

The necessity of Pareto principle in environmental studies

Bakhtiyor Mengliyev^{1*}, *Guli Toirova*², *Javlon Ibragimov*³, and *Munira Mengliyeva*⁴

¹University of Tashkent for Applied Sciences, Tashkent, Uzbekistan

²Bukhara State University, Bukhara city, M.Ikbol 11, 200100, Uzbekistan

³University of Information Technology and Management, Tashkent, Uzbekistan

⁴Tashkent State University of Uzbek language and literature- Tashkent Uzbekistan

Abstract: The article emphasizes the significance of applying the Pareto principle in education, particularly in distributing knowledge based on its importance. Education fundamentally involves teaching, encompassing the instructor's activities, influencing students' learning and studying processes, and the students' active participation in the learning process. Efficient organization of the educational process facilitates achieving the desired objectives. Consequently, resource allocation in education is of utmost importance. This article demonstrates how Pareto's law can enhance the quality of language education, specifically mother tongue education. It highlights the Pareto principle as a tool for achieving efficiency in education management, similar to its applications in economics, science, business, time management, and other fields. Additionally, in lexicography, Pareto's law is employed to categorize language units intended for inclusion in a dictionary based on their relative importance in speech composition. **Keywords:** Pareto's principle, educational process, optimization of educational system, 80/20 law, speech efficiency, effective resource utilization, educational policy enhancement, Pareto's law.

1 Introduction

The Pareto principle, also referred to as the 80/20 rule, has important educational ramifications, especially when it comes to the importance-based distribution of knowledge. About 80% of the material is retained by students after participating in 20% of the educational process's activities. The principle suggests that about 20% of the topics and fundamental concepts within any academic subject encompass 80% of the total knowledge available in that field. Consequently, concentrating on comprehension of this 20% concepts facilitates the fundamental knowledge acquisition in the subject being studied. Since education is the main tool used to transfer knowledge, skills, and abilities and prepare people for life and the work, effective organization has always been important. Education fundamentally involves the teaching process, which encompasses the instructor's activities and their influence on

* Corresponding author: rustambek852107@gmail.com

students' learning endeavors. Additionally, the learning process, representing the student's active engagement, plays a vital role. Structuring the educational process efficiently enhances the likelihood of achieving the desired objectives [1-10].

The efficient allocation of resources in the educational process is essential. Research suggests that approximately 20% of resources, such as textbooks, tools, and software, can contribute to nearly 80% of the overall efficiency. While textbooks cannot encompass all subject matter, identifying and focusing on the most crucial 20% of information that facilitates the acquisition of 80% of knowledge must significantly enhance educational outcomes. Education plays a pivotal role in addressing societal challenges, establishing the material and technical foundations of society, and shaping individual relationships. Consequently, adopting an effective approach to education is crucial. It is necessary to establish specific objectives for an effective educational process. What are our expectations for pupils and students in the last school grade and beyond? What competencies and abilities should they have acquired by the conclusion of each class, course, quarter, or semester? The answers to these questions should guide the organization of the educational process. In essence, we have to discern between information that is vital and information that is not vital in any particular subject and focus our attention on the 20 percent of knowledge that produces 80 percent of the intended results, which develops students into competent professionals in their professions [11-29].

2 Materials and Methods

The application of Pareto's law in education can significantly enhance the effectiveness of the educational process, elevate its quality, and drive improved outcomes for educational institutions. Specifically, it enables:

1. Optimization of the educational process
2. Prioritization of tasks
3. Efficient utilization of resources
4. Refinement of educational policies

3 Discussions

Educational liberalization should be given top priority in terms of system optimization. Both the content and educational management are subject to the liberalization. Education is a systematic process aimed at providing students with in-depth theoretical knowledge, skills, and practical abilities, as well as fostering their general and professional knowledge, skills, and abilities, and developing their talents. While liberalization in the former involves reducing state participation in education, liberalization in the latter involves granting the right to select specific subjects and textbooks and increasing self study in tertiary education..'' Planning the educational process and clarifying its objectives were deemed crucial in optimizing the system. Throughout planning of all educational stages and incorporating the most critical issues into this plan will optimize the process and expedite goal attainment. It is also essential to consider the unique characteristics of the pedagogue and learners, as well as the educational environment. In this context, the success of the educational process is also influenced by the relevance of individual lesson assignments to the subject's underlying knowledge. In other words, during the lesson, students' attention is directed to the most crucial scientific aspects, enabling the educational goal to be achieved swiftly and efficiently. Conversely, disregarding this criterion will hinder students' comprehension and necessitate excessive effort from both students and educators to master the study material.

