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## Education in digital transformation, along with its opportunities and challenges to rising economies

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**Abstract.** Significant progress has been made in the field of fake ideas in recent times. OpenAI has pioneered in this area, regularly initiating research. The ChatGPT dialect show has attracted considerable attention due to its remarkable ability to process ordinary dialects. The potential of this innovation to upgrade education, especially in developing countries, requires a comprehensive investigation of its expected impact. The essential objective of this study is to conduct a thorough assessment of OpenAI, particularly ChatGPT, in connection to the educational environment of developing countries. Utilizing the basic record examination strategy, this reflection explores key aspects of ChatGPT, including its ability to offer adaptive and personalized learning, providing high-quality instruction, and support dialect, among other benefits. This research offers a comprehensive consideration of the key interest and limitations associated with this innovation. Its objective is to upgrade our understanding of the potential affect it may have on education in developing countries, accomplished through a broad assessment of ChatGPT.

**Keywords:** digital education, artificial intelligence, ChatGPT, benefits, challenges, rising economics, students' motivation, general academic performance, changing education with technology.

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## **Introduction**

Given its potential to revolutionize current educating and learning practices, the application of artificial intelligence (AI) has attracted significant interest recently. By providing personalized feedback and granting students access to a wealth of educational resources, AI technology can enhance the learning experience. Additionally, AI-powered systems can offer real-time feedback and insights into student learning, allowing instructors to adjust their teaching methods and improve student outcomes. AI can also assist instructors in grading and assessing student work, freeing up their time to focus on other important aspects of education. The creation of insightful learning systems is one of the foremost energizing employments of AI in education. By giving each student personalized feedback and content depending on their strengths and weaknesses, these frameworks can personalize learning. The learning process can be made more compelling and locks in by utilizing ITSs that can alter to each student's learning preferences, pace, and style. The creation of chatbots and virtual collaborators that can help students in real-time and react to their enquiries represents another area where AI has appeared guarantee. These innovations offer immediate, personalized support, eliminating the need for learners to wait for responses from teachers or guides.

ChatGPT, a momentous creation by OpenAI, has the potential to make a significant impact on the education sector in developing markets, where access to quality educational resources is often limited. OpenAI, an innovation company specializing in AI, has in a general, sense reshaped our interaction with innovation. Among its surprising progressions, ChatGPT, a huge dialect shows with multifaceted capabilities such as replying inquiries and producing content, stands out. In later times, there has been a developing interest in the potential applications of OpenAI and ChatGPT, especially within the education in developing economies like Brazil, India, and China. This intrigued has been driven by the prospect of leveraging these innovations to upgrade educating and learning.

In spite of reactions and bans in certain communities and districts, huge dialect models are immovably settled in within the AI scene, as emphasized by Gjergji Kasneci. These models present a significant advancement in AI, with the fundamental innovation serving as a pivotal element for progress. Gjergji Kasneci explores the potential benefits and challenges of utilizing huge dialect models in education, considering both students and educator points of view. They fight that viably coordination expansive dialect models into educational settings requires the advancement of mastery and data proficiency among teachers and students, empowering them to comprehend the technology's capabilities, restrictions, and potential vulnerabilities - impressive challenge that must be tended to. Besides, Gjergji Kasneci declare that a clear methodology inside educational frameworks and an educational approach that prioritizes basic considering and fact-checking aptitudes are imperative prerequisites for saddling the total potential of large dialect models in learning and educating. This is often non-negotiable, as such integration cannot happen without these principal components. In conclusion, Gjergji Kasneci emphasize that AI arrangement in education faces challenges that amplify past its space, including concerns around inclination in yields, the require for continuous human supervision, and the potential for abuse.

In any case, Gjergji Kasneci set that on the off chance that these challenges are explored keenly, they can offer important bits of knowledge and learning openings, presenting students early in their scholastic ventures to the subtleties of social predispositions, basic considering, and the dangers related with AI applications. Teo Susnjak conducted an examination of ChatGPT's capacity to perform high-level cognitive assignments and produce human-like content. This examination, as detailed by Teo Susnjak, has raised worries around the potential for scholarly untrustworthiness, especially amid online examinations, where ChatGPT's adeptness at basic considering and content era with negligible input may posture moral concerns. Teo Susnjak too recommends that a return to invigilated and verbal examinations may be portion of the arrangement. In any case, indeed as made strides proctoring procedures and AI-text yield finders are considered as potential cures, accomplishing immaculate arrangements in this domain remains questionable.

Randy Delight Magno Ventayen sheds light on the developing utilization of ChatGPT in the scholarly community, particularly for complex cognitive assignments, however underscores concern almost its potential for empowering scholarly untruthfulness, as students may utilize it to form papers and other scholarly assignments. Randy Bliss Magno Ventayen highlights the basic issue of shielding scholastic astuteness, especially in higher education situations where such assignments are commonplace. To dive more profound into this matter, Randy Delight Magno Ventayen inspected ChatGPT-generated yield utilizing Turnitin and a rewording instrument to gage its similarity record. Comes about from term paper titles distributed by Pangasinan State College uncovered that ChatGPT's yield met the institution's required similitude file, showing a potential risk to scholastic judgment.

In light of these dialogs and concerns, this ponders points to supply a comprehensive examination of the points of interest and disadvantages related with the use of OpenAI's ChatGPT within the education division of developing markets. The objective is to evaluate how ChatGPT can emphatically affect education in developing locales whereas too digging into the potential restrictions and dangers it may involve. This ponder is of most extreme significance since developing markets confront one-of-a-kind challenges, counting restricted get to quality education, and ChatGPT presents potential arrangements to bridge this instructive separate. In any case, it is basic to guarantee that its utilization does not compromise the keenness of academic interests.

