INTERDISCIPLINARY APPROACH TO LANGUAGE STUDIES IN TRAINING MASTERS AT UNIVERSITIES IN RUSSIA

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Abstract

The need to create an effective interdisciplinary university environment seems to be urgent in Russia today due to the global and domestic challenges facing the nation. Rapid changes in all areas of life determine high social demand for professional preparedness of future specialists and their willingness to meet the needs of the day. The ability to establish cognitive links between diverse concepts and ideas, as well as disposition to create meaningful connections between different subject areas, is becoming very useful and beneficial. However, there is a contradiction between the need to implement this very popular in the West interdisciplinary approach into the educational process at university and the low awareness of the academic community of Russia about all pros and cons of this pedagogical innovation.

The prime feature of this approach in education is its power to facilitate learning outcomes of university students through building links and conceptual connections between various ideas and facts across different disciplines. Learning and teaching in the interdisciplinary paradigm allows fast and efficient transition of skills and knowledge gained in one discipline to another. In addition, it enhances learning and hands-on experiences, develops collaboration and cooperation, encourages students' critical thinking and problem solving skills, thereby preparing them for life and professional career. "An interdisciplinary approach" is the basic concept of our research. We can define it as a core of an integrative university curriculum, which generates understanding of multiple topics related to various disciplines and areas of life. It normally emphasizes process and meaning rather than product or content by presenting theories, methodologies and perspectives from two or more disciplines.

The aim of this work is to identify and analyze most common features of an interdisciplinary approach, its adaptability, timeliness and effectiveness for universities in Russia. For these purposes, during the empirical stage of our research a special interdisciplinary e-course "Translation of Natural Science Texts" for Masters of Kazan University, majoring in Linguistics, has been created and implemented. The course is in English and has a modular architecture. Each module has a recognizable structure and consists of texts on biology, chemistry, ecology or medicine. It is supplemented by video lectures, thematic tests, project assignments, news boards, forums and chats. The course is deployed on the university e-platform, being quite popular among the students.

The methodology of the work is based on a comparative analysis of such theories as behaviorism, constructivism and connectivism as well as on communicative, collaborative and competence-based approaches. The results of the work may be of interest to teachers, educators and e-learners who support innovations and feel free to create, collaborate, communicate both online and offline.

Keywords: university, students, masters, interdisciplinary, approach, training, language studies.

1 INTRODUCTION

Interdisciplinary approach is an approach to curriculum integration that generates an understanding of themes and ideas that cut across disciplines and of the connections between different disciplines and their relationship to the real world. It normally emphasizes process and meaning rather than product and content by combining contents, theories, methodologies and perspectives from two or more disciplines [1].

This approach allows the student to learn by making connections between ideas and concepts across different disciplinary boundaries. Students learning in this way are able to apply the knowledge gained in one discipline to another different discipline as a way to deepen the learning experience [2]. The most effective approach to interdisciplinary study enables students to build their own interdisciplinary pathway by choosing courses which make sense to them. For example, it is not too difficult to find a theme which

crosses over disciplinary boundaries in literature, art and history or science and mathematics. Studying topics thematically is one way to bring ideas together resulting in more meaningful learning. This can occur by allowing students to choose their own subjects and their learning is deepened when they reflect on the connections between what they are learning in different disciplines.

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2   METHODOLOGY

The methodology of the work is based on a comparative analysis of such theories as behaviorism (J.B. Watson, B.F. Skinner, E.L. Thorndike, I. Pavlov, etc) [3, 7], constructivism (L.S. Vygotsky, J. Dewey, J.S. Bruner, B. Bloom, etc) [4], and connectivism (G. Siemens, S. Downes, R. Kop) [5, 6] as well as on communicative, collaborative and competence-based approaches by Western and Russian scholars [5, 6, 7, 8]. Connectivism is a kind of learning theory that was created by George Siemens. It can also be understood as educational theory or view or global strategy. Connectivism was a core principle used for designing the first MOOCs (unlike the "modern" versions that come out of elite universities and rather represent in our opinion a propaganda purpose). G. Siemens proposes connectivism as a learning theory for the digital age, a successor to behaviorism, cognitivism and constructivism [6]. Among the main principles of connectivism he names the following:

1   Learning and knowledge rests in diversity of opinions.
2   Learning is a process of connecting specialized nodes or information sources.
3   Learning may reside in non-human appliances.
4   Capacity to know more is more critical than what is currently known [7].

