpose of review;

LO7: By the end of the course, students will be able to give presentations and illustrate poster presentations on completed work;

LO8: By the end of the course, students will be able to organise mini seminar sessions;

The course syllabus must then be filled up when the learning outcomes have been determined. The course description, specific information about the times and locations of lessons and office hours, the lecturer's contact information, the course learning outcomes and the skills and competencies that students are expected to acquire, a weekly course schedule, learning and teaching activities, a reading list and resources, assessment procedures and grading criteria, including a description of grades, the course policy, and course values are all included in the syllabus's outline. The EAP course for students studying chemistry and biology was separated into multiple stages. The first phase involves selecting a subject for a lengthy essay, obtaining materials, reading publications on it, and then putting all of the data into a literature review. In the second step, methodological components were

developed using interviews, surveys, and observations before being combined into the main body and conclusion sections. The final step involved submitting the completed written piece to Turnitin.com, an American commercial online service that detects plagiarism in submitted works using both its database and the content of other websites. By highlighting similarities to recent sources, results can help students avoid plagiarism and improve their work. Students had to plan and lead a mini seminar or round table session on a topic of their choice in front of their group members and invited guests. They had to be prepared to give a speech in 15 minutes and get ready for a 5-minute QA session as well. This was in addition to turning in written work through Turnitin. The following actions were taken to organise and conduct a mini conference: Students were divided into three groups at random. The first team was given the responsibility of compiling the titles and abstracts of future papers and editing them into an abstract book (see figure 3 - Sample of Abstract Book in EAP course).

C:/Users/LEGION/Downloads/BOOK%20OF%20ABSTRACTS%20(1).pdf



Figure 3 – Sample of Abstract Book

The objective of the second team was to combine all the presentations / posters in line with the content of the abstract book, introduce each speaker, provide technical support as required, and inform everyone of the remaining time.

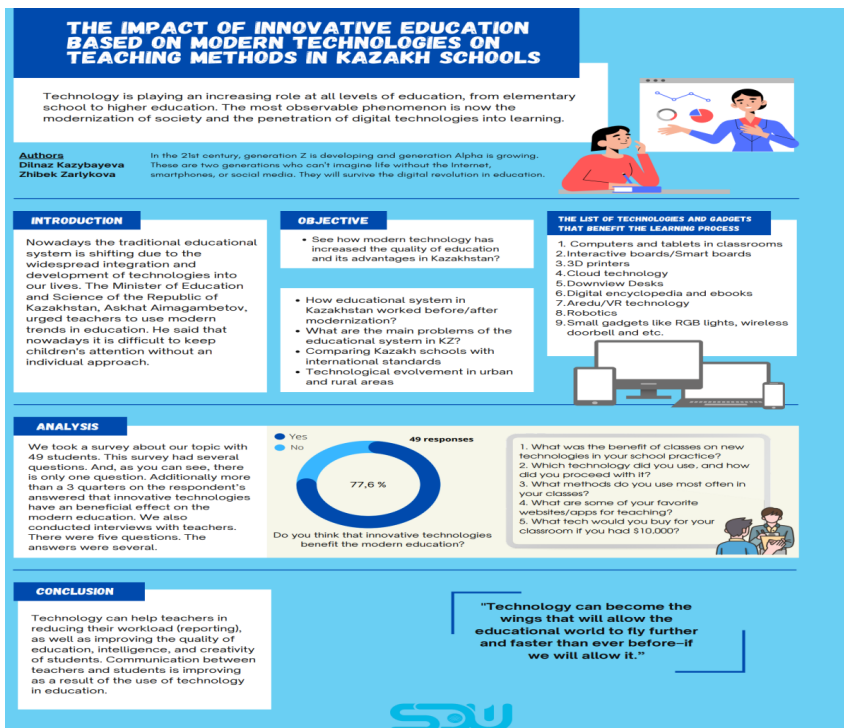


Figure 4 – Sample of poster presentation

The task of the final third team was to design invitation brochures and to extend as many invitations to teachers and students for the lesson-conference/mini-seminar/round table.



Figure 5 –Sample of Invitation to Conference / Mini Seminar Session

Students require support in order to acquire both content and abilities when studying in the current environment. It is important to note that some changes in education are only essential since today's students are part of the 21st century, which is characterised by substantial advancements in media, technology, and information and communication. All Kazakhstani educators should thus think about how the nation's educational system reacts to these changes and evaluate their effectiveness in equipping students with the 21st-century skills they will need to thrive in high institutions, in life, and in the job further.

