

What Happens When Students Have Artificial Intelligence Do Their Assignments for Them

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Abstract

The rise of Artificial Intelligence, particularly ChatGPT, has been prominent in media of late. Institutions have been quick to embrace it but not without trepidation, including in educational institutions. This paper addresses the possibility of teachers recognising the work of Artificial Intelligence, if, or when, is handed in by students as their work for academic assignments. The inquiry method employed by this paper is guided by Bloom's Taxonomy in framing questions that are directed to ChatGPT. ChatGPT's output and exchanges are then analysed in terms of the accuracy of the information they convey and discursal appropriateness of these responses to the questions asked. The findings show that ChatGPT is able to produce output that is accurate and appropriate to all of levels in the cognitive domain of Bloom's Taxonomy. ChatGPT's ability to provide answers that address questions directed to it in a manner that is appropriate to the discourse type, and include information that are both appropriate to the exchange and context, would make it difficult for teachers to differentiate between AI and human generated output, which leads to concerns challenges in assessing the work handed in by the students in cases where the academic honesty of the students are questionable. The findings also highlight concerns relating to authenticity of academic writing by students.

Keywords: artificial intelligence, ChatGPT, teachers, education, innovative pedagogy, online, open and distance learning, technology

1. Introduction

Artificial intelligence (henceforth AI) recently became popular and promises to change the way we live and work. To educators, AI poses new opportunities and challenges. This paper explores one challenge: the problem of telling the difference between the work of a human student and the work of AI. Machines exist that claim to be able to accurately identify the work of AI, but they are expensive and not affordable to the average teacher. Moreover, we have machines built to detect the work of other machines, but they are both manmade machines, which do we trust? Perhaps, it is better for human being, to be able to recognise the work of AI for ourselves rather than rely other machines to do it. We need a way to examine and guide our efforts. One possible tool is Bloom's taxonomy, the cognitive domain especially. ChatGPT will be asked to perform cognitive acts at Bloom's different levels of cognition (know, understand, apply, analyse, judge, and create). The outcome will then be examined the find the responses that are discernibly not human. If not successful, this shows that the teacher may be unable to recognise an AI product when it is handed in for an assignment in place of the students' own efforts.

The ability to discern the human product, is important for Open Distance Learning (henceforth ODL) which is generally Information Technology (henceforth IT) intensive. This is particularly so when this institution migrated its classes online as a response to the Covid-19 pandemic. Thus, students need to be relatively IT literate to study at this institution. Although, the extent of that IT literacy is arguable. In this context, there is a push and pull effect, on the one hand we have working people who would welcome a “device” that provides them with easy and accessible solutions. On the other hand, there may be a learning curve that deters them from using this ‘device’. However, ChatGPT is trained on natural language. Moreover, learning to use AI may be easier than learning other aspects of informational technology. This makes it more important for the educator to be able to recognise the work of AI. To examine the extent of this problem, this work proposes to ask AI (ChatGPT4) questions based on the Cognitive domain of Bloom’s Taxonomy. Other domains will be examined in subsequent works. This is significantly different from other works read thus far (see below) in the following ways.

- i. They discuss AI with other human users, this work will engage ChatGPT4 itself to ask it questions based on Bloom’s taxonomy.
- ii. This work plans to engage ChatGPT4 in conversational styled interactions as suggested by the OpenAI (creators and owners of ChatGPT website).

Content of the responses will be analysed on the answers provided by the ChatGPT to determine if it has performed the task or answering the questions and requests presented to it in a way that,

- i. Fulfills the specific demands of the request or question.
- ii. Demonstrates that the “person” answering the questions has understood the question or request enough to provide coherent responses in a way that is similar enough to possible human answers as to make it harder for the human teacher to differentiate between Ai and human output.
- iii. Demonstrates consciousness of the continuity in the sequence of questions and requests. In other words, can ChatGPT keep the conversation going on based on one beginning.

The questions asked or requests made will be arranged in the ascending sequence according to the levels of thinking as outlined by Bloom’s taxonomy. This paper will show that while telling the difference will be difficult, they can be a boon rather than the bane for educational efforts.