### **Problem statement, the purpose of the study**

The acronym "Chat Generative-Pretrained Transformer" commonly alluded to as "ChatGPT" speaks to a noteworthy turning point within the domain of characteristic dialect handling. Created by OpenAI, this progressed dialect show has experienced broad preparing on an endless corpus of content information, empowering it to create content reactions that closely mimic human dialect. Established within the Transformer design, particularly outlined for successive information handling, ChatGPT stands as an essential advancement. The essential mission of ChatGPT is to upgrade the era of human-like content over different applications, extending from client benefit to dialect interpretation and substance creation. Its flexibility permits it to create a wide range of content yields, from basic reactions to complex, well-structured compositions,

depending on the complexity of the input inquiry. As García-Peñalvo has watched, the year 2022 checked a noteworthy mechanical advancement, characterized by its eccentrics, frequently alluded to as a “black swan”. This development gathered gigantic consideration in both traditional and advanced media, putting AI back within the highlight. García-Peñalvo contends that the ChatGPT wonder has revived dialogs approximately the positive and negative impacts of AI on society, giving significant prove to back this claim.

García-Peñalvo encourage notes that responses to the dispatch of ChatGPT have been assorted, extending from eagerness among early adopters and trailblazers to worries associated to those delineated in science fiction, such as the Eliminator establishment. These responses are basically impacted by the model’s openness and ease of utilize, and they especially center around its potential suggestions in education and scholarly educate, given its capacity to create content that closely takes after human-authored substance. Agreeing to García-Peñalvo, we are at the cusp of a mechanical change, where ChatGPT has advanced from being an oddity to possibly getting to be a troublesome development. The victory of this innovation as a troublesome drive pivots on a large number of components. In any case, endeavors to deny or deny it utilize are impossible to obstruct the progressing wave of advancement in this space. Hence, it is basic to altogether comprehend the capabilities, focal points, and downsides of expansive dialect models like ChatGPT, especially within the setting of instruction.

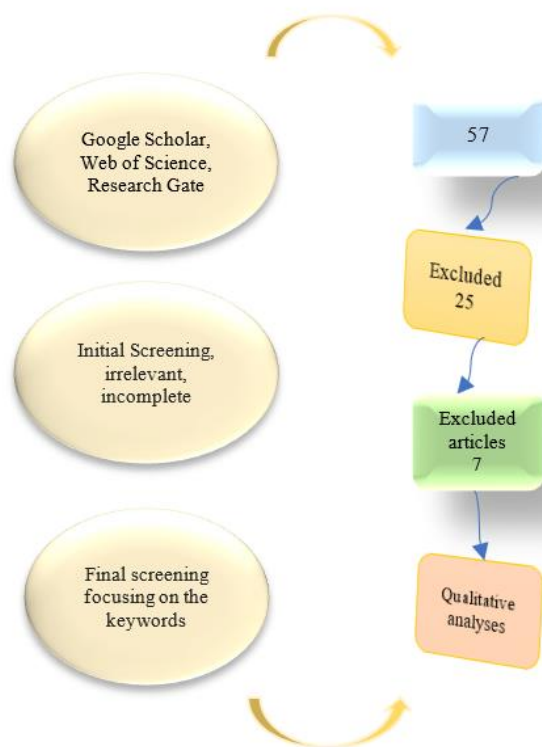
John Cotton agrees that the application of AI in education has gotten to be a central point of intrigued, reflecting the broader talk encompassing the utilize of ChatGPT in scholastic settings. Besides, M. Qadir raises moral concerns related to the utilize of generative AI in education, counting the potential for unscrupulous students’ behavior and the uprooting of human occupations due to innovative robotization. The open discharge of ChatGPT, with its exceptional capabilities, has pushed AI-driven content era into the cutting edge of scholarly and instructive talk. These creators highlight the complex challenges postured by ChatGPT and comparative innovations for educational professionals, legislators, and researchers. In expansion, they give bits of knowledge into the authentic setting of technology’s relationship with perusing, cognition, and instruction, underscoring the require for a more profound examination into the execution and confinements of modern dialect era program. Minister advocates for a move within the instructive approach, proposing that rather than centering exclusively on instructing composing mechanics, teachers ought to emphasize progressed composing aptitudes that advance basic considering. This viewpoint reflects the potential effect of expansive dialect models like ChatGPT on conventional composing instruction.

The prof. Jr.L. Kung has assessed ChatGPT’s execution on the Joined together States Restorative Permitting Exam, illustrating its capacity to attain or approach passing scores over all three appraisals without specialized preparing. They moreover note the tall concordance and shrewd nature of ChatGPT’s clarifications, implying at its potential utility in restorative instruction and clinical decision-making. J.Pavlik digs into the transformative potential of generative AI, especially ChatGPT, within the field of news coverage and media yield. By collaborating with ChatGPT to

deliver a paper, J.Pavlik outlines the platform's capabilities and impediments, shedding light on the suggestions of generative AI for news coverage and media instruction. A. Azaria highlights the adequacy of huge dialect models like ChatGPT in different spaces, counting instruction and conversational operators. Whereas examining ChatGPT's inclination toward digit utilize, A. Azaria draws consideration to the relationship between digit consistency in ChatGPT-generated content and human inclinations for certain numbers. The article investigates both the focal points and imperatives of ChatGPT's conversational specialist plan. Cotton et al. propose that ChatGPT's integration into higher education may abdicate benefits such as expanded students' engagement, collaboration, and openness. In any case, they too express concerns related to scholarly keenness and literary theft. M. Qadir underscores the centrality of remaining side by side of innovative progressions in designing instruction and traces the potential focal points of consolidating generative AI advances like ChatGPT. In any case, both M. Qadir and J. Cotton caution against neglecting the technology's confinements, counting predispositions in preparing information and the hazard of propagating untrue data. [1]

