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AN ARISTOTELIAN CRITIQUE OF GENERATIVE AI IN EDUCATION

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This paper contends that trying to maintain a positive outlook on the possibilities afforded by Generative Artificial Intelligence in the education sector would not be well-founded, given a careful study of Aristotle's Nicomachean Ethics. Whereas it has become common to hear the claim that an approach through virtue or character formation is the best approach regarding AI, this paper attempts to view Gen AI as a tool whose value would have to be assessed like all potential external goods on the basis of its likelihood of either promoting or inhibiting human excellence. We thus explore here the significant epistemic, ethical, and pedagogical considerations at work in the Aristotelian text and arrive at stark contrasts between, on the one hand, ideal characteristics of human flourishing and, on the other hand, the dubious ontological and epistemological grounds of AI use, its inherent tendency towards inequity and ingratitude, and its promotion of ease and efficiency at the cost of true learning.

Keywords: Aristotle, Education, Generative AI, Virtue Ethics

INTRODUCTION

As popular use of ChatGPT escalated through the latter part of 2022, understanding of Artificial Intelligence (AI) shifted from its being some esoteric and futuristic enigma from science fiction into an efficient and even indispensable tool that simplifies work in various fields and sectors (Kilinç and Keçecioğlu 2024, 47-48). This form of AI, dubbed "Generative," is designed to analyze patterns and themes from existing sources (i.e., textual linguistic sources, such as documents, but also images and videos and music) such that upon being prompted by the user, it can anticipate what is being asked of it, and thereby generate desired output that resemble human-made products (Ray 2023, 124-126). Early warnings of the potentials - both good and bad - of AI in education (Miao et al. 2021, 13-24) have become even more pertinent given the currently extensive, and one might even say increasingly pervasive use of AI in education that has developed over the past few short years.

Let us consider the various opportunities afforded by ChatGPT (and other similar Gen AI tools), to learners, educators, and researchers. Learners can make use of ChatGPT as a non-human tutor, one that responds to all sorts of queries; it can also

be used as a guide through solving mathematical equations, improving language skills, and as an aid in technical writing. Educators can use it for, among other things, lesson planning, assessment and evaluation, and personalized student support. Researchers can benefit from it through the ways in which it can polish one's writing, recommend improvements, and summarize earlier work, which is something that can greatly expedite the entire research process (Rahman and Watanobe 2023, 5-15). In the face of benefits such as these, causes for concern have also been raised, which include but are not limited to: (1) possibilities of misuse (i.e., to disseminate false information or fake news); (2) over-reliance, leading to potential lack of proper skills development, such as critical thinking; (3) dependence on biased or even erroneous data sets, the use of which perpetuates the problem, as more content is added to the flawed data; and (4) falling short of the proper rigor and authenticity that are the defining marks of academic integrity (Pisica et al. 2023, 3-5).

While this has led some Higher Education Institutions (HEIs) to simply ban the use of Gen AI, others argue instead that this Pandora's box cannot be closed at this point, and that it would be more beneficial to put forward a policy that promotes responsible use of Gen AI, and to match this policy with strategies that enhance students' skills development. What such a policy and such strategies would look like, however, remain a very open question. It has been suggested that placing an emphasis on virtue could serve as a guiding light for this discourse on AI. However, it again is not all that clear how simply enumerating a wish list of desirable virtues or showcasing some ideas from the ancients, whether Platonic or Aristotelian, would provide guidance. In the meantime, many of us find ourselves faced by moral ambivalence: we are glad the technology exists for our own use, yet wary of how others employ it. We remind ourselves that it must be used 'properly,' even if we cannot quite articulate what that looks like.

The contention here is that this uncertainty on the ethical status of Gen AI use in education is not assuaged by a mere exhortation towards being virtuous or by an unfounded optimism that virtue is the key somehow, without adequately arguing for it. This paper strives to present a more nuanced and neutral analysis of the potential of Gen AI in education through a thorough consideration of three key aspects of Aristotle's Nicomachean Ethics: epistemic, ethical, and pedagogical considerations. The lynch pin for the discussion is the treatment of Gen AI tools as external goods; while the presence of external goods (τῶν ἐκτὸς ἀγαθῶν) is taken as a practical necessity for a happy life (in Book 10, Chapter 8, hereafter 10.8), it is also claimed by Aristotle that such materials are needed in order to do noble or virtuous acts (in 1.8); so for instance, some actual material resources would be needed in order for one to be capable of demonstrating the virtue we call generosity. Now, we might recall here how Kant reminds us at the start of the first section of the *Groundwork of the Metaphysics of Morals* that such materials we call "goods" can actually be bad and harmful in the absence of a good will to wield them. It is in this light that we consider Gen AI from a critical standpoint and consider the question of whether its use, particularly as tools in education, would tend more towards allowing its user an expression of human excellence or its opposite.