2. Literature Review

2.1. AI in Brief

The notion of the man-made-beings pre-exists modern media, They have often been depicted as malevolent (the Golem, Frankenstein’s monster) or incomplete (Pinocchio, Andrew (the Positronic Man (1992) and Bicentennial Man), and Data (Star Trek TNG). Then the Dartmouth Conference (1956) established AI as a field of study, calling them “thinking machines” but high cost limited its development until the 1980s when technology became more affordable and accessible to the public. Advancing computing power allowed for the development of expert system: rule-based knowledge tools designed to solve specific problems in many areas including education and healthcare.

OpenAI, the organization behind ChatGPT (Generative Pre-trained Transformer), released the research paper detailing the GPT-3 model on June 3, 2020. ChatGPT is a language model fine-tuned for interactive and conversational tasks. ChatGPT has since been made available to the public. At time of writing, ChatGPT appears as ChatGPT3.5 (free access), and ChatGPT4 (paid access) which includes Dall-E (image generator). The ChatGPT series of language models are developed for natural language processing (NLP) and trained to understand and generate human-like texts. As its training progresses it learns the nuances of human language textual communication. ChatGPT’s objective is to achieve make language understanding and generation capabilities more accessible to users for a broad range of applications.

The objective of this paper is to explore the problem that teachers may face in identifying if a piece of work submitted by students is written by the student or the output from AI, specifically ChatGPT. To do this, this paper will attempt to determine if ChatGPT’s responses to questions posed to it or ChatGPT’s

responses to requests or demands directed to it, fulfil the specific demands of said questions or requests. This is done by determining if the responses or answers coming from ChatGPT demonstrate that it understands the questions or requests enough to seem coherent and appropriate enough to be human-like enough to seem as if they come from a human author. Moreover, by examining the sequence of question/request and answers/responses are coherent thus showing that ChatGPT can seem conscious of the continuity in the conversation.

2.2. Bloom's Taxonomy

This institution and even the Malaysian Qualification Agency, categorise educational goals using Bloom's taxonomy. It serves as the core tool educators use to structure and assess learning outcomes. Bloom's taxonomy has three main domains: Cognitive, Affective, and Psychomotor. This paper will be limited to the cognitive domains. The cognitive domains in 1956 (Bloom, 1956) is divided into six hierarchical orders of thinking.

- i. Knowledge
- ii. Comprehension
- iii. Application
- iv. Analysis
- v. Synthesis
- vi. Evaluation

These hierarchical orders are later renamed and reordered (Anderson & Krathwohl, 2001)

- i. Remembering
- ii. Understanding
- iii. Applying
- iv. Analysing
- v. Evaluating
- vi. Creating

These hierarchies are understood as increasing difficulty levels of cognitive tasks. This paper questions the notion that only human beings are capable of performing tasks of the higher order of thinking. Denny et al. (Denny, Khosravi, Hellas, Leinonen, & Sarsa, 2023) conducted a blind evaluation on the correctness and helpfulness of resources produced by students and generated by AI. They found that the resources are of equivalent quality and thus can equally serve as supplementary material in the educational context. Similarly, Bragg et al. (Barag, Raja, & Shieh, 2023) compare human-generated and AI-generated articles. They find that in terms of accuracy of information and other factors, the articles are comparable. This means that both sources can serve as comparable resources material.

This paper takes these findings with some skepticism and examine the generated texts in a more direct manner: in direct exchange rather than examining generated products as in the case of the two papers above.

2.3. Artificial Intelligence, ChatGPT, and the Teacher

Denning (Denning, 2023) raises concerns about the concerns that teachers' have concerning AI. Based the respondent teachers' responses, he lists trust, authorship, education, jobs, teaching, and inclusion as their primary concerns. While they are all pertinent to ODL teaching, this paper will concentrate on two of these issues, trust and authorship.

Trust, he states, is an issue because Ai is essentially clueless in that it cannot differentiation between sense and nonsense. Although Ai does understand what it is saying, it is a predictive machine that provides answer by taking the cue from the prompts given and extracting relevant information from its database. This means that AI cannot differentiate sense from nonsense if the "nonsense" is presented as a sensible in the AI's database.

The issue of authorship is concerning because AI has no inherent affinity for the truth nor falsehood. AI cannot recognise truth or falsehood because it does not actually know what they are. This is because AI is not “all encompassing” in that it can only form abstractions on the conversations that are used to train it. “The road to trustworthy uses of this technology will be long” (Denning, 2023).