## Research methods

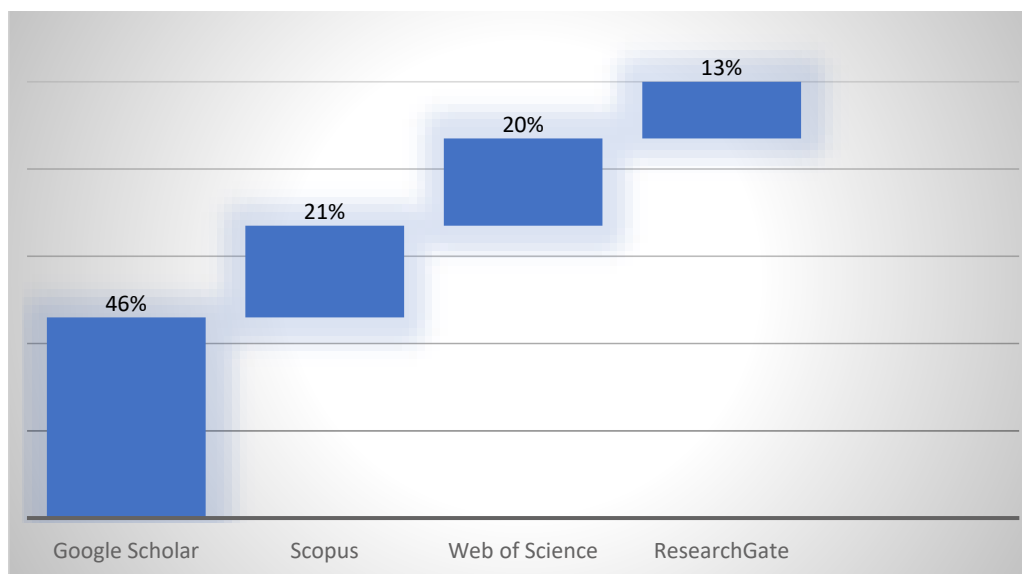
This consider utilizes the basic record explanatory strategy, wherein it surveys person records such as daily papers and blogs, nearby definitive sources like created diaries and books. The objective is to assess the potential focal points of joining ChatGPT into the instruction division of developing economies whereas too scrutinizing any related disadvantages and dangers. The inquire about points to address two key questions: to begin with, what are the potential benefits of actualizing ChatGPT within the education segment of developing economies, and moment, are there any drawbacks and risks related with the utilization of ChatGPT within the education of rising economies? The essential center of this paper lies within the crossing point of ChatGPT and instruction, with an accentuation on analyzing studies that investigate the part of AI inside instructive settings. The inquire about commenced with a comprehensive rummage around for works relating to the utilization of AI in instructive settings and ChatGPT. Amid the starting stage of archive collection, a add up to of 57 articles were recognized from four major scholastic websites: Web of Science, Google Researcher, ResearchGate, and Scopus. The articles considered were fundamentally those distributed from 2005 forward, adjusting with the topic's significance to advanced change and the expanding unmistakable quality of ChatGPT in later years. Subsequently, an auxiliary circular of screening was performed to isolate articles particularly examining the utilize of ChatGPT in instructive settings. This screening prepares come about within the determination of 25 distributions to be included within the consider and subjected to ensuing investigation (allude to Figure 1 for subtle elements).



**Figure 1. The steps that were used to determine which articles were included and which were omitted. (Source: author's analysis).**

Note: compiled by the authors based on sources [2]

All through the report investigation handle, articles were chosen based on their significance to the investigate address or the subject beneath examination. Be that as it may, it is critical to note that not all recognized articles were joined into the survey. A few variables, counting the centrality, comprehensiveness, and recency of the articles, impacted the choice to prohibit certain papers. These chosen papers constituted the essential sources of data utilized to determine the discoveries examined inside this inquire about. The discoveries were synthesized utilizing the data gathered from these chosen distributions.[3] Taking after the completion of the examination, a topical information examination strategy was embraced to classify the recognized issues into unmistakable topics.[4] These topics overwhelmingly spun around the preferences and impediments that ChatGPT presents inside the education segment of developing economies. For a nitty gritty breakdown of the steps included within the distribution of articles from different legitimate websites, it would be ideal if you allude to Figure 1, which gives a comprehensive outline of the complete prepare.[5] In expansion, Figure 2 offers bits of knowledge into the dispersion of considers over diverse definitive destinations, with Google Researcher contributing 11 articles, 5 articles by Scopus, 4 articles by Web of Science, and 5 articles by ResearchGate.



**Figure 2. Articles used from various sites**

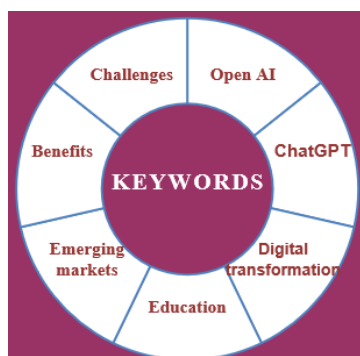
Note: compiled by the authors based on sources [6, 7]

The dispersion of papers on a few websites such as Google Researcher, Scopus, and Investigate Door is sketched out in Figure 2 over. Figure 1 traces the steps that were utilized to decide which articles were included and which were excluded.

Articles were chosen for the archive investigation based on their potential value in replying the investigate address. Be that as it may, not all of the recovered papers were utilized within the examination. Now and then articles weren't included since they weren't fundamental or weren't up-to-date.

**Keywords Utilized within the Think about**

The search strings and expressions that were utilized within the research are displayed within the figure underneath (Figure 3). The list isn't comprehensive, but it does its best to paint a sense of how the study's terms were utilized.