Efficiency should be the top priority when it comes to the methods and resources that teachers select for their students. As such, a contemporary teacher ought to determine which subjects cover the most important scientific ideas. Process optimization is one of the many noteworthy results of the Pareto principle's application in education. The 80/20 rule makes it easier to identify the most important ideas, assignments, and resources that have the biggest effects on learning. Deepening disparities between human cultural capacity and mass culture, scientific and technological breakthroughs and their misuse, and professional excellence and learning management are some of the characteristics of the contemporary educational crisis. To mitigate this crisis, it is imperative to optimize the educational system.

Applying Pareto's law will lead to significant improvements in language instruction, especially in mother tongue instruction. There is a need to accelerate this process because the majority of language education resources, including textbooks, concentrate on teaching linguistics rather than language itself. The language problem is improving the language that is being studied and the effectiveness of its utilization. To increase the effectiveness of language use, procedures including generating and appropriately using dictionaries, adhering to the culture of speech, and developing norms for literary language (speak) within the framework of improving the study object are all necessary. As a field, linguistics studies the scientific description of language, focusing on internal issues that are not important for everyday life. It might be regarded as one of the main duties of linguists. For instance, in the Uzbek language, the quantity of verbs, their combination, and mutual differentiation according to characteristics are not significant data for school students. For the learner, data related to the effective language usage in live speech is more important. Yet, there are instances of deviating from the goal of language education in certain current textbooks used in general secondary educational institutions. "These problems are becoming more frequent in mother tongue education, which is causing teaching to come to a standstill and education to stray from its goal of fostering students' creative thinking and equipping them with the skills necessary to articulate their ideas clearly and fluently in both written and oral forms in accordance with speech conditions." For instance, in the current secondary school textbook, 40 hours are dedicated to conjunctions, but there is no information on how to use them effectively in various speech scenarios, even in exercises and assignments. It is plausible to draw the conclusion that students squander a great deal of time and energy on subjects covered in these textbooks that have no bearing on the development of excellent speaking abilities.

These days, advanced education and the raising of children are the most important aspects of lifelong learning. As such, learning materials, especially textbooks, must meet modern standards. The achievement of these goals in mother tongue education depends on the teacher's skill, the student, and the resources at hand. In this age of widespread internet use and amazing scientific and technological breakthroughs, students must not only quickly assimilate information but also be able to correctly classify it.

This throws a heavy burden on the teacher, who is essential to the learning process. In addition to being curious and staying up to date on current events, the instructor should be able to adapt lessons to the needs of the student by using well-reasoned scientific conclusions. One of the most important tenets of state sovereignty is generally agreed to be the existence of a national language. To be able to use this language in a variety of social, economic, and cultural contexts and for all types of communication and interaction, the student needs to become extremely proficient in its phonetics, spelling, lexis, and grammar. It would be advantageous in this situation to give language textbook subjects that improve speaking efficiency priority. By learning more about these subjects theoretically and through exercises and tasks, this can be accomplished. By doing this, we can promote sincere relationships and increase the efficacy of interpersonal communication. Additionally, utilizing Pareto's law to optimize topic distribution and time allocation might improve textbooks' ability to accelerate

learning goals. For example, it is crucial to include knowledge on phonetics, namely the importance of vowels and consonants in the production of syllables. In actual speech usage, characteristics like the precise location of speech sound formation—front or rear of the tongue, wide or narrow, explosive or sliding—might not be as important. So instead of talking about these things, it's important to start talking about how speech sounds are different from other natural sounds and how important they are for meaning-giving. This is still not mentioned in typical secondary school textbooks nowadays. The teaching of morphology, syntax, and lexicology at the general secondary education level is subject to similar problems.

In order to develop students' creativity, autonomy in making decisions, acquisition of knowledge, and aptitude for real-world application, textbooks should encourage students to think critically, creatively, and actively. The content and approach used in modern education are intended to help students control information, pay attention, and think critically while also helping them recognize and evaluate pre-planned errors. By heavily relying on discussion techniques, the objective is to match the learning process of the students with scientific research. It is crucial that important ideas and conclusions be understood and that terminology be defined precisely. The usefulness of textbooks as instructional aids is greatly increased by putting these Pareto-based educational principles into practice. Students' interest in studying science will surely be piqued by textbooks covering basic linguistic ideas.

