

**TEACHING ENGLISH FOR SPECIFIC PURPOSES THROUGH A LEARNER-CENTERED
LENS: FOCUS ON CHEMISTRY STUDENTS**

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Abstract: *This study investigates the effectiveness of a learner-centered approach in teaching English for Specific Purposes (ESP) to chemistry students at the Tashkent Chemistry Technological Institute. The research involved two groups of first-year students who were instructed using specially selected chemistry-related texts and activities designed to develop vocabulary and reading comprehension. A mixed-method research design was employed, incorporating observations, questionnaires, and pre/post-testing. Results indicate that learners performed significantly better after the implementation of learner-centered strategies. The findings suggest that integrating authentic materials and involving students in the decision-making process enhances motivation, autonomy, and subject-specific language acquisition.*

Keywords: *ESP, learner-centered approach, chemistry, vocabulary development, motivation, authentic materials, language acquisition*

INTRODUCTION

English for Specific Purposes (ESP) has become a vital component in the curriculum of non-linguistic disciplines, especially in science and technology fields such as chemistry. Unlike general English, ESP focuses on the immediate and practical language needs of learners within a specific professional or academic domain. One of the key challenges in teaching ESP is aligning language instruction with learners' academic background, interests, and future career demands.

Traditional teacher-centered methods often fall short in engaging students and addressing their specific needs. In contrast, the learner-centered approach shifts the focus from the teacher to the learner, emphasizing individual goals, preferences, and active participation in the learning process. This approach encourages autonomy, motivation, and contextual understanding, all of which are crucial for effective esp instruction.

This paper explores the application of a learner-centered methodology in teaching english terminology related to chemistry. By designing a structured experimental study with two groups of students, this research aims to demonstrate how such an approach can improve learners' engagement, comprehension, and vocabulary acquisition.

LITERATURE REVIEW

A number of methodologies must be used in order to define the learners' needs for launching ESP academic programs. It is required to collect the sources of objectives, instructional institutions, evaluation methodologies, and needs analysis tools while developing a conceptual framework.

The major focus should also be on ESP students' communicative needs, which are based on personal information, purpose, setting, dialects, anticipated communicative occurrences, and communication channels.⁸

Personal information includes an individual's culturally significant background, such as language, nationality, and so on. The profile described above provides a foundation for studying the relationship between social constructs and language development. What's more, it positions the student in the center of the dimensions described.

The needs and demands of a learner's surroundings are determined by social construction in a specific context. To determine the knowledge and skills gap, ESP teachers should know what degree of background information learners have gained thus far. According to goal-oriented frameworks for evaluating learners' needs, particular attention should be paid to distinguishing between situational, present, and educational goals.

Hutchinson and Waters state that "motivation... is a complex and highly individual matter".⁹ A teacher should approach each learner individually in this regard to determine what motivational elements spark their progress.

Teachers cannot be viewed as autonomously behaving actors whose main purpose is to deliver content and explain essential concepts in a learner-centered framework. Rather, strong collaboration between teachers and learners is required to include the latter in decision-making about text selection, methodological tools, and evaluating approaches.

"The role of teachers in this new learning experience is to help students develop the necessary skills for becoming independent learners."¹⁰ Teachers should function as planners, helpers, and counsellors at various stages of information acquisition during the course of learning.

Teachers must be able to generate the corresponding resources to forecast students' wants and concerns and progress their ESP learning skills before structuring the course and functioning as communication facilitators.

At this point, a learner-centered technique assumes application to a diverse range of materials, such as audio and video materials, texts, readings, and presentations, so that

⁸ Richards, J. C., & Rodgers, T. S. (2004). *Approaches and methods in language teaching*. Cambridge, UK: Cambridge University Press

⁹ Hutchinson, T. and A. Waters. 1980b. *Communication in the technical classroom: you just shove this little chappie in here like that*. In *Projects in Materials Design. ELT Documents Special*. London: ETIC Publications, The British Council.

¹⁰ Kucuroglu-Tirkes, C. (2011) *The Role of a Learner-Centered Approach in Language Teaching on the Development of Learner Autonomy: A Model Course Design*. *Dogus University*. 193-200

each student can find the best way to learn a language and gain the necessary skills and experiences to meet personal goals.¹¹

Approaching material selection more carefully will enable teachers to conduct a comprehensive needs analysis and describe learning behavior patterns in order to make the necessary changes to an academic curriculum in the future. To frame the course design, for example, teachers can create a questionnaire with questions on style, purpose, needs, and presentation of the course preferences.