**Figure 3. Keywords used in the study**

Note: compiled by the authors based on sources [6, 9]

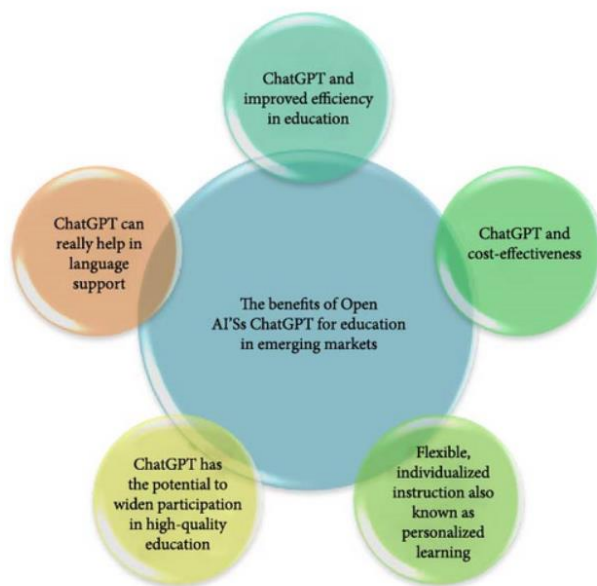
The keywords and expressions that were looked for all through this examination are outlined within the chart over (Figure 3). The list isn't comprehensive, but it does its best to donate a thought of how the concepts that were utilized within the ponder were utilized. These watchwords were utilized within the screening prepare and looking for the important articles among other components just like the period of distribution and significance of the article in replying the investigate questions.

## **Discussion and results**

There may be a few benefits to be picked up from actualizing ChatGPT by OpenAI within the educational division of developing markets. The educational industry in rising economies is gone up against with a few impediments, such as restricted assets, a need of get to quality education, and the prerequisite to oblige a wide assortment of students' learning prerequisites. The wide dialect show known as ChatGPT which was created by OpenAI can totally change how education is given in these zones. By offering customized and readily accessible education, ChatGPT has the potential to bridge the achievement gap between students and high-quality education. ChatGPT can give students with quick answers to their inquiries much appreciated to its capacity to get it and respond to normal dialect. This empowers students to memorize at their claim pace and from anyplace by giving them the flexibility to consider in their possess time. In expansion, ChatGPT can help teachers by providing them with advantageous materials and smart data that can offer assistance them progress their teaching strategies. The execution of ChatGPT in educational settings has the potential to altogether upgrade the learning comes about and encounters of students, especially in rising economies with limited get to instruction of an adequate standard. A few of the reasons incorporate the reality that it can reply student questions, give personalized input, and create instructive substance. ChatGPT's capacity to function at scale is advantageous in developing economies with restricted assets and huge lesson sizes, and its capacity to get it common dialect and tailor reactions to person understudies can bridge holes in information and understanding. In expansion, ChatGPT can give get to high-quality instructive assets and information. However, it's critical to recognize that this apparatus has restrictions as will be outlined within the areas underneath. These qualities will be broken down into their parts within the taking after sections.

Figure 4 shows the benefits of Open AI's ChatGPT for education in developing countries. These benefits include personalized learning that is flexible and tailored to individual needs. ChatGPT can also help more people access good education and provide language support, among other things.





**Figure 4. The benefits of Open AI'Ss ChatGPT for education in emerging markets**

Note: compiled by the authors based on sources [2]

### **Adaptable, Customized Teaching Also Called Personal Learning**

ChatGPT can be used to give personalized learning experiences for each student. Personalized learning is a teaching approach that takes into account each student's individual skills, interests, and needs. This helps create a special learning experience that is tailored just for them. Students and teachers work together to create personalized lesson plans that will be used in class. ChatGPT can answer questions, give explanations, and help students as they learn. This allows it to offer personalized learning, making studying easier and more effective. ChatGPT can provide tailored learning experiences in developing countries because of its language skills and the extensive amount of information it has been trained on. ChatGPT can understand questions and respond in a way that feels natural, thanks to its ability to process language. This allows it to have conversations with users, and these talks can be changed to fit what the user needs and likes. This can be very useful for developing countries that don't have as many educational resources as richer countries. As ChatGPT interacts with more users, it can better understand how they learn and give them more personalized suggestions. ChatGPT is an AI that can look at what users' type, including their answers to questions, the way they use language, and what they say. By looking at this information, ChatGPT can understand how users like to learn, what they prefer, and what they need. Another important thing is that ChatGPT's learning methods allow it to adjust to what each user needs and likes. You can easily use ChatGPT by talking to it in a simple chat format. This makes it easy to use for people in developing countries who may not have regular educational tools or technology. By using these features, ChatGPT can change the way people in developing countries access and get an education. This could help everyone, no matter where they live or how much money they have, to learn and get better.

### **ChatGPT could help more people access good education.**

Emerging markets often lack enough resources for education, which includes not having enough trained teachers. ChatGPT can help close the knowledge gap by giving students access to good educational information and resources. It also offers support and guidance on many different subjects. Recent advancements in AI and natural language processing have opened up new ways for learning and education. People can learn through conversation with ChatGPT because it has advanced language skills that help it understand questions and respond like a human. For example, someone in a growing market might ask ChatGPT a question about a certain topic, and it would give a helpful and accurate answer. This might help fix the lack of educational resources. On the other hand, this depends on having important things like internet, electricity, and electronic devices. People in developing countries who don't have access to regular educational tools or technology might find it easy to use ChatGPT. This is because they can access it through a simple chat feature, as mentioned before. For example, someone in a developing country with limited internet access could use a basic smartphone to access ChatGPT and get a good education. ChatGPT can change how people in developing countries get and learn information. It can offer good education to anyone, no matter where they are or how much money they have, by using its language skills, big set of training information, ability to change, and ease of access. ChatGPT could be a powerful tool to help reduce the knowledge gap and make sure people in developing countries can access good education, if it is improved and used effectively.