It must be noted that our scope here remains limited to considering virtues and vices in the use of Generative AI in the education sector and not engaging the question

of AI use in other fields, nor exploring the possibilities of artificial general intelligence or of artificial intelligence becoming virtuous, or other similar concerns.

A FIELD OF DREAMS

There are a number of various instances in the literature wherein we find it being recommended that the path to virtue is the best approach to take when it comes to Gen AI. We first consider here some contributions from virtue ethics, which I divide into two sub-groups; one I call "nominal" insofar as they are quite limited to naming and listing certain virtues that are deemed desirable; the other can be called more "developed," that is to say, those with a more elaborate picture of what virtue ethics in Gen AI might look like, and yet, in my view, basically sharing that same naive hopefulness of the list-makers of the previous batch. This will be followed by looking into approaches from virtue epistemology, who share the same optimism, just with a focus on those specific traits that might assure successful knowledge acquisition. We then turn to the "quasi-classicists," or those who bring up some aspect of Aristotelian thought in the hope that this would translate into a coherent and positive approach for Gen AI without quite arguing for it.

Among the nominalists, we can start with some developers for Google, who propose that a focus on character is the way forward in ensuring responsible use of AI; they posit that AI managers should use a virtue framework in making decisions on the ethical use of AI, which means appropriating the traditional cardinal virtues of courage, temperance, prudence, and justice, as well as the theological virtues of faith, hope and love (Neubert and Montañez 2019, 4-6). But just how exactly such virtues are to be demonstrated within the context of managing AI is not quite made clear, other than a vague example being offered here and there. Similarly, the use of the cardinal virtues is proposed within the context of approaching issues on AI risks and benefits-taking (Siapka 2024, 111-114). A further variation of this chooses to replace the classical list of cardinal virtues with one derived from a supposed "global discourse," which posits justice, honesty, responsibility, and care as "basic AI virtues" and adds prudence and fortitude as "second-order AI virtues" (Hagendorff 2022, 4-19). Another variation, still, this time specifically within the education sector, posits that generative AI both requires and develops honesty and self-control in students (Haderlie 2024, 61-64), and while we can all agree on the former verb (requires) in that formulation, the claim about the latter verb (develops) is much more dubious. To summarize, what these articles have in common is basically a call: "Wouldn't it be great if we were to exhibit virtues or a virtuous character as we use AI?" And the obvious answer to that is, "yes," while it's not all that obvious how exactly one can bring that about.

A step above the nominalist listings of virtues, one virtue ethics approach recommended is narrative (Hayes 2024, 6-8), in which AI use focuses on our stories of our own selves and of society as we strive to interpret and realize a good life for all, in the pursuit of human flourishing as the goal of virtue ethics, recommending that we take a narrative approach. Meanwhile, an exemplarist approach to virtue ethics (Okamoto et al. 2025, 4-7) proposes that AI might be that which provides answers to medical students' difficult questions on ethics. That AI *could* be used with such

laudable goals in mind - such as narrating our sense of the good life, and answering difficult ethical questions on health issues - is not in doubt; but this still leaves us with two unexamined presumptions: (1) whether AI use *would* be confined to such good motives, or, (2) whether using AI even with such pure intentions would actually lead to good results.

The jump from virtue ethics to virtue epistemology in this context is a small one, insofar as the latter shares that same positive outlook as the former on the possible relation between Gen AI use and the development of virtues, just focusing here on intellectual ones. For instance, it is suggested that within the context of research evaluation, attention must be given during ChatGPT use towards intellectual character traits, such as open-mindedness, intellectual courage, intellectual humility, and intellectual perseverance (Vaccari and Daraio 2025, 95).