The questionnaire results will assist teachers in identifying the most relevant methodological tools to use during ESP investigations. From this vantage point, teachers are defined as change agents who integrate many strategies to meet the requirements of a learner-centered framework.

Another essential criteria that teachers should consider when implementing a learner-centered approach is the use of genuine materials. According to Baghban, motivation and authenticity are inextricably linked. As a result, authentic materials “are more interesting and stimulating, and they intend to communicate a message”.¹²

Authentic materials provide learners with skills for dealing with real-life situations and gaining motivation in ESP learning. Because of the language complexity of the learners, selecting authentic resources is a demanding endeavor.

Overall, the usage of authentic materials provides good resources for language acquisition in a real-world setting. Because they are part of a real-world setting, authentic materials help learners bridge the gap between their general language background and their specialized language needs. As a result, in a professional setting, it is possible to simulate the real world in class by introducing authentic materials.

As previously discussed, a learner-centered approach focuses on how rather than what learners do to acquire information and skills. There are several ideas that govern ESP education at this time. Learners should participate in a variety of learning activities to make decisions using a learner-centered methodology.

Teachers’ roles are limited to learning which strategies and tools pupils utilize to learn the materials. The first criterion for involving the learner in a collaborative process should be strategic management. Next, ESP teaching within a learner-centered framework encourages and motivates students to gain information because the model fully fulfills their professional goals.

It is critical for a teacher to acknowledge individual variances when giving real material. Working together results in an active exchange of experience and preferences.

¹¹ Kwun-hung, L., & Sinn, M. (2010). Teacher as the Change Agent: Implementation and Impact of a Learner-centered Approach in Teaching Argumentative Essays to Senior Secondary ESL Learners in Hong Kong. *International Journal Of Learning*, 17(4), 595-612

¹² Baghban, Z. (2011). Authentic Materials’ Implication for ESP Settings. *Sino-US English Teaching*, 8(7), 437-442

Because communication broadens pupils' comprehension of the external environment, teachers can obtain considerably higher results in this method.

The latter has an impact on the learning process, such as the selection of learning pedagogies, classroom activities, and materials. For example, because some students prefer to participate actively in discussions rather than passively, professors should approach students from several perspectives.

Technology should be used in a learner-centered approach to ESP since computers "help motivate learners and increase critical thinking".¹³ As a result, teachers should feel free to employ software applications for activities such as writing, speaking, reading, and listening.

Students, for example, can use multimedia software to make sound files in order to improve communication with professors. An overview of various internet resources is also essential because it contributes to collaborative work between educators and ESP students.

Regarding the aforementioned characteristics of a learner-centered approach to teaching, there are a number of adjustments and affects that this strategy has. In general, concerns like as power balance, content decision-making, accountability for learning, goals and processes, and the role of teachers.

Because the roles and demands have already been discussed, it is important to emphasize the significance of power relocation and specify how effective this tendency is in boosting ESP learner competency.

Authority allocation can help students "distinguish between an unethical transfer of power and an appropriate sharing of decision-making process".¹⁴ Sharing power between professors and students allows students to become more self-sufficient and take on greater responsibilities for their professional development.

As a result, ESP students may be less concerned with teachers' instructions and more interested with personal incentives to learn foreign languages. The learning process will become much more fruitful if they comprehend the necessity of studying.

METHOD

The subjects of the current research were the first year students of the Tashkent Chemistry Technological Institute. As a subject of the study, there were chosen two groups randomly as experimental ones. Both groups consisted of 16 students in total 32 students. These groups observed in their writing lessons and the researcher conducted his study also in writing classes. The subjects ranged in age between 18 and 21. The gender of the subject was mostly male 30 students and 2 female students. Native language of all the students is Uzbek. As their levels of the English language knowledge were almost the same A2 level, it was not difficult to choose the material for them.

¹³ Bista, K. (2011). Learning-Centered Community College and English as a Second Language Programme. *3L: Southeast Asian Journal Of English Language Studies*, 17(1), 113-121

¹⁴ Weimer, M. (2002). *Learner-Centered Teaching: Five Key Changes to Practice*. US: John Wiley & Sons.

“Chemistry 11-14” by Iain Brand and Richard Grime consists of six units. All units are divided into five or six lessons. Each unit is about one main problem belongs to chemistry. In each lesson there are some text related to the topic. At the end of them they contains summary and some questions in order to know how to understand the lesson.

These materials are specially chosen for developing learners’ reading and vocabulary skills through teaching chemistry terms to ESP learners. In order to collect data and to work with the subjects chosen for the current research study, the researcher used the following research tools. The research was performed in following phases:

- *Observation* is carried out to acquire how to teach methods of chemistry terms are being used to teach English to ESP learners. Investigator will be able to get informed what are the characteristics of the chosen subjects and their background knowledge.