### **ChatGPT can offer language assistance**

The vital aspect that can be exceptionally instrumental for the education division in rising economies is the truth that ChatGPT offers interpretation in genuine time. ChatGPT is competent of deciphering content from one dialect to another in real-time, clients can take part in educational discussions within the dialect that's most normal to them, indeed in spite of the fact that the dialect of the asset or the educators may be distinctive. To illustrate this, an individual living in a developing country who developed up talking Shona or French as them to begin with dialect might utilize ChatGPT to translate an English-language course reading into their mother tongue, which would make it simpler for them to comprehend and hold the data contained inside the book. As was highlighted prior, ChatGPT can customize itself to the particular necessities and slants of each client much appreciated to its machine learning calculations. This comprises phonetic inclinations and capabilities, which empower the arrangement of individualized phonetic offer assistance to people in rising markets. For occurrence, an individual in a rising showcase who is having inconvenience understanding a particular theme in English seem inquire ChatGPT for help, and it would give clarifications and additional assets in their local dialect, so helping them in way better comprehending the subject matter. What we are watching is that ChatGPT has the potential to usher in a unused time of dialect bolster within the instructive division of rising economies since of its capability to be utilized in a few dialects, translation in real-time, capacity to be personalized, and common openness, it could be a culminate device for those who may not have get to materials or instructors who are familiar in their unique dialect. ChatGPT offers the capacity to grant a fabulous instruction to anybody, in any case of dialect deterrents, by tackling

these aptitudes. This would help to bridge the information crevice and empower get to quality education for all people in developing nations.

### **ChatGPT and better learning at universities**

The utilization of instruments like ChatGPT that are fueled by AI can help to streamline the educational process. This, in turn liberates up more time for educators to center on other basic obligations. This may lead to more steady and exact evaluating and assessment of the student's work. In rising countries, as laid out some time recently, the educational segment is habitually gone up against with considerable deterrents, such as inadequately assets, destitute framework, and a need of gifted educators. This will lead to wasteful aspects within the conveyance of instruction, which can result in less people being able to get to quality instructive openings. Be that as it may, later improvements in AI and NLP have cleared the way for unused strategies of instruction conveyance which can upgrade proficiency and empower get to quality education for everybody. People in developing markets can get computerized help from ChatGPT, which empowers them to get answers to questions and get to data without the required for a prepared teacher or any other instructive asset. ChatGPT can do this since it can give computerized help. This has the potential to help in bringing down the weight put on rare assets and upgrading the educational industries in general level of efficiency. For case, a person in a creating advert who is having trouble with a particular theme might inquire ChatGPT for help, and it would give a reaction that's exact and related, in this manner upgrading the individual's understanding of the fabric and expanding the adequacy of their learning.

Also, the computer programs that run ChatGPT allow it to adjust to what each user needs and prefers. This personalized way of learning can help make the education system better by reducing the time and resources needed to provide a good education. For example, someone in a growing country who is struggling with a certain subject can ask ChatGPT for help. It will give them explanations and extra resources that match their needs. This would make their learning better and use fewer resources. Another advantage is that ChatGPT can be used anytime, day or night. This means that people in developing countries can get education and help whenever they need it. This makes education better by allowing people to take less time off work or other duties to achieve their learning goals and by making the learning setup easier and more flexible. A person in a developing country who works long hours might use ChatGPT in the evenings to learn and understand a specific topic better, which can help them learn more effectively. ChatGPT could really change how education is given in developing countries. This could lead to better productivity and make it easier for everyone to access higher-quality education. ChatGPT helps people in developing countries by offering support, personalized learning, and being available anytime. It is a great tool for those who may not have regular school resources. ChatGPT can help make education better in developing countries by using its skills. This can help reduce the differences in knowledge and make sure everyone can access good education.

### **ChatGPT and Saving Money**

As demonstrated, all through this think about, due to moo money related assets, there's limited get to instruction of an adequate standard in improvement. In rising markets, the instruction division is confronting a few issues, such as restricted assets, expansive course sizes, and inadequately educator planning in nations. Since of the developing request for high-

quality instruction, there's a squeezing got to discover arrangements that minimize the money related burden related with tending to these issues. Through its capacity to convey low-cost and individualized learning encounters, ChatGPT has the potential to revolutionize the instruction division in rising economies, with understudies having the opportunity to get individualized instruction through one-on-one coaching sessions made accessible through ChatGPT. The demonstrate can communicate with understudies in ordinary dialect, reacting to their request, giving clarifications, and proposing more assets based on the student's capabilities and necessities. An understudy who is having trouble with a certain subject in arithmetic, for occurrence, can inquire for help with ChatGPT and get individualized, step-by-step clarifications and cases that will help them in way better comprehending the issue.

Students in creating economies, who may not have prepared get too high-caliber teachers or assets, can advantage hugely from this, making it a particularly critical opportunity. Once more, ChatGPT can moreover be utilized within the reviewing of assignments and the arrangement of input to understudies on the work that they have completed. The demonstrate can comprehend the bigger setting of the task, assess the student's work, and provide composed criticism that's particularly catered to the student's ranges of quality and powerlessness. This could spare educators' time and cut down on the taken a toll of reviewing and giving criticism, making it more open for understudies in creating markets. Understudies can to utilize ChatGPT to get ready for standardized examinations using this apparatus. Understudies will be able to upgrade their scores with the assistance of the show, which can give individualized practice questions and input.