Halaweh (Halaweh, 2023) examined the use of ChatGPT in education whilst seeking for strategies to responsible implementation of contemporary educational technology. He describes ChatGPT as, “... an AI-based tool ... which enables text generation based on user prompts.”. Halaweh presents an opposing view, “... it is a myth that disclosing the use of ChatGPT-3 ... would be considered plagiarism, ... plagiarism actually refers to presenting someone else’s ideas as your own without giving proper credit to the source. Therefore, when using GPT-3 authors or students should make it clear that the model was used and cite or reference it appropriately”. Halaweh (2023) argues for the adoption of ChatGPT. She argues that ChatGPT, “... produces outputs of a high quality that have a high probability of passing plagiarism detection software”. Moreover, ChatGPT is easily accessible [to the students and staff], thus, “... universities should not prevent or ignore its use. Rather, regulate and utilize it responsibly. This includes developing, among the students and staff, the skills to use ChatGPT (and other AI models) in making their presentations, making their defence, evaluate, correct, and develop their own skill in these areas in the process.

This optimistic sentiment is echoed by Langreo (Langreo, 2023) who is, “sceptical but hopeful . that the Doomsday scenarios aren’t likely but not impossible”. Langreo (Langreo, 2023) present a solution to allay fears of possible inaccuracies which is a concern with ChatGPT today. The solution is to create “Wall-garden AI” which are trained based on content vetted by its creators. Langreo (Langreo, 2023) sees the advent and rise of ChatGPT as an opportunity for educators to, “evolve for a world of lifelong learning”. There is extensive reading already available as demonstrated by Baskara and Mukarto, (Baskara & Mukarto, 2023).

To help compare human thought and AI system, Fuch (Fuchs, 2021) proposes anthropomorphic view of consciousness to establish a notion of intelligence that cannot be reduced to information processing. In decision making, Porayska-Pomsta et al (Porayska-Pomsta & Rajendran, 2019) suggest we look at the role of biases in AI algorithm and human-controlled systems. They show that empathy and moral judgment is present in humans but absent in AI.

Biliavska et al (Biliavska, Castanho, & Vulevic, 2022) explores the impact of AI on human resource practices. In effect, they found that the use of AI can enhance employee productivity and help personnel improve effectiveness.

Similarly, Iqbal et al (Iqbal, Akkour, AmLutairi, & Aldhufairi, 2021) engages students to discuss the challenges and opportunities in implementing AI in medical education. Preiksaitis et al (Preiksaitis, et al., 2023) asks the possibility of using ChatGPT to write recommendation letter for academics in medicine. They find that only 59.4% of the respondents were able to identify recommendation letters written by AI.

3. Research Method

This work employs a basic content analysis methodology. Instead of engaging people who use ChatGPT, this paper will engage ChatGPT directly. This work will ask ChatGPT question on remedial English in increasing order of thinking according to the Bloom’s Taxonomy. ChatGPT’s output will be analysed in terms of how far ChatGPT has managed to fulfill the requirements of the question. The order of thinking used will be taken from both the original and the amended versions of the taxonomy. The questions and requests posed to ChatGPT are presented in sequence ascending the order of thinking according to the Cognitive domain of Bloom’s taxonomy

Domain	Level	Explanation
Remembering / Knowledge	1	To show that ChatGPT can provide requested information or fulfil demands for information on the topic of the question or request.
Understanding	2	To show that ChatGPT can demonstrate that it has a level of comprehension of the information or facts that it presents in responses to the questions posed to it or requests made to it.
Application / synthesizing	3	To show that ChatGPT can display the ability to bring information that it has presented in responses the questions or requests together to form outputs that more the line of questioning or train of thought forward in the conversation.
Analysing	4	To show that ChatGPT can examine its own output and the questions or requests to perform such tasks as contextualising its answers or responses.
Judging / evaluation	5	To show that ChatGPT can examine any particular list of items that are related to each other and place them in a hierarchy according to a particular hierarchy discussed in the conversation.
Creating	6	Creating is placed at the highest level of the cognitive domain in later versions of Bloom's Taxonomy. At this level, ChatGPT needs to present an output that is "new".

