

AI in the Classroom An Educational Enigma

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Résumé de l'article

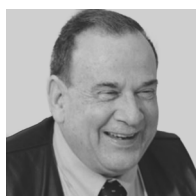
Il y a un dilemme auquel sont confrontés les enseignants en classe à tous les niveaux en éducation : l'IA s'avérera-t-elle un irritant mineur avec des conséquences relativement gérables ou, à l'inverse, l'IA est-elle un changement majeur qui modifiera fondamentalement l'éducation dans son ensemble ? En réalité, la question de l'IA est vaste et pourrait avoir des implications fondamentales pour tous les apprenants et les enseignants. À bien des égards, nous utilisons tous actuellement l'IA à des degrés divers en classe (grammaire en ligne, Google, Wikipédia, etc.) . La préoccupation majeure n'est pas l'existence de l'IA, mais comment ses implications nombreuses et variées pourraient-elles être gérées de manière réaliste dans le cadre d'une salle de classe ? Quels plans de match et quels échéanciers ont été établis en termes de formation pour faire face à l'IA dans le contexte scolaire ?

AI in the Classroom

An Educational Enigma

"The integration of Artificial Intelligence (AI) into the classroom has the potential to revolutionize the way students learn and teachers teach" (Melo, 2023, page 2).

"Artificial intelligence (AI) is the most disruptive technology innovation of our lifetime" (Jyoti, 2022, page 1).



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These two opening quotations highlight the emerging dilemma faced by classroom practitioners at all levels throughout the education structure. At base, will AI turn out to be a minor irritant with relatively manageable education consequences or, on the other hand, is AI a major game changer that will fundamentally alter the overall educative process? In the following prefatory 'think piece', we focus specifically on what has been identified as the most invasive conundrums that will impact all levels of society including, but not exclusively, public school classrooms.

Realistically, the issue of AI is spacious with possible fundamental implications for all learners and teachers. Further, concerns may yet to be identified and unintended consequences, both positive and negative, will no doubt emerge. Nonetheless, a review of the existing shifting research literature base has identified several broad areas of concern.

In many ways, we are all currently using AI to varying degrees in the classroom. For example, every time we plug into a grammar and spell check, or another language tool, or even speak to Amazon's "Alexa", the underlying concepts of AI are providing guidance. Further, students using their cell phones in the classroom or logging on to laptops may well be encountering AI aspects.

Additionally, to what extent have "Google" and/or "Wikipedia" already been blemished by AI? Therefore, to some educational thinkers, the issue of AI in the classroom is moot as we have already arrived at that juncture. In their minds, the major concern is not the existence of AI but how might its many and varied implications be realistically managed within a classroom setting?

The discussion surrounding AI is further clouded by public media reports that often highlight emerging difficulties without engaging in deeper discussions. These apparently increasing stories taint the debate and influence meaningful classroom concerns. For example, a recent Canadian Press (2023) story, "Artificial intelligence: CEGEP teachers want training", noted that as AI becomes increasingly prevalent, CEGEP instructors need additional training so as to detect and deal with plagiarism. Noting that AI can be both a potential drawback as well as an interesting pedagogical tool, CSN union president Caroline Senneville wondered what game plans and timelines have been established to deal with AI.

On a slightly larger scale, CNN showcased the concern of US author and *Publishers Weekly* columnist Jane Friedman and her contention that books had been written in her name without her knowledge via AI (Duffy, 2023). These volumes were being sold on Amazon with similar titles to her own publications. However, the texts were not hers, she denied authoring them, and postulated that AI had written the volumes. Amazon has removed the identified tomes and has promised an investigation. What might be disconcerting, however, is Friedman's assertion regarding this AI intrusion "is that this can happen to anyone".

What is AI?