A key strategy for teaching language at the secondary level is the implementation of Pareto's law in the classroom, especially when developing textbooks. Rather than only having students memorize language rules, this approach attempts to develop students who can use the language successfully in everyday settings. The number of conjunctions in the Uzbek language, their grammatical classifications, and the distinction between lexemes and words are among the factors that are currently deemed incidental to the language's practical application. Therefore, they lack the immediate relevance and practicality that would make them engaging and meaningful to language learners. But it is unfortunately the fact that the current language education covers issues that do not serve to ensure the fluency and accuracy of such a speaker's speech.

It is imperative in postsecondary education to guarantee that learning materials, especially manuals and textbooks, contain the most important knowledge and make a substantial contribution to the creation of well-rounded professionals. This is especially important when teaching courses that emphasize how language is used in particular fields. The main goal of the course "Uzbek Language Usage in the Field" is to make students more proficient in their chosen field when speaking Uzbek and to give them the tools they need to use field-specific vocabulary in written and oral communication. Unfortunately, efficient communication and professional discourse within the field are not sufficiently promoted by the 2021 study guide "The Uzbek Language usage in the Field," which was written with instructors, staff, and students of the State University of Physical Education and Sports of Uzbekistan in mind. As a result, it has little effect on the effective use of language in the field. "Language lexicon", "Types of documents", "Content and essence of the Law of the Republic of Uzbekistan "On the State Language", "Letter and its types", "Formation and improvement of literary language standards". Nonetheless, the most crucial lexicology, morphology, and syntax issues should be covered in this course, as they are essential for modern professional speaking and literary language standards. The effectiveness of the handbook could have been increased, for example, by adding details on the language tools specialists should use in various work-related speech scenarios, sentence structures specialists frequently use, and terminology specific to the field. Future experts will only be able to steer clear of contentious and disputed circumstances in their domains if they do this. The objectives of contemporary language education align with the training of a specialist who can employ the most essential language units for a given speaking scenario.

The fact that students in a class or group have different learning styles must be acknowledged. This means that a customized approach from the teacher, taking into account each student's unique talents, makes learning more effective. Each student demonstrates different mental abilities, recall skills, and worldviews. Pareto's law applies in these kinds of situations. Only around 20% of students need specialized instruction, and the other 80% can understand some courses quite easily. Teachers should plan and schedule their time in the classroom to account for this. The fact that students in a class or group have different learning styles must be acknowledged. This means that a customized approach from the teacher, taking into account each student's unique talents, makes learning more effective. Each student demonstrates different mental abilities, recall skills, and worldviews. Pareto's law applies in these kinds of situations. Only around 20% of students need specialized instruction, and the other 80% can understand some courses quite easily. Teachers should plan and schedule their time in the classroom to account for this. Cutting-edge educational technology usage in a methodical way has been shown to increase students' curiosity about science and learning, which guarantees a deep understanding of the material. Learning progresses when the right technology is used in the classroom to support students' cognitive, memory, and speech development. Additionally, students' cognitive and creative interests are positively impacted by the incorporation of diverse technology into the instructional process. It is crucial to remember that using contemporary educational and pedagogical tools enhances rather than replaces conventional teaching techniques. The application, organization, and knowledge generalization are vital teaching components. Pareto's law is applied in the classroom to help students become more critical thinkers, pay attention when learning, and learn how to evaluate, contrast, and separate important information. It also helps students become active learners rather than just passive recipients of information. In this setting, instructional tools help students explore and realistically apply their creative and cognitive interests. All things considered, there are a lot of benefits to using the 80/20 rule in the classroom for instructional activities. Specifically, the lessons commence by elucidating the learning objectives of the students. Every student advances at a rate and in circumstances that suit the particular traits of their preferred method of learning. The methodical organization of the educational process enables the successful and efficient achievement of predefined goals. Team members are aware of the limitations connected to every phase of the procedure. It is commonly known that using Pareto's principle in the classroom enables students to gain the most critical knowledge and build the necessary skills for real-world application. All things considered, the main goal of pedagogical technology is to improve education, which is the foundation for producing well-rounded workers. This entails making learning more relatable, encouraging learners to think independently and creatively, and making sure that instructional aids are used efficiently.

Recognizing the role that educational instruments play in enhancing the learning process is essential. The effectiveness of education is increased via the technological instruments' incorporation. These resources are essential to modernizing education and, as a result, making it more effective. Nonetheless, there are a difficulties that come with using contemporary technology tools in the classroom for both teachers and students. These difficulties include learning how to utilize these instruments and efficiently allocating the time needed to use them. Nowadays, people have access to an ever-increasing amount of information. As with other members of society, educators need to adjust to this deluge of information and learn how to separate pertinent information from the large amount of available material. Technology tools like video projectors, interactive whiteboards, laptops, "talking" alphabets, and lingophonic devices can all be found in a modern educator's toolset. Examining the technical tools' importance in relation to their historical usage in science education is crucial. It is imperative that we acknowledge that technological innovations, in all their complexity, ought to function as enablers rather than as the main educational goals.