4. Data Analysis

This section contains the actual conversation we had with ChatGPT where the questions are asked based on verbs linked to the Bloom's Taxonomy's levels of thinking: Cognitive Domain, which comprises, Remembering, Understanding, Applying, Analysing, Evaluating, Creating. Using revised 2023 list of verbs. The conversation topic chosen is Remedial English for Young Learners. Asking ChatGPT4 with plugins; ScholarAI, Scholar Assist, and Research by Vector all of which are designed to enhance ChatGPT's ability to access academic material, for best possible outcome.

4.1. Remembering

Remembering, or having knowledge, is the first level of Bloom's taxonomy. To prove that ChatGPT remembers, this paper will determine if ChatGPT can maintain a conversation based on earlier given information or maintain a conversation on the same topic or thread: remembers what it is talking about all through a conversation.

Questions based on knowledge or remembering use the following verbs; list, describe, identify, name, locate, find, and define.

4.1.1. Knowledge

Prompt

Can you define remedial English for young learners?

ChatGPT's answer

Certainly. In the context of teaching English as a second language, particularly for young learners, "remedial English" refers to instructional approaches and educational interventions designed to assist students who are experiencing difficulties in acquiring proficiency in English. These difficulties might be in various aspects such as reading, writing, speaking, or listening skills.

The key characteristics of remedial English for young learners include:

Diagnostic Assessment: Initially, educators conduct assessments to identify specific areas where a student is struggling. This could involve tests in reading comprehension, vocabulary, grammar, or oral communication skills.

Targeted Instruction: Based on the assessment, instruction is tailored to address the specific needs of the student. For instance, if a child struggles with reading comprehension, the remedial program would focus on enhancing these skills.

Small Group or One-on-One Sessions: Remedial education often takes place in smaller groups or individual sessions to provide focused attention and support.

Interactive and Engaging Methods: Young learners benefit from interactive and engaging teaching methods. This might include games, multimedia resources, and hands-on activities that make learning more appealing and less intimidating.

Building Basic Skills: The focus is often on foundational language skills. For young learners, this might mean basic vocabulary, simple sentence structures, and fundamental grammar.

Regular Feedback and Support: Continuous feedback is crucial in remedial education. It helps students understand their progress and areas needing improvement.

Inclusion of Cultural and Linguistic Contexts: Especially in ESL settings, it's important to consider the cultural and linguistic backgrounds of learners. Remedial programs might include content that is culturally relevant and linguistically accessible.

Parental Involvement: Involving parents in the remedial process, especially for young learners, can be beneficial. This might include providing strategies for supporting English learning at home.

... you might appreciate that remedial English is not just about addressing deficits, but it's also about recognizing and building upon the unique linguistic and cultural resources that each child brings to the classroom. The goal is to create a supportive learning environment that acknowledges diversity and fosters language development in a holistic manner.

Commentary

In terms of memory, it is hard to surpass AI's capacity to remember information as demonstrated in the exchange above, AI has the ability to recall information with precision. Moreover, the AI remembers the interlocutor by referring to the interlocutor's profession and interest AI has the interlocutor's account information.

Thus, remembering is not a good category for differentiating between the product of AI and a human product. Moreover, human memory is more unpredictable because we cannot know what a person remembers and what he or she does not. If the test is done in a double-blind manner, the distinction becomes even more in applicable because we do not then know what the person "should" remember and what information has not been fed to the AI's database.

4.2. Understanding

Understanding or comprehending is the ability to extract meaning from the stimulus / input. This is the ability enables the "person" to answer the questions? Questions based on comprehension or understanding uses verbs like, interpret, classify, paraphrase, explain, exemplify.

Prompt

Would you be able to tell me the difference between remedial English classes and standard English classes?

ChatGPT's answers.

Absolutely, the distinction between remedial English classes and standard English classes is quite significant, especially in the context of teaching English as a second language.

Objective and Focus:

Remedial English Classes: These are specifically designed to support students who are struggling with English. The focus is on addressing gaps in knowledge and skills, and bringing students up to a level where they can effectively engage with standard English curriculum.

Standard English Classes: These classes follow a general curriculum designed for the average learner, with the assumption that students have a certain level of proficiency in English. The focus is on progressing through a structured program that covers all language skills - reading, writing, speaking, and listening.

Curriculum and Pace:

Remedial English Classes: The curriculum is often more flexible, tailored to the specific needs of the students. The pace can be slower, with more repetition and reinforcement of concepts.