- *Pre, while and post tasks* on the base of reading material, in the way of choosing the correct answers, guessing the title, describing pictures, filling in the gaps and giving opinions to each other’s participations;

- *Questionnaire* is held to identify the role of teaching chemistry terms to ESP learners

- *Experiment* is held to practice the teaching methods of lexis to ESP learners and illustrate the effectiveness of them.

Besides, the researcher created the pre-tests in a form of a questionnaire in order to identify learners’ needs and preferences, clarify their background knowledge of chemistry. Afterwards, the researcher designed post-tests again in a form of questionnaire to ascertain the general effectiveness of the conducted lessons.

Technical aids such as overhead projector and laptop were used as the equipment in the classes. The projector is counted one of the most effective tools in teaching English especially young learners. It makes teachers work easier and it serves for taking the display of a computer screen and project a large version of it a flat surface as a big high quality screen. Commonly teachers use it for demonstrating videos, photos, etc.

Computer was used during the study for preparing teaching materials, such as, lesson plans and handouts. Moreover, writing tools, such as, whiteboard, some chalk, notebooks, pens, pencils, erasers and posters were needed.

RESULTS AND DISCUSSION

This step was taken to measure an equality and difference of both groups A and B in order to decide how the researcher achieved his aim. Below *Table 1* demonstrates the numbers of answers of Group A and Group B, by these scores we compare students’ performance.

Table 1

	Questions	Number of answers
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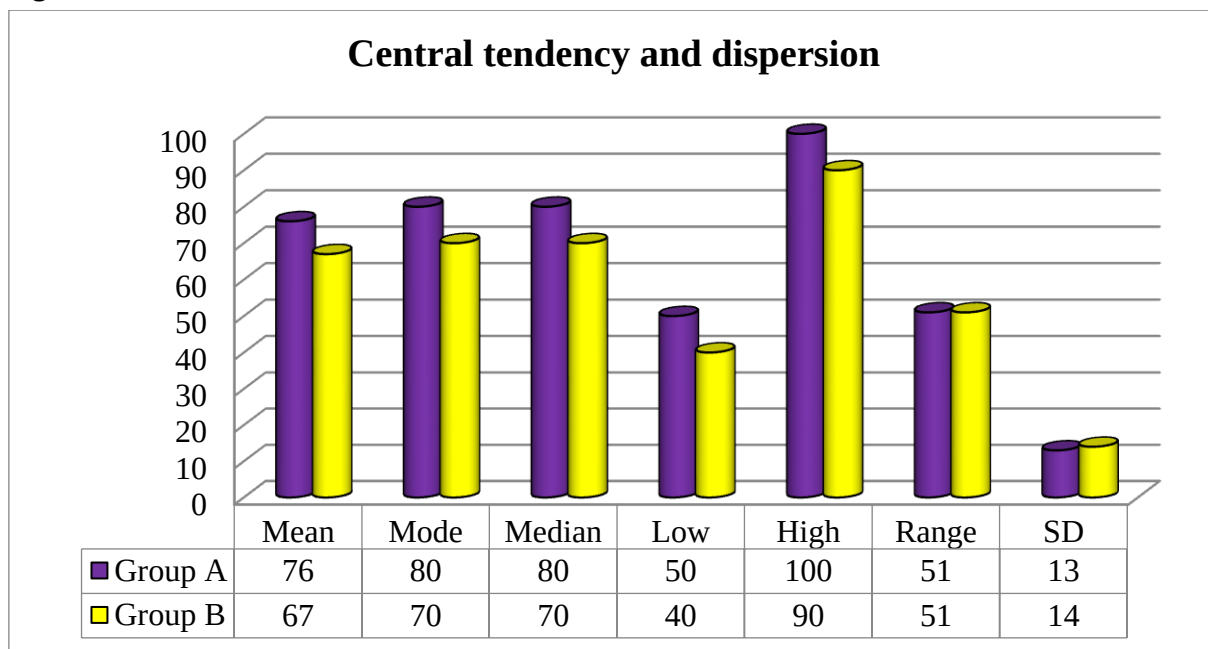
		Group A	Group B
	What kind of lesson can be useful in learning terminology? c) Teacher-centred d) Learner-centred	5 1 1	3 1 3
As we see, the subjects were already the second year students and they are ready as autonomous learners. That's why, 81% of them preferred learner centred learning.			
	How many chemical elements are there in Mendeleyev's table? d) 109 e) 112 f) 118	2 1 1 3	2 2 1 2
The majority of the subjects (78%) knew the amount of the chemical terms in Mendeleyev's table although some of them has added to that table.			
	What kind of teacher can provide the most successful lesson? c) Liberal d) Autocrat	7 9	1 0 6
The result showed that the most of students (56%) in Group A favoured the autocrat teachers. On the contrary, the majority students (63%) in Group B preferred the liberal teacher.			
	What kind of way can be more effective for improving vocabulary? d) Learning the words by heart e) Using the words in context f) Translating the text.	2 7 7	3 6 7
As a result, using the words in context (41%) and translating the text (44%) can be more capable of developing vocabulary.			

