HOW AI TOOLS CAN HELP LOGISTICS STUDENTS IN DEVELOPING COUNTRIES

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Annotation: *This article explains the use of artificial intelligence technologies for logistics students in developing countries, how to analyze data, forecast demand, increase efficiency, and organize, participate in, and generate ideas for many projects using artificial intelligence, how students can achieve success, as well as how to prepare vivid and informative presentations and scientific papers for teaching processes. In addition, information is provided on the use of artificial intelligence technologies in logistics for fast and high-quality delivery, data sorting, and emergency response.*

Keywords: *Artificial intelligence(AI), Chat GPT,stimulation, technology,*

It is well known that today artificial intelligence technologies can be encountered in almost every field, including logistics. For students studying in the field of logistics, learning how to use these technologies correctly is considered highly important. This is because through these technologies, students can gain access to a large amount of information and, at the same time, acquire practical experience such as organizing warehouses, analyzing data, and improving delivery efficiency. Through modeling and simulation software, students can undergo practical training in the logistics sector and strengthen their knowledge based on real-life scenarios. In addition, working with data becomes easier with the help of artificial intelligence technologies, reducing working hours and saving time. This, in turn, helps students achieve success in their future professions and increases overall efficiency.

For example, the logistics company Amazon has implemented artificial intelligence to easily organize warehouse data. In addition, the company uses these technologies for demand forecasting and improving customer service quality. Amazon has also developed guidelines for employees on how to use artificial intelligence technologies and has planned training and practical application based on these programs.

"Transport and logistics include a complex set of processes. Stages such as cargo transportation, delivery, and route planning can lead to numerous errors and delays without the support of artificial intelligence. AI algorithms enable real-time monitoring, analysis, and selection of the most optimal routes. This saves time, reduces costs, and improves the quality of customer service." [1]
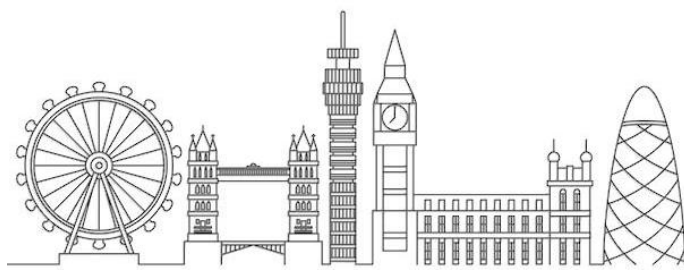
Furthermore, artificial intelligence technologies provide logistics students not only with practical knowledge but also support in acquiring theoretical knowledge and conducting scientific research. Using these technologies, students can create visually appealing and information-rich presentations, receive guidance on writing coursework and academic articles, and gain new knowledge. Artificial intelligence technologies, such as ChatGPT-5, can assist students in generating ideas, following the most accurate and fact-based approaches, and making correct decisions. They also support independent learning and provide access to expanded knowledge databases. By using such modern technologies, students gain experience for the future and reach a level where they can work efficiently in their future professions without major difficulties.

As is known, artificial intelligence is currently widely applied in the logistics sector. Transparent smart surveillance cameras, navigation technologies that ensure fast and accurate delivery, as well as drones and robots used for door-to-door delivery are becoming increasingly common. As observed in many other fields, artificial intelligence technologies in logistics also lead to job reductions. While this may benefit organizational efficiency and economics, it increases the risk of unemployment for future logistics students. Therefore, having knowledge of these technologies and the ability to use them has become not only a priority but also a requirement of the modern era.

In developing countries, especially in relation to modern logistics, several challenges exist. These include the lack of accurate and real data, difficulties in completing practical training due to insufficient laboratory facilities, and the failure to regularly update educational curricula. Artificial intelligence technologies can serve as solutions to these problems and create opportunities for the development of logistics in these countries.