Bringing in Aristotle through his influence on Thomas Aquinas, it is argued (Blehm 2024, 24-27) that one's use of Chat GPT should not be at the cost of developing intellectual virtue, of which, for some reason, he focuses on two: open-mindedness and intellectual humility (neither of which is indisputably Aristotelian nor Thomistic). Likewise, referring back to Aristotle and Thomas Aquinas, in a paper whose topic is somewhat tangential to ours, it is urged (Tabaczek 2024, 375-383) that in thinking of the possibilities of developing a virtuous AI, we need to pay attention to both intellectual and moral virtues. For our purposes, the call to consider both intellectual and moral virtues together is one that we will gladly echo here, as we shall see later.

We use the term "quasi-classicist," not in any disparaging sense, but as a label for works which, while clearly inspired by one or more ideas from Aristotle, also tend to incline towards seeing in the classical work an avenue towards a positive assessment of AI potentials, which might not be adequately grounded.

For instance, Karpouzis (2024, 3-4) expresses appreciation of the rich ancient Greek philosophical tradition, but his discussion of Aristotle is basically limited to considering (and in a sense pleading) how AI might help us develop such virtues as courage, temperance and justice, in particular, and develop *phronésis*, or practical wisdom, in general. One, of course, easily recalls here those list-makers we were speaking of earlier, and this is again just following that thread.

Adidi (2024, 64-66) considers *telos*, or end or purpose, as central to Aristotle's philosophy and recommends using this as a point of consideration, in assessing what AI is for (its purpose) and what is the end of human life (flourishing). Introducing *areté* (to speak of human and AI excellence or virtue) and *techné* (as the "how" to match the "why" of the *telos*) adds to the Aristotelian vocabulary without quite providing any more detail on the process or confidence in the end result.

In a similar fashion but perhaps with more volume, the article of Mary et al. (2024, 143-144) takes a number of concepts considered "Aristotelian" - such as *eudaimonia* (human flourishing), *phronesis* (practical wisdom), *polis* (community) and *telos* (purpose) and more - and speculates on how these might be of value in various aspects of AI development, use and impacts.

In a white paper named *The Lyceum Project*, Ober and Tasioulas (2024) envision a three part framework anchored on Aristotelian ideas of human nature (as rational and social), ethics (aimed towards human flourishing) and politics (aimed

towards the common good), which they then posit as a basis for developing and deploying AI as "intelligent tools" that can enhance our ability to flourish as individuals and communities.

The literature on this is a veritable field of dreams, of nice ideas that promise us that by paying attention to virtue or by utilizing Aristotelian ideas, we could very well find that use of Gen AI could be for the good. And it's not that these ideas are wrong, but the fact is that there is so much left unsaid as to how this is all supposed to be realized. To put it another way, we all know how a pleasant scene under soft moonlight might fall to harsher scrutiny in the light of day. In the same sobering spirit, the challenge here is to assess whether it could point in the direction of virtuous Gen AI use when such Aristotelian ideas as are brought up above - *telos*, *polis*, *phronesis*, etc. - are not only mentioned or vaguely construed but are understood within their larger contexts of Aristotle's discussions on knowing and reasoning, on social responsibilities, and on upbringing.

EPISTEMIC

The discussion of intellectual virtue takes place in Book Six of the *Nicomachean Ethics*, and it spells out a difference in the possibilities of excelling in knowing and reasoning, given the differing targets and dynamics of these psychological activities. Aristotle posits that the rational faculty of the human being can be divided into two parts: the first being knowledge (τὸ ἐπιστημονικὸν - translated by Peters as "science" and by both Rackham and Ross as "scientific knowledge") and the second being reasoning (τὸ λογιστικόν - which Peters, Rackham and Ross all translate using the adjective "calculative," which is a term that I prefer to avoid, given its implication, at least in recent use, of mercenary thinking). It is through the first part (knowing) that one is able to grasp and to contemplate on what is invariable, while it is through the second part (reasoning) that one is able to calculate or to deliberate on what could be, that is to say, to think through one's choices given a variety of possible desirable ends to be pursued. In what follows, we elaborate on these faculties and then consider whether Gen AI would be beneficial or inimical to these.