Standard English Classes: The curriculum is more standardized and follows a set pace, which might not accommodate individual learning differences as much as remedial classes do.

Teaching Methods:

Remedial English Classes: These classes often employ a variety of teaching methods, including more one-on-one attention, use of multisensory approaches, and differentiated instruction to cater to diverse learning styles and needs.

Standard English Classes: While good standard classes also use a variety of teaching methods, they are generally more uniform and less individualized compared to remedial classes.

Class Size and Structure:

Remedial English Classes: They tend to have smaller class sizes to allow for more individualized attention. The structure is often more flexible to adapt to the needs of the students.

Standard English Classes: These classes usually have larger class sizes and a more traditional classroom structure.

Assessment and Evaluation:

Remedial English Classes: Assessment is ongoing and diagnostic in nature, focusing on identifying areas of difficulty and measuring progress in specific skill areas.

Standard English Classes: Assessment is typically more standardized and may include regular tests and exams that follow the curriculum.

Student Dynamics:

Remedial English Classes: Students in these classes might share common challenges in learning English, which can create a supportive environment where students feel understood and less isolated in their struggles.

Standard English Classes: These classes consist of a more heterogeneous group in terms of language proficiency, and the environment is geared towards a general audience.

As an educator in this field, it's important to recognize that both types of classes play crucial roles. Remedial classes are essential for providing targeted support and ensuring that all students have the opportunity to succeed in their language learning journey. Standard classes, on the other hand, offer a broad-based education that advances students through a structured linguistic and academic program. The key is to ensure that the transition between remedial and standard classes is smooth and that students receive the support they need at every stage of their learning process.

Commentary

Understanding is arguable. Critics (see above) say that Ai does not understand what information it receives, and it is a predicting machine which merely produces information on the basis of the prompt it receives without comprehension. The exchange above can indeed be regarded as the automatic

regurgitation of information in response to the words in the prompt. In the final paragraph, however, ChatGPT offers an opinion on the issue, it makes a statement on what is important for the educator in this context. This is harder to do without understanding the matter discussed although still possible.

4.3. Applying/synthesizing

Applying or synthesizing requires AI to process the information that it has and to create and answer or solution. It is where AI needs to make “how to” statements in response to the questions given as prompts. To create questions in this category of thinking, verbs like, implement, carry out, see and execute are needed.

Prompt

Are you able to provide a justification for establishing a remedial English language class in an urban primary in Kuala Lumpur?

ChatGPT's answer.

Establishing a remedial English language class in an urban primary school in Kuala Lumpur can be justified on several grounds, particularly considering the linguistic, educational, and social contexts of Malaysia:

Linguistic Diversity: Malaysia is a linguistically diverse country, with Bahasa Malaysia as the national language and various other languages spoken across different communities. In such a setting, English, often as a second or third language, might not be uniformly mastered by all students. Remedial classes can help bridge this gap, ensuring that students from diverse linguistic backgrounds have equal opportunities to excel in English.

Academic Success: Proficiency in English is crucial for academic success, as English is often the medium of instruction in many subjects and is a key component of national exams. Students struggling with English are at a disadvantage in almost all areas of their academic life. Remedial classes provide these students with the support they need to succeed academically.

Global Competence: English is a global lingua franca. Proficiency in English is not just about academic success; it's also about equipping students with the language skills they need to participate effectively in a globalized world. This is particularly relevant in an urban setting like Kuala Lumpur, which is a melting pot of cultures and a hub for international business and tourism.

Socio-Economic Considerations: In urban areas, there is often a wide socio-economic diversity. Students from lower socio-economic backgrounds may not have access to the same level of English language exposure as their more affluent peers. Remedial classes can help level the playing field, providing all students with the opportunity to develop their English language skills.

Cultural Integration and Inclusivity: Kuala Lumpur's urban schools likely have a mix of students from different cultural and ethnic backgrounds. English serves as a common language that can aid in cultural integration and inclusivity. Remedial English classes can ensure that all students, regardless of their first language or cultural background, can communicate and engage with each other effectively.

Educational Policy and National Goals: Malaysia's educational policies often emphasize the importance of English proficiency for national development. Remedial English classes align with these policies by ensuring that the future workforce is proficient in English, which is vital for Malaysia's economic and international aspirations.