Teachers and students in developing markets may advantage from a diminishment within the taken a toll of test planning as a result of this, making it simpler for them to take an interest. As a result of all this, we will see that ChatGPT has the potential to alter the instruction division in creating districts by advertising low-cost and individualized learning encounters. The capacity of the show to associated with understudies in their local dialect, give input in real-time, and review assignments can contribute to a diminishment within the taken a toll of instruction whereas at the same time improving the quality of learning. ChatGPT has the potential to be a game-changer for understudies in immature countries who are looking for get to fabulous education since of its adaptability and cost-effectiveness. In any case, a few limitations have to be considered, indeed in spite of the fact that actualizing OpenAI's ChatGPT within the instruction segment of rising markets may result in numerous positive results as will be examined within the taking after segment.

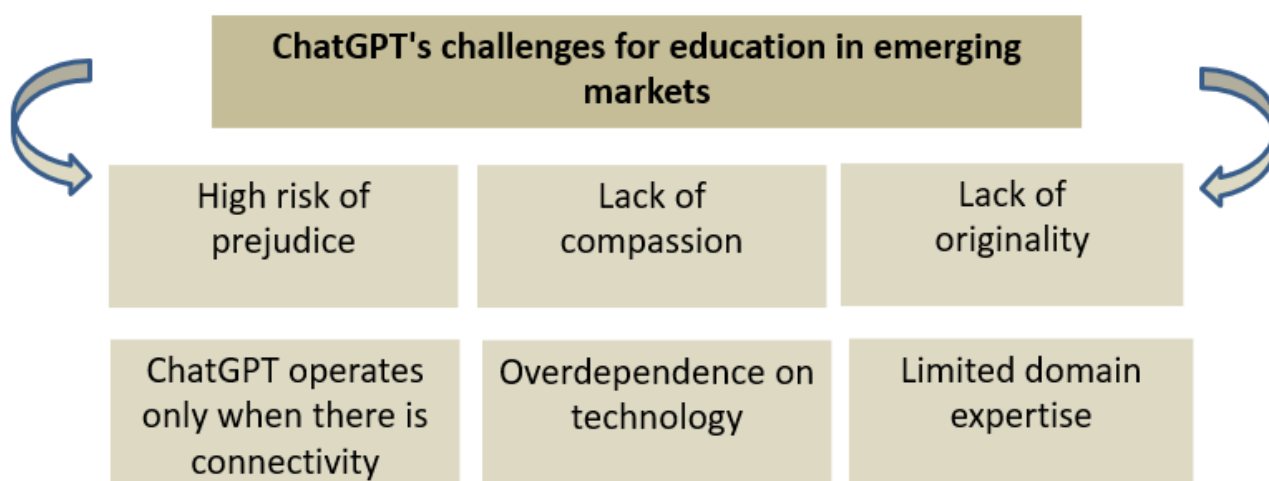
### **Difficulties in Implementing ChatGPT in Educational Institutions in Emerging Markets**

There are a number of advantages to using OpenAI's ChatGPT in emerging economies' educational systems, but there are drawbacks as well. The following Figure 3 lists a few of these restrictions.

Some of the obstacles to ChatGPT's adoption at educational institutions in emerging markets are listed in Figure 5. A significant likelihood of prejudice, a lack of empathy, and the fact that GPT only functions in connected environments are a few of the difficulties. The type of training data that ChatGPT and other AI-powered apps are exposed to determines their objectivity, which is a crucial factor that has been clarified in earlier studies. If the training data is biased, the answers

produced by these models have the potential to reflect the biases present in the training data. This inherent danger has significant ramifications, particularly in situations where students -might not have the critical thinking skills necessary to distinguish and assess the information they are given. For instance, an AI model may unintentionally provide replies that support the continuation of harmful preconceptions or prejudices if it is trained using biased terminology.

This situation presents the concerning possibility that educational chatbots may spread false information or reinforce negative stereotypes, which might have a negative impact on students' moral and cognitive development. Furthermore, it is possible that the model will give certain information categories a disproportionate amount of weight compared to others. This bias may result in an unbalanced portrayal of various viewpoints and experiences, leading to educational chatbots that provide information that is either inaccurate or incomplete. As it stands, such a situation would surely throw a dark shadow over the educational environment and hinder pupils' overall development.



**Figure 5. ChatGPT's inadequacies in emerging-market educational institutions**

Note: compiled by the authors.

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One of ChatGPT's shortcomings is its lack of empathy. ChatGPT must to share information and respond to inquiries devoid of compassion and understanding. This can be particularly distressing for students who need emotional support or who are struggling in a particular topic.

In order for people to understand and relate to the feelings and experiences of those around them, effective teaching and learning strategies are crucial. Again, because ChatGPT lacks empathy, it cannot provide the social connection and psychological support that children need to thrive and accomplish their goals. ChatGPT frequently suffers from a lack of empathy, which can lead to a loss of a personal connection with students.