	What does the term “atom” mean?		
	d) indivisible	8	1
	e) the smallest	5	0
	f) a bomb	3	3
			3
The answer results showed that more than half subjects had known enough knowledge about some basic terms.			
	Choose the types of corrosion.		
	h) Electroplating	5	5
	i)Galvanising	5	4
	j)Rusting	6	7
The answers showed that the one in thirds students knew the types of corrosion even they had information what the corrosion was itself. It demonstrated that they had some problems with ESP.			
	How many gases does the air include?		
	k) Two	1	3
	l)Three	1	1
	m) Four	0	1
	n) Five	3	1
		2	1
	What kind of forms do the substances have?		
	d) Solids, liquids and gases	1	1
	e) Liquids and gases	2	1
	f) Gases and solids	3	2
		1	3
About 69 percent of students know the chemistry well. They have an interest to learn English as a foreign language.			

	Which statement is true?		
	d) The atoms or molecules in a solid are held closely together by strong forces of attraction. The particles cannot move over each other but vibrate back and forth.	5	6
	e) There are only weaker forces of attraction between the atoms or molecules of a gas. The particles are slightly further apart and can move around each other.	5	5
	f) There are only weaker forces of attraction between the atoms or molecules in a liquid. The particles are very far apart and can move about all directions.	6	5
The one in third students can find the right answers although have enough knowledge from chemistry because of having some problems in English.			

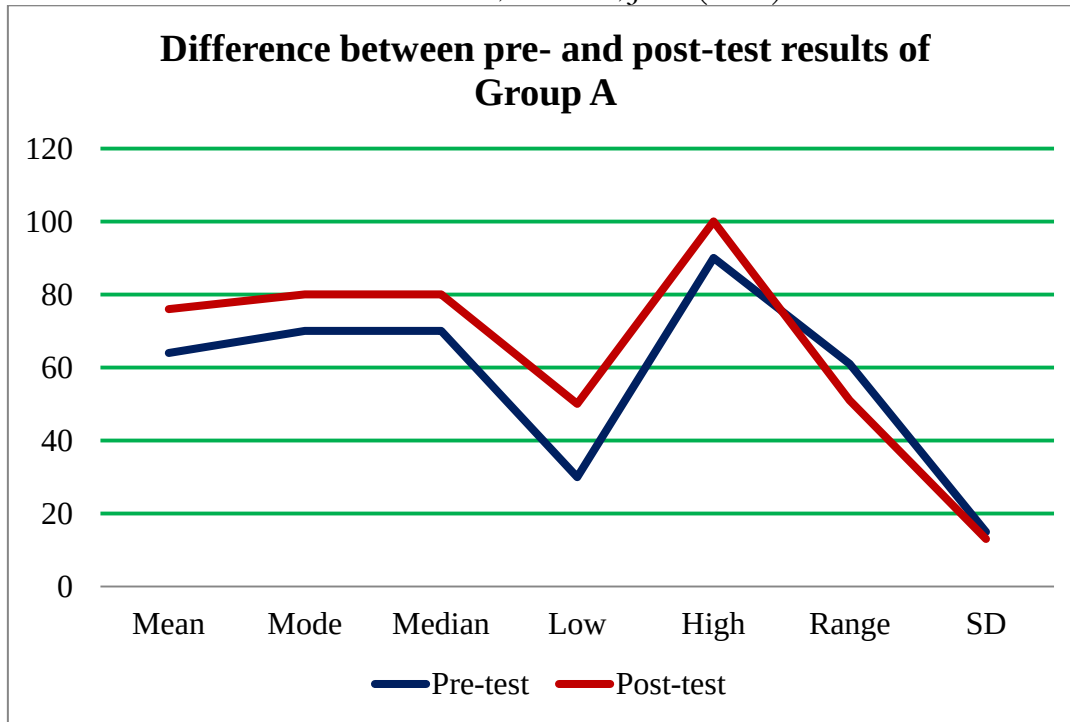
The final result from the post-tests of both Groups A and B can be *Figure1* which comprises all the valuable data of the research. It includes the data of central tendency and dispersion.