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3   RESULTS

The main result of the study is the design and implementation of the course "Translation of Natural Science Texts", intended for the masters of Kazan University, majoring in Linguistics: Translation Theory, Intercultural and Interlanguage Communication.

The open educational resource "Translation of Natural Science Texts" is intended to train future translators to work with authentic texts on natural sciences, expand their lexical vocabulary in the field of chemistry, biology, physics, ecology and medicine. It is also aimed to apply the studied translation techniques and mastered vocabulary in practical situations.

The course deals with the problem of scientific and technical texts' translation from English into Russian and vice versa. The introductory part of the course contains the program of the discipline, concise course notes, the competences which are necessary to master the course, the guidelines for students and the guidelines for teachers. There is also a list of the main bibliography, a list of end-of-course questions, final tests, the glossary and the news forum. Every module consists of the guidelines for students, pre-reading task, the glossary, the texts for reading and translation, after-reading tasks, final tasks. It is supplemented by video lectures, thematic tests, project assignments, news boards, forums and chats.

The first part concerns the theoretical aspects of special texts' translation. Its aim is to give information about the basic peculiarities of scientific and technical texts' language and their translation, basic concepts of terminological studies, translator's false friends in terminology and recommended terminological dictionaries [9].

After studying the first part, masters are supposed to discuss and answer the following theoretical questions:

1. What are the main goals of scientific texts' translation?
2. What specific requirements is the translator expected to meet?
3. What problems is the theory of technical translation concerned with?
4. What are the main stylistic characteristics of scientific literature?
5. What grammatical peculiarities does the English scientific prose have?
6. What grammatical and lexical features are typical of the Russian scientific style?
7. What are the controversial problems connected with terminology?
8. What are the two major types of translator's false friends?

The second part consists of 7 units. The texts provided are meant for the student's self-training in translation of scientific and technical texts. The materials are taken from original special literature, and their sources are indicated. Each text is followed by the set of exercises and tasks on terminological words and word combinations used in different spheres of communication.

Let us consider Module 1 "Physics" as an example. The masters have to read and translate the text "The steamiest summer day would be no sweat for this potential superconductor" [10]. After reading, they are to answer the following questions on the text:

1. What is a superconductor?
2. What's new about this hydrogen-rich compound?
3. What temperature do superconductors usually need to work?
4. What are scientists concerned about?
5. What does this newly predicted superconductor consist of?
6. Is it difficult to use it?
7. Do scientists use only the old types of superconductors?
8. What did Russell Hemley's team do?
9. What temperature could be record-breaking for a superconductor use?
10. Is this discovery important?

Then, the students are supposed to compile a glossary of physical terms such as the given bellow:

1. Superconductor - a material that can conduct electricity or transport electrons from one atom to another with no resistance.
2. To be no sweat – informal, used to convey that something is not difficult or problematic.
3. To stand in stark contrast to - to be very different from something else.

4 Hydrogen - a chemical element with the symbol H and atomic number 1. It has a standard atomic weight of 1.008, meaning it is the lightest element in the periodic table.

5 Magnesium - a chemical element with the symbol Mg and atomic number 12.

6 Lithium - a chemical element with the symbol Li and atomic number 3. It is a soft, silvery-white alkali metal.

7 Pressurize - to raise the internal atmospheric pressure to the required or desired level.

8 Lanthanum - a chemical element with the symbol La and atomic number 57. It is a soft, ductile, silvery-white metal that tarnishes slowly when exposed to air and is soft enough to be cut with a knife.