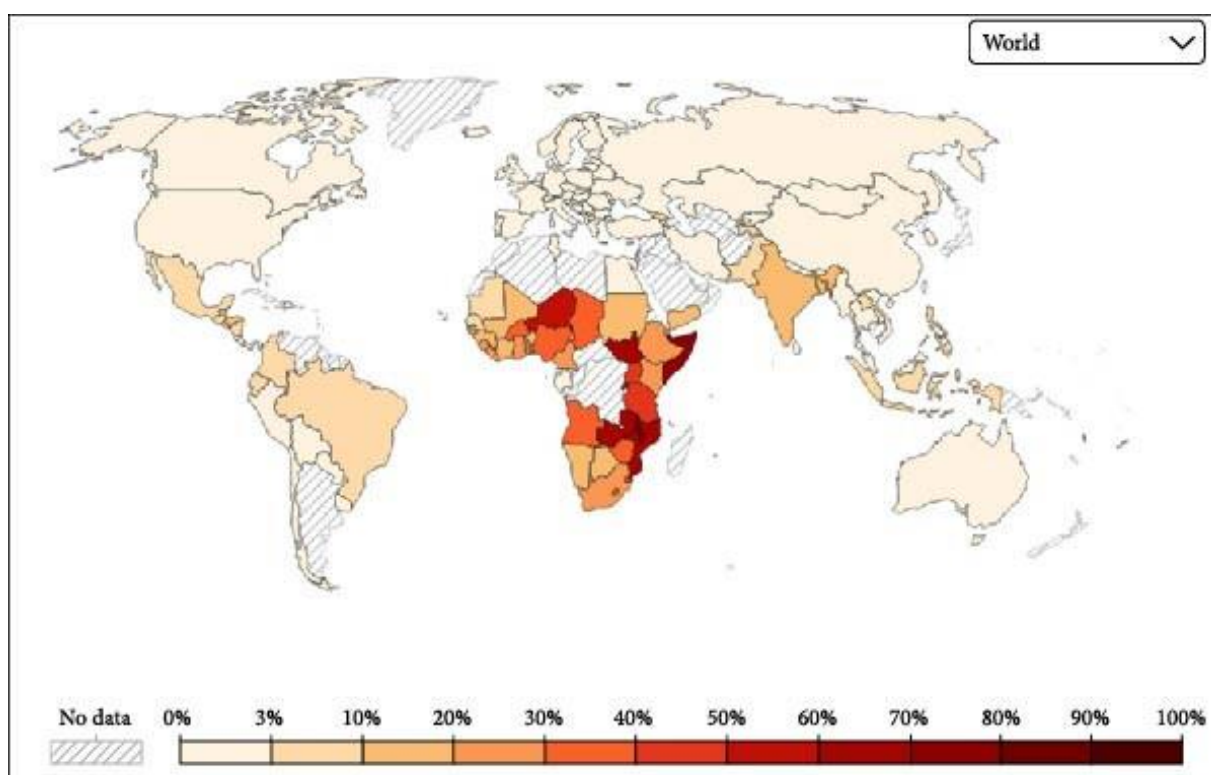
Building personal relationships with children requires empathy. As a result, kids are less likely to feel valued and inspired by the chatbot, which might negatively affect students' motivation, involvement, and general academic performance. For example, if a student is struggling in a certain subject, that GPT could be able to provide factual information, but it might not be able to build a rapport with the student that encourages and drives them to pursue further education. To understand each learner's unique needs and experiences and to react to them correctly, empathy is also crucial. ChatGPT's chatbots might not be able to offer students support tailored to the particulars of their issues because of its lack of empathy. For example, if a student has a learning disability that makes it difficult for them to understand a certain subject, the GPT may not be able to understand this requirement or provide a supportive response. Instead of fostering critical thinking and problem-solving abilities, the use of ChatGPT in the educational sector in emerging economies may instead increase reliance on technology. This is due to the fact that ChatGPT was created with user communication in mind. It's likely that ChatGPT lacks a thorough understanding of all subjects, especially specialist ones, despite having been trained on a wide range of topics. The model may not be able to provide accurate or useful information in situations such as these. The limited domain knowledge that chatbots possess is the other biggest barrier to their use in the educational environment. This may result in chatbots providing students with inaccurate or incomplete information, which could impair their capacity to learn and degree of engagement with their coursework. It's probable that ChatGPT is unable to understand the cultural sensitivity and subtleties that exist in many nations and regions; as a result, the chatbot may give inappropriate or insulting answers. Once more, even if ChatGPT has been trained on vast volumes of text data, its understanding of certain topics or regions may be limited. This means that the chatbot can give inaccurate information or responses that aren't supported by solid facts or established expertise. Once more, it's possible that ChatGPT lacks comprehensive knowledge of a certain topic or subject, which could lead to students receiving incomplete answers to their questions. For students, this can be a cause of misunderstanding or annoyance as well as a barrier to learning and participation.

ChatGPT might be able to provide responses to queries, but it might not be able to generate original concepts or come up with original solutions. This could reduce the program's ability to help students who need more innovative or creative solutions. Education sectors in emerging nations are increasingly looking to technology-based solutions to address issues such a lack of qualified teachers, scarce resources, and restricted access to technology. It is anticipated that this trend will continue. Furthermore, ChatGPT cannot be altered to accommodate every student's unique needs and preferences. This may result in a one-size-fits-all method of instruction that ignores the individual needs and learning preferences of every learner.

In no way is ChatGPT meant to encourage problem-solving or creative thinking. This can limit pupils' ability to think creatively, hinder their ability to generate new ideas and solutions, and

inhibit their ability to think creatively. The fact that ChatGPT only works in places with Internet access is another issue; many individuals in developing countries are impoverished and lack dependable Internet access. Additionally, a large number of people in developing countries' rural areas are not linked to the national electrical grid. The advantages of ChatGPT will only be available to users in environments with dependable internet access.

An overview of the areas that are most affected by poverty and yet have difficulty obtaining contemporary amenities like electricity is given in Figures 4 and 5. As seen in the figure, ChatGPT will not make much of an impact on education in these regions, especially Africa and parts of Asia, where the population is poor, lacks internet access, and finds it difficult to use gadgets like laptops and cellphones. Figure 6 shows the proportion of the whole population living in extreme poverty.



**Figure 6. Share of population living in extreme poverty, our world in data**

Note: compiled by the authors based on sources [5]

Changing Education with Technology. Changing Education, as depicted by Turkish experts Aydın Balyer and Ömer Öz, is the comprehensive appropriation of different mechanical apparatuses and procedures pointed at upgrading the results of instructing and learning over all aspects of the instructive framework. This enveloping move involves the integration of advanced assets, online stages, and directions program, all of which contribute to an made strides instructive encounter for both understudies and teachers. Outstanding cases of instructive innovation include online instruction, virtual classrooms, electronic books, and instructive applications. By and by, higher instruction is within the middle of a noteworthy change, essentially driven by

the joining of innovation into the guidelines prepare. This change, ordered by the need to outfit understudies with a more locks in, personalized, and viable learning environment for their arrangement within the advanced time, has significant suggestions not as it were for students' learning strategies but moreover for instructors' instructing approaches.