Knowledge

One of the uses of our rational faculties accepts of what is in the world around us, irrespective of how we might prefer them to be. Another use of our rational faculties pursues certain ends and figures out how to do so, based on existing knowledge. We cannot have one without the other. We cannot sensibly pursue a good in the world without knowing what goods the world has to offer. In an example of this that is given at the start of 6.1, Aristotle quips that a person might maintain the general ideal in his ethics that says one should strive to find the middle point between too much and too little - or the so-called "doctrine of the mean" - and yet that wouldn't be very helpful in the context of a patient being sick if that person is not also knowledgeable of which particular medication might actually be effective for the given illness.

And so, we need knowledge that we can call *to epistémonikon* or "scientific." Reeve (2006, 200) helps clarify that this can be further divided into the theoretical sciences, such as mathematics and astronomy (quintessential), and the natural sciences, such as biology and physics (sublunary). Both divisions are of the invariable, that is to say, characterized by a certain stability in terms of what is really out there, with a bit more allowance in the natural sciences for irregularities and aberrations. And while we acknowledge that these do emerge once in a rare while in nature, there is still a certain, predominant regularity in the phenomena that the world gives us, such that it allows us to build a body of knowledge based on what exists. For this reason, knowledge, based on what had been learned prior, could be taught (διδακτὴ) and learned (μαθητόν) anew. In modern parlance, we might speak of knowledge as grasping the facts.

One could go further in elaborating on Aristotelian epistemology (for instance, on how scientific knowledge is obtained inductively, moving from sensible particulars to intellectual universals); one could also go into the logical gymnastics involved in syllogistic thinking. However, they are not all that relevant to the discussion at hand; what matters is the recognition that the epistemology here is operating from the framework we might call positivistic or naively realistic. We will return to this point shortly, but for now, let's set that aside and ask our main question: Does Gen AI help one demonstrate intellectual virtue in the domain of knowledge?

At first glance, this seems to be a clear "yes" as long as one supposes Gen AI to be the platform through which the collated objective knowledge of the world can be accessed. Gen AI allows me to obtain information, gives me the facts, summarizes or simplifies it for my easy consumption, and also provides me with the tools to demonstrate to anyone who might ask (such as a teacher who had given me this assignment) whatever it is that I have learned and now know.

However, we know better than to suppose such knowledge coming from Gen AI to be infallible. It has been observed that Gen AI is susceptible, in varying degrees, to "hallucinations," or to putting forward output that only seems real but has no correspondence with reality (Nah et al. 2023, 11-12). Now, let's say we are assured that the technology is being refined so that such hallucinations become minimal. We still have the problem that we may not assume that an AI tool gives us access to universal and objective knowledge. It is susceptible to bias insofar as *what* it generates is based on finite data sets and *how* it generates is based on algorithms that could easily reflect either the biases and assumptions of the developers who constructed the algorithms the AI tool uses, or the biases and assumptions of the users whose prompts are the starting point for AI generation (Ferrara 2024, 2-3).

Not unsurprisingly, advanced digital tools employ data mostly derived from where digitization of materials happened earlier than everywhere else. Therefore, whether through the sheer mechanism by which the technology was built and functions, or whether it is a matter of intention (and it would be easy to ponder here a conspiracy theory of why some persons might deliberately pursue this), it is inevitable that bias would be present. There is bias immediately at work against those in the margins of this world, either geographically, economically, or culturally. But the bias isn't only a problem against those particular persons in those margins; it is a problem

for anyone in the world who simply uses AI under the assumption that what the AI tool can provide is knowledge of the world in full.

In addition to bias in the building of the data sets, there could also be bias in the very algorithms that direct information generation, that is to say, patterns of connections that are learned by the machine, and are often reflective of the conscious or unconscious biases of those who initially trained it. Altogether, whether deliberate or not, these potentially translate into discriminatory learning experiences (Humphreys 2025, 5-9). Again, as mentioned earlier, this advantages everyone, but more so in a particular way those students from diverse linguistic, cultural, and socioeconomic backgrounds. After all, the claim to universality of knowledge (of what necessarily is, to use Aristotle's phrasing) can be challenged by constructivist or critical approaches, and by perspectives that emphasize the particularity and culture-specificity of other epistemologies (Rodriguez, 2025).

This brings us back to the question of Aristotle's positivism or naive realism. If one construed knowledge instead as something crafted, from a constructivist viewpoint, could there then be an avenue to use Gen AI as a tool beneficially? To be critically cognizant that the output generated by the AI tool is itself a fabrication? An argument could be made for this, but to proceed in such a direction, one should be clear that this is going outside an Aristotelian perspective on knowledge as confidence that what I am given to grasp corresponds simply with what is.