What exactly is meant by AI? If there are too many definitions, or if the possible applications are too wide, then understanding and management become strained. Perhaps the following comprehensive definition postulated by UNICEF, and widely accepted by member countries, will offer a framework:

"AI refers to machine-based systems that can, given a set of human-defined objectives, make predictions, recommendations, or decisions that influence real or virtual environments. AI systems interact with us and act on our environment, either directly or indirectly. Often, they appear to operate autonomously, and can adapt their behaviour by learning about the context" (UNICEF, 2021, page 16).

In a recent article in *Forbes*, columnist Bernard Marr (2023) identified fifteen significant general "risks" associated with the development of AI. While not necessarily specific to school classrooms and public education, Barr's musings offer an overarching template of challenges that all citizen-educators must ponder. More specifically, how will these concerns impact the learning environments in individual classrooms?

1. Lack of transparency: how might AI come to its conclusions and is that process transparent?
2. Bias & Discrimination: whether by design or fault, can AI perpetuate material that can be viewed as one-sided and/or slanted?
3. Privacy: what protections exist for the safety of personal data?
4. Ethics: is it even possible for AI to prioritize ethical constraints?
5. Security: can AI secure its data such that hackers cannot access and manipulate sites?
6. Power: will AI be dominated by a few powerful companies thus concentrating influence?
7. Dependence: will critical thinking and individual efforts stagnate?
8. Function Displacement: what teaching roles and other education functions are at risk?
9. Economic Inequality: will only selected stratum of society benefit from AI?
10. Legal Challenges: are our existing rules, regulations, procedures, and laws sufficient to monitor and control AI?
11. Arms: will AI hasten military development?
12. Loss of Human Connectivity: will increasing use of AI diminish human attributes such as empathy and trust?
13. Misinformation & Manipulation: with a society already dealing with accuracy of information, will AI simply aggravate rather than stabilize?
14. Unintended Consequences: will lack of human oversight lead AI into arenas not originally envisioned?
15. Existential Risks: what guiderails can be imposed that keep AI within acceptable human imposed limits?

Il y a un dilemme auquel sont confrontés les enseignants en classe à tous les niveaux en éducation: l'IA s'avérera-t-elle un irritant mineur avec des conséquences relativement gérables ou, à l'inverse, l'IA est-elle un changement majeur qui modifiera fondamentalement l'éducation dans son ensemble? En réalité, la question de l'IA est vaste et pourrait avoir des implications fondamentales pour tous les apprenants et les enseignants. À bien des égards, nous utilisons tous actuellement l'IA à des degrés divers en classe (grammaire en ligne, Google, Wikipédia, etc.). La préoccupation majeure n'est pas l'existence de l'IA, mais comment ses implications nombreuses et variées pourraient-elles être gérées de manière réaliste dans le cadre d'une salle de classe? Quels plans de match et quels échéanciers ont été établis en termes de formation pour faire face à l'IA dans le contexte scolaire?

This is an extensive list, but the sheer size and breath must not deter meaningful discussions anchored within the educational sphere. Every one of our students, regardless of current grade levels, will be emerging into their new world where AI will play an increasingly significant role. Therefore, elementary and secondary classroom teachers must embrace the coming changes and begin to adapt classroom rules and procedures to account for AI intrusions while, at the same time, maintaining the sanctity of the learning and evaluative processes. Along with the already noted and yet-to-be discovered concerns related to AI, the singular one that must be uppermost in the minds of all teachers is "plagiarism".

Now, let's be clear, plagiarism is a concern now even without the full impact of AI. However, it is definitely going to become a significantly more serious issue as AI develops over the next five to ten years. At base, how can educators know that the academic work handed in by a student is that student's effort and the individual has not received substantial input from any outside sources?

The anecdotal evidence is beyond questioning: every day teachers receive student assignments that are clearly far and above what that individual has demonstrated to date. Perhaps less of a concern in specialized academic disciplines, for example, physical education and drama, the incidents of suspected plagiarism abound in more traditional academic areas such as, but not exclusive to, English, mathematics and history abound and often make for interesting staff-room gossip. Nonetheless, the input of parents and/or older siblings or even outright copying from the Internet cheapens the evaluative scene.