The digitization of higher education brings considerable focal points, because it awards students the opportunity to get to educational assets at their comfort and from any area. Progressed innovations like ChatGPT have altogether affected the educational division, especially in emerging markets. A noticeable advantage of these advances lies in their potential to break down obstructions to learning confronted by different groups of learners. To illustrate, students dwelling in remote country ranges may experience troubles in getting to quality education due to constrained assets and framework. Essentially, students with disabilities may discover it challenging to go to ordinary brick-and-mortar schools ill-equipped to cater to their special needs. In expansion, people locked in in full-time business may battle to adjust their work commitments with conventional tutoring. In any case, the multiplication of online instruction stages fueled by innovations such as ChatGPT has made quality instruction available to all, independent of location or individual circumstances. Online learning offers understudies the adaptability to memorize at their claim pace and from any area, empowering them to harmonize their learning interests with other duties, counting work and family commitments, without compromising their individual or proficient lives. Besides, the execution of instruments and directions computer program enables teachers to tailor the instructive involvement to the individual needs and interface of each understudy. Inquire about conducted underscores that personalized instruction within the classroom contributes to increased inspiration and engagement among understudies.

### **Conclusions and suggestions**

Both OpenAI and ChatGPT are significant developments in the field of artificial intelligence and might significantly affect the education sector in poor nations. This study set out to investigate how OpenAI and ChatGPT might affect the educational system in developing nations. The results indicate that these technologies have the potential to improve student learning outcomes and expand access to information, according to a critical document analytical method that evaluated and interpreted individual records, newspapers, blogs, and books written by hard evidence authors. But care must be taken, and the advantages and disadvantages of technology, including moral issues, must be carefully examined.

According to this study, even if AI has the potential to revolutionize education in developing countries, it is imperative that people engage technology sensibly and with a thorough awareness of its implications. AI's benefits for education should be maximized, while its drawbacks - such as data privacy issues, unequal access to technology, and the requirement that teachers upgrade their knowledge - should be minimized. Future suggestions call for more investigation to fully comprehend how AI technologies affect schooling in developing countries. Making sure that the advantages of these technologies are efficiently utilized while reducing their drawbacks is crucial. The ultimate objective should be to employ AI to give everyone access to more effective and equal educational opportunities.



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**Authors' contribution.**

**R.K. Karlibaeva** – theoretical substantiation, interpretation of results, data collection and processing, goal setting, literature review.

**G.K. Karlibaeva** – preparation of conclusions and final provisions

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**Образование в цифровой трансформации, его возможности и вызовы для растущей экономики**

**Аннотация.** Заметные успехи были достигнуты в области фейковых идей за последнее время. OpenAI стал первопроходцем в этой области, регулярно инициируя исследования. Диалектное

шоу ChatGPT привлекло большое внимание благодаря своим замечательным возможностям обработки обычных диалектов. Потенциал этого нововведения для модернизации обучения, особенно в развивающихся странах, требует всестороннего исследования его ожидаемого воздействия. Основная цель этого исследования — провести всестороннюю оценку OpenAI, особенно ChatGPT, в связи с образовательной средой развивающихся стран. Используя базовую стратегию проверки записей, это размышление рассматривает точки интереса ChatGPT, включая его способность к адаптивному и персонализированному обучению, его способность предоставлять высококачественное обучение и его организацию поддержки предложения диалектов среди других преимуществ. Это исследование дает полное рассмотрение точек интереса и недостатков, связанных с этим нововведением. Его цель - улучшить наше понимание потенциального влияния, которое оно может оказать на обучение в развивающихся странах, достигнутое посредством широкой оценки ChatGPT.

**Ключевые слова:** цифровое образование, искусственный интеллект, ChatGPT, преимущества, проблемы, растущая экономика, мотивация студентов, общая успеваемость, изменение образования с помощью технологий.

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### **Цифрлық трансформациядағы білім беру: экономиканың дамуындағы мүмкіндіктер мен қиындықтар**

**Аңдатпа.** Соңғы уақытта жалған түсініктердің көбеюі орын алып отыр. Бұл салада OpenAI алғашқылардың бірі ретінде аталып, зерттеле бастады. ChatGPT диалекті шоуы қалыпты диалектілерді өңдеу мүмкіндіктерінің арқасында көбірек назарға алынды. Бұл инновацияның, әсіресе дамушы елдерде оқытуды жаңарту әлеуеті, оның күтілетін әсерін жан-жақты зерттеуді талап етеді. Зерттеудің негізгі мақсаты - OpenAI-ге, әсіресе ChatGPT-ге дамушы елдердің білімдік ортасына байланысты кешенді бағалауды жүргізу. Жазбаларды тексерудің негізгі стратегиясын пайдалана отырып, бұл ой саралауы ChatGPT-тің қызықты тұстарын қарастырады, оның бейімделу мен дербестікке жету мүмкіндігін, басқа басымдықтардың ішінен жоғары сапалы үйрену мен диалектілік ұсыныстарды ұйымдастыруды қолдайды. Сол сияқты мақалада осы инновацияға қатысты қызығушылықтар мен кемшіліктердің толық сараптамасы жасалады. Оның мақсаты - ChatGPT-тің кешенді бағалауымен жеткен әлеуетті ықпалдылық арқылы дамушы елдердің білім кеңістігіне деген түсінігімізді арттыру.

**Түйін сөздер:** цифрлық білім, жасанды интеллект, ChatGPT, артықшылықтар, қиындықтар, өсу экономикасы, студенттердің мотивациясы, жалпы академиялық үлгерім, технология арқылы білім беруді өзгерту.

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