9 Purported - appearing or stated to be true, though not necessarily so; alleged.

10 Resistance - the opposition that a substance offers to the flow of electric current.

The Guidelines for students to Module 1 include:

1 Literature on the topic.

2 Pre-Reading Task: Answer the questions.

3 Glossary: Study the words and phrases.

4 Text 1: Read and translate the text.

5 After-Reading task №1: Answer the questions.

6 After-Reading task №2 "Matching exercise": Match the items on the right to the items on the left.

7 After-Reading task №3 "Gap-fill exercise": Fill in all the gaps, then press "Check" to check your answers. Use the "Hint" button to get a free letter if an answer is giving you trouble. You can also click the "[?]" button to get a clue. Note that you will lose points if you ask for hints or clues!

8 After-Reading task №4 "Mixed-up sentence exercise": Put the parts in order to form a sentence. When you think your answer is correct, click on "Check" to check your answer. If you get stuck, click on "Hint" to find out the next correct part.

9 Text 2: read the text.

10 Task on Text 2: write a summary of the text.

11 Final Task: compile a Glossary of scientific and technical terminology. It should contain 30 terminological units used in the studied field of science.

12 Watching Video: Watch the film.

13 Watching Video Task: do the task.

14 Forum: Discuss the topics with your groupmates.

As we have seen, the structure of the course is quite easy to understand. Following the instructions, the masters can implement all the tasks individually in the class or at home and send them to the teacher or tutor to check and evaluate.

The masters have been successfully studying the course for 4 months. Among the advantages of the course, they highlighted such benefits as easy access to learning, multidisciplinary character of the educational content, ability to self-modify course materials and habitual Internet environment [11, 12].

4 DISCUSSIONS

Speaking about interdisciplinary approach to education, we should say some words about constructivism, which is a theory about how people learn. This theory suggests that people create their own understanding and knowledge of the world through experiences and reflection on those experiences. It is necessary to suggest that when students encounter something new, they have to integrate it with previous ideas and experiences by connecting the new knowledge to something already known. It may mean the students are studying something completely new and different. Sometimes it will result in the student rejecting the ideas completely. Above all, the theory assumes that we are active creators of our own knowledge requiring students to ask questions, explore, and assess what is known or learned. Students engaging in interdisciplinary study are therefore creating their own understanding and knowledge of the world through their study choices [2].

So, what are the advantages of interdisciplinary approach? First, making connections between different concepts is very important in interdisciplinary study. Second, students are highly motivated as they have a vested interest in pursuing topics that are interesting to them. As a result, the content is often rooted in life experiences, giving an authentic purpose for the learning and connecting it to a real world context. Consequently, the learning becomes meaningful, purposeful and deeper resulting in learning experiences that stay with the student for a lifetime. Third, students cover topics in more depth because they are considering the many and varied perspectives from which a topic can be explored. Forth, critical thinking skills are used and developed as students look across disciplinary boundaries to consider other viewpoints and also begin to compare and contrast concepts across subject areas. Besides, transferable skills of critical thinking, synthesis and research are developed and are applicable to future learning experiences. Moreover, interdisciplinary knowledge and application of different disciplines can lead to greater creativity.

Thus, interdisciplinary approach allows for synthesis of ideas from many disciplines. At the same time, it addresses students' individual differences and helps to develop important, transferable skills. These skills, such as critical thinking, communication and analysis are important and continually developing at all stages of life. Educational systems are serving students best if they enable and encourage students to build their own interdisciplinary pathway. This approach is sure to foster a love of learning, inspire enthusiasm and address learning differences for students [13, 14, 15].

5   CONCLUSION AND RECOMMENDATIONS

To sum up, we have identified and analyzed the most common features of an interdisciplinary approach, its adaptability, timeliness and effectiveness for universities in Russia. For these purposes, during the empirical stage of our research a special interdisciplinary e-course "Translation of Natural Science Texts" for Masters of Kazan University, majoring in Linguistics, has been designed.

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ACKNOLEDGMENTS

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