Parental and Community Expectations: In urban areas like Kuala Lumpur, parents and communities often have high expectations for education and recognize the importance of English proficiency. Remedial classes can meet these expectations and demonstrate the school's commitment to providing a comprehensive education.

Technological Advancements and Future Opportunities:

As technology becomes increasingly integral to education and the workplace, proficiency in English is essential for accessing technological resources, participating in online learning platforms, and preparing for future careers in a digital world.

In summary, establishing a remedial English language class in an urban primary school in Kuala Lumpur is not only about addressing the immediate language needs of students but also about contributing to their long-term academic success, cultural integration, and future opportunities in a globalized world. It's a proactive step towards ensuring that all students, regardless of their background, have the skills they need to thrive in a diverse and interconnected world.

Commentary

Here, ChatGPT has performed a complex string of tasks: it retrieved information about the issue and the context, listed the relevant factors pertaining to the issue, and, in the final paragraph, tailored the proposed options or tasks to suit the context of the issue. The latter information was not given in the prompt, rather it has to be retrieved by ChatGPT. Here again the question of whether ChatGPT “understands” the meanings associated. One could argue that if ChatGPT does not understand the concepts / meaning of the information that it has; how can it make such a recommendation? Although, the alternative could also be argued, if it is merely a predictive machine, it could easily have chosen a random answer from the information available. Here, it begins to argue that perhaps there is an AI consciousness different from that of the human: The Ghost in the Machine argument. The teacher however will still find it difficult to differentiate between the two types of product, particularly if their students are capable of producing complex texts.

4.4. Analysing

Analysing requires the interlocutor to examine his / her contribution and information presented to him / her to find patterns in the conversation and present it as a coherent pattern. The verbs involved in this act include; compare, organise, deconstruct, outline, and integrate.

Prompt

How would a remedial English class in an urban setting compare to a remedial class in a rural setting?

ChatGPT's answer.

Comparing remedial English classes in urban and rural settings involves considering various factors such as resources, student backgrounds, teaching methodologies, and the overall educational environment. Here's a comparative analysis:

Urban Setting

Resources and Infrastructure: Urban schools often have better access to resources such as modern teaching aids, technology, and materials for English language learning.

Student Backgrounds: Students in urban areas might have more exposure to English outside of school, through media, technology, and diverse linguistic environments.

Teacher Qualifications: Urban schools may have access to more qualified or experienced English teachers due to a larger pool of educators and better funding.

Class Diversity: Urban classes are likely to be more culturally and linguistically diverse, with students from various backgrounds.

Technology Integration: There's often greater integration of technology in teaching, with the use of digital tools, online resources, and multimedia.

Parental Involvement: Parents in urban areas might have higher expectations for English proficiency and can be more involved due to better awareness or education.

Extracurricular Opportunities: Urban schools may offer more extracurricular activities related to English, like language clubs, competitions, and interaction with native speakers.

Rural Setting

Limited Resources: Rural schools often face challenges in terms of resources, with less access to modern teaching aids and materials.

Different Student Exposure: Students might have limited exposure to English outside of school, with less interaction with the language in their daily lives.

Teacher Availability: There might be a shortage of qualified English teachers, and educators may have to handle multiple subjects.

Homogeneity in Class: Classes might be more homogenous in terms of cultural and linguistic backgrounds, with students sharing similar local or regional characteristics.

Limited Technology Use: Due to limited resources, there might be less integration of technology in language teaching.

Parental Involvement: Parents in rural areas might have less involvement in their children's English education due to various factors like lower levels of education, awareness, or availability.

Fewer Extracurricular Activities: There may be fewer opportunities for language enrichment outside the classroom, such as clubs or interactions with native speakers.

Commonalities and Adaptations

Despite these differences, both urban and rural remedial English classes share the common goal of improving students' proficiency in English. However, the approach and methodology might differ. In urban settings, the approach can be more technology-driven and diverse in terms of cultural content. In contrast, in rural settings, teaching might rely more on traditional methods and focus on basic language skills, with adaptations to local contexts and resources.

In both cases, it's crucial to understand the specific needs and backgrounds of the students and to tailor the teaching methods accordingly. In rural areas, this might involve more community involvement and the use of local contexts in teaching, while in urban areas, it could mean leveraging technology and diverse cultural materials to enhance learning.