The Oxford English Dictionary (2001) simply defines plagiarism as:

"The action or practice of plagiarizing; the wrongful appropriation or purloining, and publication as one's own, of the ideas, or the expression of the ideas (literary, artistic, musical, mechanical, etc.) of another" (volume XI, page 947).

An interesting linguistic sidebar is that the word was first uttered by Baron Edward Montagu in 1621 while challenging a political colleague. At base, in the contemporary vernacular, plagiarism is stealing. It is the act of robbing such that individuals may claim credit for what is not actually theirs. In academic and educational realms, plagiarism is one of the most serious of "academic crimes" as it strikes at the very heart of the honesty of the educative process.

Insulating the Classroom :

While it is clearly impossible to separate any learning space from the evolving world, there are several strategies that teachers can employ almost immediately that will somewhat minimize AI and other outside influences. The following five suggested strategies may not always be easy or convenient to implement but, in their totality, these tactics will help to mitigate the influence of plagiarism and will strengthen a code of academic excellence amongst the students.

Specific grade levels and academic disciplines matter! Clearly, plagiarism will be much less an issue with, say, a grade 1 second language class, while the grade 9 or 10 English class may be ripe for possible negative intrusions. This is where the art and skill of an individual teacher's scope and mold any proposed schema into a realist regime for specific teaching duties.

A. "Traditional" or "normal" homework is a thing of the past. That is, assigning swaths of questions or activities from a workbook or worksheet lends itself to outside input. Any work done at home, or anywhere outside of the security of the classroom or school, is prone to influence from parents, older siblings as well as AI. Therefore, all such assigned general academic endeavours are to be avoided.

For example, even assigning a seemingly neutral task, such as, "write a reflection on chapter two of novel X" may be compromised due to the capabilities of AI.

B. "Targeted" homework is encouraged. General assignments: such as, read the next chapter in the novel or read Act II, Scene III, are quite acceptable as such "reading" activities are not as reliant on AI as others. It is possible that a poor or lazy reader may rely on an audio book and/or film or even an aspect of AI, but such an intrusion is not as damaging as other AI actions.

Further, specific homework where AI may simply be of little use is to be encouraged. For example, questions grounded in the Quebec Education Plan (QEP) and/or specific student texts are unlikely to be within the AI data banks. Mind you, parental input is always possible even in these situations.

C. In-class independent work must be encouraged. Academic activities carried out within the classroom are generally safe from outside influences. Even paired and small group student work is to be limited as the teacher's goal must be to ascertain individual achievement and not any kind of group consensus.

D. Regular individual testing must be carried out! While weekly in-class mini-tests may be inconvenient and dependent on students and curriculum, a minimum of bi-weekly evaluations have to be scheduled. These examinations are not arduous or lengthy and targeting academic highlights is quite acceptable. Such a regime actually accomplishes other purposes, not the least of which is to have the students become comfortable with various testing regimes.

E. Each school, with the support of respective school boards/service centers, must establish a program for regular in-school formal testing. Such evaluations should occur at the end of specific units/themes and, if appropriate, prior to scheduled report card issuance. Teachers must not look upon such testing as an intrusion or a chore; rather, these examinations are one way to guarantee that the results can be attributed to a specific student.

Depending on grade levels and the academic disciplines involved, this suggested evaluation regime will be modified to meet the pedagogical philosophy of each teacher. Schools cannot insulate themselves from AI! The best that individual teachers might be able to handle is to establish protocols and procedures that will somewhat shield and secure the evaluative process.

Continuing Discussion :

AI is going to become more and more invasive. This march to maximize possible AI capabilities is driven by factors out of the hands of individual classroom educators. Some directives might well be imposed from the highest levels of the Ministry, while others emanate from local school boards/service centers. However, the lone classroom teacher does indeed monitor and control their own sacred learning sphere. Therefore, this means that practitioners must not throw their hands up in despair but establish realistic structures that protect and enhance student evaluation.

Importantly, all teachers need to be vigilant regarding that one major area where they do indeed have the critical voice. That field is plagiarism.

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