Figure 1



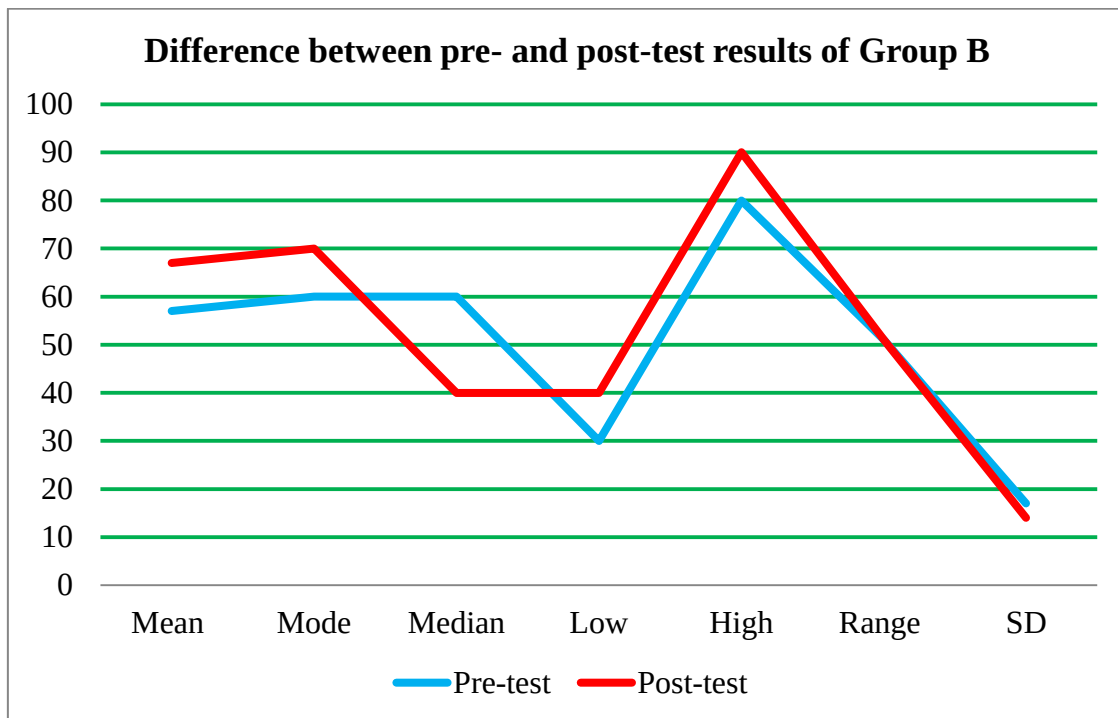
To put all the pre-test and post-test results into a nutshell, the researcher demonstrates below the difference of the results in both Groups A and B. You can see that the post-test results are more productive than pre-test.

Figure 2



The post-test results of these two groups are much common with little difference in standard deviation of Group A and Group B. *Figure 2* shows the results of Group A and *Figure 3* demonstrates the results of Group B.

Figure 3



The researcher used several types of activities, “calculating games”, matching, true/false activity and other activities. While conducting the lessons the investigator found out that the new or unusual activities could help to improve subjects’ interest in teaching. For example, “calculating game” and “the Pyramid game” were more productive and the students were interested in them the most.

The researcher discovered that selecting the suitable method could motivate the learners to study chemistry terms. For this, the investigator used some famous methods, such as, learner-centred method. I understood that the key of the successful lesson is not only to know the method itself, but also to know when and how to use it.

The other thing which could provide with prospering lesson is to choose appropriate materials. The research showed that using only one material could be boring for the learners. So, the researcher used the materials from some scientific books, authentic material and some Internet sources.

CONCLUSION

The findings of this study support the effectiveness of a learner-centered approach in ESP instruction. Students exposed to this methodology demonstrated improved vocabulary acquisition, higher motivation, and increased participation in class activities. The integration of authentic materials, such as scientific texts and real-world tasks, contributed to learners' contextual understanding and engagement.

Furthermore, the study confirmed that active involvement in lesson planning and task selection empowers students, fostering autonomy and responsibility for their learning. The post-test results and questionnaire feedback highlight that a learner-centered environment not only enhances academic outcomes but also prepares learners for future professional communication in their field.

In conclusion, this research emphasizes the importance of rethinking traditional ESP teaching methods and adopting more dynamic, learner-driven strategies. Such approaches are particularly relevant for technical students who need both linguistic competence and field-specific knowledge to succeed in their academic and professional careers.

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