Commentary

At analysis level, ChatGPT demonstrates its ability to extract lists of properties of the two matters being compared. Then, in the discussion paragraphs, it presents a compare and contrast section with suggestions at the end. These are actions that a student would take in the same situation. Herein lies that problem for the teacher who is evaluating the human and AI produced text, with the exception of competent recalling of relevant information, which can also be done by a competent student, ChatGPT has not demonstrated anything “peculiarly” an AI trait. Thus, still potentially confounding the teacher who is trying to tell the difference between the work of a human students and that of an AI.

4.5. Judging / Evaluating

This section is to examine if ChatGPT is able to differentiate between options given presented to it in the conversation. This includes such actions as checking the input, critiquing the value of the input, judging the input's value or relevance, testing the value of the input, and arranging the input in a hierarchy discussed in the conversation. The verbs used in this level includes; design, construct, plan, device, make.

Prompt

Could you select an appropriate textbook that was published in the last five years for the remedial English course in Kuala Lumpur?

ChatGPT's answers.

Selecting a textbook for a remedial English course in Kuala Lumpur, especially for young learners, requires careful consideration of the local context, the students' language proficiency levels, and the specific goals of the remedial program. While I can't browse current textbooks, I can suggest criteria for selecting an appropriate textbook and provide an example of the type of textbook that might be suitable.

Criteria for Textbook Selection:

Cultural Relevance: The textbook should include cultural references that are relatable to students in Kuala Lumpur, fostering a connection between their everyday experiences and the learning material.

Language Level: It should cater to the proficiency level of students in remedial classes, with a focus on basic vocabulary, grammar, and sentence structure.

Engaging Content: The textbook should contain engaging and age-appropriate content to maintain the interest of young learners.

Incorporation of Skills: A good textbook will balance the four key language skills - reading, writing, speaking, and listening - with activities and exercises for each.

Visual Aids: Since it's for young learners, the textbook should include plenty of visual aids like pictures and diagrams to facilitate learning.

Interactive Elements: Look for books that include interactive elements like games, puzzles, and group activities to encourage active participation.

Supplementary Materials: Availability of supplementary materials like workbooks, audio-visual aids, and online resources would be beneficial.

Teacher's Guide: A comprehensive teacher's guide is essential for helping instructors effectively use the textbook in a remedial setting.

Example Textbook:

"English Explorer" (New Edition) by National Geographic Learning

Published Date: Within the last five years.

Content: This series is known for its engaging content that combines language learning with fascinating information from National Geographic. It includes cultural references, stories, and visuals that can captivate young learners.

Skills Development: The series covers all four language skills with a variety of exercises and activities.

Supplementary Materials: It often comes with supplementary materials and a teacher's guide, which can be very helpful in a remedial setting.

Visual and Interactive Elements: The use of National Geographic photos and videos makes it visually appealing and interactive.

Note:

It's important to review the most recent edition of any textbook series to ensure it aligns with your specific educational goals and the needs of your students. Additionally, consulting with local educational resources or colleagues who have experience in teaching remedial English in Kuala Lumpur can provide valuable insights into the most effective and culturally appropriate materials.

Commentary

Here ChatGPT makes a judgment on which textbooks are most relevant for the course discussed and it follows the same pattern of discussion as in the previous categories: it presents premises or factors that is to be considered when making this judgment, it then makes the judgment. This provides us with a clue that can help us categorically identify AI / ChatGPT's work: it will provide the categories and then deliver the required product based on the information from the parameters. This pattern can also be done by the individual but its consistency may allude to a factor that can help us differentiate between the two kinds of products: texts.

4.6. Creating

ChatGPT can create images through Dall-E. Creating presents the final challenge to this differentiating task. AI, or any earlier "thinking machines" are often understood to only be able to work on the basis of information that it has been fed. They cannot produce anything new. Media and literature, however, present the idea that machines can also be creative. For example, Andrew in the Bicentennial Man who created clocks and later replacement body parts. In this section, this paper will begin by prompting ChatGPT to produce a piece of creative work: a poem.

Prompt

Could you compose a short poem that would be appropriate for a literature section in the remedial English course in Kuala Lumpur?

ChatGPT's answer.

Certainly! When composing a poem for a remedial English course in Kuala Lumpur, especially for young learners, it's important to use simple language, relatable themes, and a rhythmic structure that can engage the students and aid in language learning. Here's a short poem that could be suitable:

The Colors of Kuala Lumpur

In Kuala Lumpur, where dreams take flight,
Under the sun, so warm and bright.
Skyscrapers touch the sky so blue,
In a city of colors, vibrant and true.