"Globally, 45% of logistics companies are already using artificial intelligence technologies. Meanwhile, 80% plan to increase their profits through artificial intelligence within the next five years." [2]

"People only work for 3-4 hours a day. People need breaks and rest to balance their work and personal lives. But AI can work indefinitely without interruption. They think faster than humans and perform multiple tasks at the same time with accurate results. They can even handle tedious repetitive tasks with ease using AI algorithms. An example of this is online customer support chatbots that can provide instant assistance to customers anytime, anywhere. Using AI and natural language processing, chatbots can answer common questions, solve problems, and escalate complex issues to human agents, providing uninterrupted service to customers around the clock."[4]

"AI systems automatically plan routes and help analyze traffic congestion in advance. For example, a truck driver is redirected to the most convenient route instead of passing through congested roads. This reduces fuel consumption, ensures timely delivery of goods, and minimizes environmental damage. This technology is especially relevant for urban delivery services. In addition, artificial intelligence plays an important role in monitoring the technical condition of transport vehicles. Based on large volumes of daily
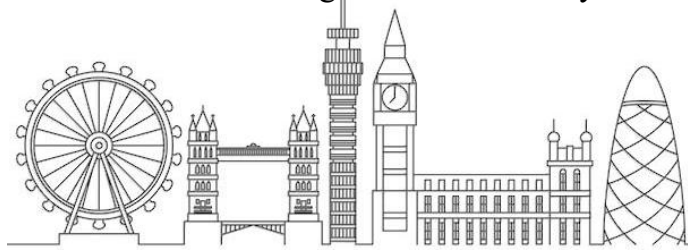
collected data—such as temperature, vibration, power consumption, engine performance, and other indicators AI systems can predict when maintenance is required. This prevents vehicle breakdowns and ensures uninterrupted operation." [1]

Moreover, artificial intelligence improves customer service by ensuring door-to-door delivery, proper storage of goods, and fast transportation, thereby increasing customer satisfaction. AI also plays a significant role in organizing and managing warehouse operations. Tracking the amount of goods loaded, delivered, remaining in storage, and expected arrivals is a complex process in which humans may become fatigued and prone to errors, potentially causing losses. With artificial intelligence, however, these processes can be performed easily and accurately. As known, in logistics, artificial intelligence monitors everything from storing and distributing physical goods to inventory management and even the technical condition of vehicles. Therefore, why should future logistics students not possess the ability to use artificial intelligence? They must certainly learn to use these technologies, apply them in practice, and increase efficiency in their respective countries.

"Additionally, AI systems analyze students' performance in real time, identifying their level of engagement in class, task completion speed, and errors. Based on these analyses, teachers can monitor individual learning progress and adapt teaching methodologies accordingly. Analytical modules created with AI systems provide teachers with in-depth statistical data on students' overall performance, strengths, and weaknesses. This enhances educational quality, enables personalized learning models, and supports scientifically grounded pedagogical decisions. Overall, the implementation of artificial intelligence systems in education does not replace teachers but rather supports them as digital assistants. As a result, teachers can focus more on strategic, creative, and educational tasks, significantly improving the quality and effectiveness of the learning process. AI-based assessment, monitoring, and analysis continuously evaluate students' knowledge and track their development dynamics, accelerating assessment processes and ensuring objectivity." [3]

Despite the wide range of opportunities artificial intelligence provides for students, it also has certain drawbacks. For instance, since ChatGPT was first introduced in 2022, concerns have arisen that it may reduce students' critical thinking and analytical skills in education. There is a perception that students may rely excessively on artificial intelligence instead of conducting independent scientific research, which could narrow their thinking capacity over time.

Additionally, the high cost of artificial intelligence technologies may limit efficiency gains, reduce professional activities, cause job losses, and lead to a loss of personal influence and societal roles.

"High cost: The brighter the AI, the higher the price. Not only is the product price high, but when you add in the installation, maintenance, and repair costs, AI is clearly expensive. Perhaps the maintenance and repair costs will also be high. As AI requires

more digital devices, the amount of power needed to run schools will increase. Schools will need to expand their budgets to cover the costs. In addition, they will need to come up with solutions to balance power consumption. When you add in the installation, maintenance, and repair costs, AI is clearly expensive. So, for now, only well-funded schools can benefit from it.

Job losses and unemployment: While the software industry is booming, AI could soon replace many school workers. From administration to teaching, it has a solution for everything. With online learning, there is no limit to class sizes, and it could lead to massive unemployment in the education sector. Making teaching more efficient could mean fewer teachers. With open online learning, class size is no longer a determining factor in quality education, and implementing AI could mean fewer textbooks and assistants."[5]

In conclusion, artificial intelligence is merely a technology created for human use, and the ability to direct and utilize it correctly is crucial. If used appropriately, artificial intelligence can help cultivate future leaders; however, misuse may lead to negative consequences. Therefore, students should learn from an early age how to use artificial intelligence technologies and apply their knowledge in future professions, thereby contributing to society. In developing countries, artificial intelligence can provide students with access to essential information through its extensive databases; however, continuous improvement and enhancement of quality should not be overlooked.

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