The remarkable rate of evolution of human intellect has led to the extensive integration of technology tools and computerization in a variety of production sectors as well as cultural and educational areas. Consequently, the utilization of technological resources in training professionals across various fields enhances educational efficacy. The rapid evolution of computer technologies has propelled the educational process to new heights, necessitating the knowledge and skills enrichment, as well as the educational content revision, methodologies, and formats. Language education has undergone a significant transition, as demonstrated by the rise of innovative linguistic fields like computational linguistics and the creation of the national and Uzbek educational corpus. Determining and ranking important areas for improvement is made easier by implementing the Pareto principle in the educational process. It is made possible by this to create and execute an efficient policy for education. Finding the most important components and resources for the educational system is aided by the 80/20 rule. It is possible to improve the overall quality of education by emphasizing and bolstering these essential components. The degree of education is, after all, a crucial sign of a nation's intellectual capacity, population health, economic prowess, and international status. Essentially, a citizen's communication skills, social and legal aspects of their existence, and general interest in education are all significantly impacted by the quality of their educational system. It is crucial to understand that the fundamental principles of an educational system also have a role in its efficacy, in addition to the unique characteristics and expertise of its teachers. Similar to other sectors including economics, science, business, and time management, the Pareto principle provides an invaluable instrument for attaining efficiency in educational management. "With the ultimate goal of improving the overall quality of education, the integration of information and communication technologies into the educational process and the strategic allocation of financial resources to educational institutions have a significant impact on the advancement and modernization of education management." It is critical to understand that the indirect nature of education's management results places it inside a complex management system. For example, Uzbekistan's representatives scored in the bottom ten of the most recent Program for International Student Assessment (PISA) 2022, which assessed the reading and scientific literacy of 15-year-old pupils. The results of the study showed that students' abilities are influenced by their socioeconomic situation, home food insecurity, and the quality of educational administration. Overall, the study's conclusions highlight how important it is for managers of education to learn from the experiences of countries with strong, effective educational systems. Promoting the development of language competency for efficient communication should be the main goal of the educational program in the context of language education. Proficiency in language is necessary to enable effective communication. Thus, it is recommended that state education standards emphasize communicative goals, and that language instruction use a communicative approach. This is advice for education managers. In addition, the use of the Pareto principle in educational administration clarifies the general goal of education as well as the particular goals of every subject. It also makes it easier to reject instructional materials that are not in line with the learning objectives and to create an evaluation system that is in line with the curriculum.

4 Conclusion

1. In linguistics, Pareto's law can be a useful methodology as it highlights the importance of concentrating research on practical factors. Researchers can identify primary and secondary research objects according to their practical value by using the 80/20 rule. This makes it possible to prioritize the areas of study that have the greatest potential impact.
2. A Pareto-based approach to language education entails classifying language proficiency according to spoken communication effectiveness. This means giving phonetics,

lexicon, grammar, and methodology—as well as greater time and attention during instruction—additional weight. By doing this, teachers may maximize learning and improve students' speaking ability while spending less time on less important topics. The ultimate goal of this strategy is to enhance communication abilities and speech efficiency in general.

3. Pareto's law must be applied in the educational process in order to maximize its management and content. This idea makes it possible to pinpoint the essential ideas, activities, and materials that significantly affect the learning objectives. Concentrating on these fundamental components improves the effectiveness of the learning process because all energy is focused on accomplishing the main goals.

4. Encouraging the effective use of educational resources and improving educational policy are two benefits of incorporating Pareto's principle into the educational management process. As a result, this drives up the standard of education, produces better results for educational establishments, and improves the relationship between teachers and students.

5. Within lexicography, language units designated for dictionaries can be sorted according to their relative importance or insignificance in speech composition by using Pareto's law. Through the use of dictionaries that list the most significant language units first, users can either speed up the process of learning a language (for translation dictionaries) or learn essential terminology in a particular field (for terminological dictionaries). Active words and frequency dictionaries constitute the basis of such dictionaries.

6. Using Pareto's law in language education at all instructional levels helps students become competent experts who aren't linguists but can use language tools in a variety of speaking situations.

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