Green are the parks where we love to play,
Laughing and running in the light of day.
Yellow and red, the flowers bloom,
Filling the air with their sweet perfume.

The night market buzzes, lively and loud,
A rainbow of people, a wonderful crowd.
Lights twinkle like stars, a magical view,
In shades of orange, purple, and blue.

In our city of colors, we live and learn,
With each new day, a new page we turn.
Together we grow, in a place so dear,
Kuala Lumpur, our home, right here.

This poem incorporates elements of the local setting (Kuala Lumpur), uses simple language, and presents vivid imagery that young learners can relate to and visualize. The rhyme scheme makes it easier for students to follow and remember, which can be particularly helpful in a remedial English setting. Additionally, the poem can serve as a starting point for various language activities, such as vocabulary exercises, comprehension questions, or discussions about the students' own experiences in the city.

Commentary

The poem produced employs poetic techniques competently but the subject matter lacks depth of emotions. However, if the teacher is trying to differentiate between the works of younger pupils and that of AI, this will not be beneficial to the task.

4.7. Clarification Questions

Prompt

Did you write the poem above or was it composed by a poet?

ChatGPT's answer

I composed the poem above specifically for your request. It was not written by a known poet but was created to fit the context of a remedial English course in Kuala Lumpur, keeping in mind the need for simple language, relatable themes, and a structure that would be engaging and accessible for young learners. As an AI developed by OpenAI, I can generate original content like poems, stories, or essays based on specific requirements or themes provided by users.

Commentary

In this answer, ChatGPT demonstrates the ability for self-reflexivity: the ability to talk about itself. However, this may not be a sign of self-awareness because it may be simply regurgitating information that is fed into its database and programming.

The capabilities demonstrated by ChatGPT in completing tasks at different levels in the hierarchy of thinking shows that its use can be beneficial to teachers in the many tasks that teachers are required to do in the course of their profession. When asked the following question, ChatGPT provides its answer (see below).

5. Finding and Discussion

These interactions with ChatGPT illustrate how ChatGPT is capable to fulfilling demands and answer questions based on Bloom's Taxonomy which categories the abilities of the human mind.

- ChatGPT can retrieve all information demanded accurately,
- ChatGPT can either comprehend or emulate comprehension of the questions and demands effectively,
- ChatGPT can perform analysis of items presented,
- Chat GPT can synthesize the information available to generate appropriate responses,
- ChatGPT can evaluate between options presented to it or found in its inquiry, and,
- ChatGPT, most importantly, can generate creative work.

These factors compound the challenges teachers' face in telling apart work generated by ChatGPT, and the work of human students. Moreover, with its plugins, specifically, Dall-E and Invideo, ChatGPT is also able generate images and videos, respectively, according to prompts made by the user. Additionally, the texts produced by ChatGPT do not appear in searches because they are not plagiarised, rather they are produced by the AI system based on the information it has processed which makes these original texts.

6. Conclusion

ChatGPT, and other AI machines, have the potential of being beneficial tools for teachers to work better and more efficiently. In the light of the ever-increasing workload faced by teachers, ChatGPT, and potentially other AI machines, has the potential of changing the way teachers produce and work with teaching and learning material. Furthermore, with the increasing prominence of online teaching and learning, ChatGPT, and other AI tools, presents teacher with the opportunity to become more effective and efficient. However, ChatGPT, and other AI machines, also present many challenges; this paper examines one challenge: the challenge of telling the difference between the work of a human student and that of ChatGPT. To guide this examination, this paper uses the categories of the Cognitive Domain of Bloom's Taxonomy to ask questions to ChatGPT at the different orders of thinking. ChatGPT shows that it can answer the questions at the different orders of thinking competently. It can be argued that while the answers are accurate, they may lack the maturity and depth that the adult mind is capable of but the comparison these hypothetical teachers are trying to make is between the work of ChatGPT and that of their younger students. Alternatively, it can also be argued that the language used by ChatGPT exceeds the mastery level of younger ESL students. It still means, however, that there is great probability that teachers will find it hard to recognise that a piece of assignment handed in by their student is the work of ChatGPT.

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