Conclusion

In conclusion, it can be said that it is undoubtedly simpler to construct a course using off-the-shelf materials because the lecture topics are already prepared; all that has to be done is to make a few tweaks to design lessons in accordance with the intended learning outcomes of the university, faculty, curriculum and course can help students better adapt to the social environment, speak freely and openly in public, express their opinions and points of view, find like-minded people, and achieve significant social position. Together with education, the multifaceted experience accumulated over the centuries on the example of past generations is accepted, and as a result, the path to tomorrow is opened. Thus, the importance of education in human existence cannot be overestimated; this is a kind of crossroads - living in the present, the wisdom of the past is used for future achievements. And when this awareness is reached, teachers, professors, and generally people who want to bring as much value as possible to this area (education), take on

the primary responsibility to complete this work. Educational work that offers information to students who have just entered the field of knowledge, and one of the criteria for successful educational activity is interest in the subject, which only professionally savvy teachers can do. Thus, once again proving that the teacher is the very conductor who, with the help of his professionalism, implements all the values set by the university, faculty, curriculum and course by means of complex forms and methods of teaching, as well as the logical use of a system of technical means and visual aids. As a result, success in this is due to the practical and theoretical abilities of the teacher, as well as a professional approach to work. As a result, the development of the students' basic mental processes, talents, and personal attributes is dependent on the type and quality of communication of the teacher, as well as his professionalism. Will the student be successful in later life, job, initiative, independence, responsible, open to the world and others, is largely determined by his or her teachers. Professional development formation is large, significant, and complicated work, including a huge variety of studies. And while these aspects must inevitably be considered as the primary ones for instructors of this age, it is also worth noting that the learning process is multifaceted, it may be difficult and thorny, but everyone receives a suitable return for their efforts. We continue to learn from childhood through old age, often without recognizing it. And the most crucial thing for a teacher to know in order to do his job properly is how his students view the learning process.

The most important thing in teaching is to receive the fruits of your hard work. Thus, summing up the work done on the course with certificates (see figure 6) of students who made an oral presentation in the international scientific conference titled 'Current Issues in Foreign Language Teaching-2023' at Khoja Akmet Yassawi International Kazakh-Turkish University with a topic that girls developed together from the scratch in the English language course.



Figure 6 – Certificates for oral presentation

The task was certainly not an easy one, as they had to find a point of contact given in their specialties. However, learners did a really good job

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ХИМИЯ - БИОЛОГИЯ ПӘНІНДЕГІ СТУДЕНТТЕР ҮШІН НӘТИЖЕЛЕРГЕ НЕГІЗДЕЛГЕН АҒЫЛШЫН ТІЛІНІҢ ОҚУ БАҒДАРЛАМАСЫН ӘЗІРЛЕУ

Жоғары білім берудегі мақсатты оқыту барысында нәтижеге негізделген оқу жоспарын жобалау теориялық негізі ретінде де, дағдыларды дамыту құралы ретінде де қызмет етеді. Бұл мақалада жоғарғы оқу орындарының химия және биология мамандықтары бойынша оқытын студенттер үшін арнайы мақсаттағы ағылшын тілінің оқу бағдарламасының тиімді негізін жасау мақсатында университеттің, факультеттің, оқу жоспарының, курстың және сабақтардың конструктивті сәйкестендіруін сипаттайды. Құрылымдық термині студенттердің алған ақпараттары мен қабілеттеріне толық жасау беретінін көрсетеді. Өз кезегінде мұғалімнің жасау керушілігі оқушылардың оқу нәтижелеріне қол жеткізу үшін нені үйренуі керектігін есепке алуға негізделген. Жеткілікті оқу мүмкіндіктері бар сәйкес оқу бағдарламасы студенттердің қалаған нәтижелерге жету ықтималдығын арттыра алады. Осылайша, мақалада университет, факультет, оқу жоспары және курс белгілеген барлық құндылықтарды оқытудың күрделі нысандары мен әдістері арқылы жүзеге асыру сияқты осы келісілген білім беру процесін басқаруға тікелей жасауы

оқытушының ролі, сондай-ақ техникалық құралдар мен көрнекі құралдар жүйесін логикалық пайдалану.

Кілтті сөздер: мақсатты оқыту нәтижелері, құрылымдық сәйкестік, оқу жоспары, арнайы мақсаттарға арналған ағылшын тілі, химия, биология.

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РАЗРАБОТКА УЧЕБНОЙ ПРОГРАММЫ ПО АНГЛИЙСКОМУ ЯЗЫКУ ДЛЯ СТУДЕНТОВ ХИМИИ - БИОЛОГИИ, ОРИЕНТИРУЕМОЙ НА РЕЗУЛЬТАТЫ

Структура обучения ориентированная на результаты в высшем образовании служит как теоретической основой для разработки учебной программы, так и инструментом развития навыков. В этой статье описывается конструктивное согласование университета, факультета, учебной программы, курса и уроков с целью создания эффективной основы для учебной программы английского языка для специальных целей (ESP) для студентов высших учебных заведений, специализирующихся в области химии и биологии. Термин «конструктивный» указывает на то, что учащиеся полностью несут ответственность за информацию и способности, которые они приобрели. В свою очередь, ответственность учителя основывается на учете того, что учащиеся должны усвоить, чтобы достичь результатов обучения. Подходящая учебная программа с достаточными возможностями для обучения может повысить вероятность того, что учащиеся достигнут желаемых результатов. Таким образом, в статье показана роль преподавателя, который несет непосредственную ответственность за руководство этим скоординированным образовательным процессом, как за реализацию всех ценностей, определенных вузом, факультетом, учебным планом, курсом через усложненные формы и приемы обучения, а также

логическое использование системы технических средств и наглядных пособий.

Ключевые слова: предполагаемые результаты обучения, конструктивное согласование, учебная программа, английский язык для специальных целей, химия, биология

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