So, while there is potential for Gen AI to be an instrument through which our knowledge is developed, it requires care and circumspection, for it contains in its very basis and its own processes the possible impediments towards knowledge. The issue is compounded by the question of, when I use Gen AI, whether the end result or the end product generated is something that would lead me to an enlightening awareness of what remains to be learned, or to an arrogant presumption of now already knowing, without ever realizing that what I now claim to know might be limited, skewed, or even erroneous.

Reasoning

The second significant use of our rational faculties, *to logistikon*, is commonly translated, as already mentioned earlier, with the word "calculative," which I would rather not use. I wish to say that I prefer the term "deliberative," but that also will run into problems, as we shall see later, because the discussion of Aristotle here is made complex by the fact that Aristotle gives us different terms for different categories under this broad label. So, allow me to stick to "reasoning" for now.

We are told that while the knowing and contemplating part of our rationality simply determines between truth and falsehood in connection to what is, the reasoning part deals with choosing in what way to act in order to achieve a desired end. In one situation, the end might be a particular product to be made (*poiésis*) or a particular action to be done (*praxis*). Making is the domain of art (*techné*), while acting is a matter of practical wisdom (*phrōnésis*). Let's set aside, for now, the former (art) to focus on the latter (practical wisdom).

It is surmised that perhaps practical wisdom (*phrōnésis*) is a matter of one's measured demeanor (*sophrōsuné*) being saved (*sozein*). This term, *phrōnésis,* is

translated by both Peters and Rackham as "prudence," but I prefer Ross' use of "practical wisdom," which better expresses its connection to action (*praxis*), but also because "prudence" is bloated with connotations of caution (prudence) and/or conservatism (prude).

Practical wisdom is described as a matter of being concerned with whatever would be conducive or contributory towards a good life. It attends to the particularities of the various aspects of human life, which include, but are not limited to, the physical (health), the economic (resources), and the political (society). Practical wisdom is at work in how we identify the best ends, and how we determine the means towards those ends. Let us now turn to the various forms of reasoning that work to inform the decision-making of practical wisdom.

First, in 6.9, we have deliberation (βουλήσις - also translated by Peters, Rackham, and Ross as "deliberation"). This is characterized by one's taking the time to arrive at proper conclusions. Aristotle takes great care in trying to define what it means to deliberate well (εὐβουλία). To paraphrase how he describes it, no one would call a train of thought a good one if it crashes in the end into an erroneous conclusion; however, simply arriving at the right conclusion doesn't by itself necessarily equate to reasoning well, in the same way that simply getting lucky in having chosen what happens to be the correct answer in a multiple choice exam is not a mark of good reasoning. Aristotle thus describes it as a certain correctness (ὀρθότης) at work in one's thinking, and that it is prior to one's making an assertion. So, it is not about the conclusion (because then the correctness of one's assertion would simply mean knowing the truth), but it is primarily about the process, and that process still ought to end up in the right conclusion. It is also suggested that quickness or expediency could be taken as a mark of *euboulia*, or excellence in deliberation, but only if the end and the process leading to it are not thereby compromised.

Second, in 6.10, we have understanding (συνετοὺς - translated by Peters as "intelligence" and by both Rackham and Ross as "understanding"). This is not to be confused with knowledge, which, let us recall, is our assertion regarding what is; rather, in understanding, we are dealing with matters that happen to be open to questioning and debate. For example, we could be considering whether it is better for a student to learn from a mentor, or through working on his own. We can easily construe the possible pros and cons of arguing for either position. *Sunetous* is how we consider which option might be the preferable one, given a concrete situation. So "understanding" here involves the capacity to critically discern among contending views about what would best contribute to a good human life.

Third, in 6.11, we have consideration (γνώμη - translated by Peters and Ross as "judgment" and by Rackham as "consideration," which is the term that I prefer to follow, given the potentially harsh connotation of "judging," and another reason that will be discussed below). This is not to say that the term "judging" would be an incorrect translation; after all, Aristotle states that this is all about "judging correctly" (κρίσις ὀρθή). But to judge correctly about what, exactly? Let us elaborate: *gnōme* or consideration is about judging rightly on what is equitable (ἐπιεικές), or what is fair and reasonable in relation to other people. So, to consider well (εὐγνώμη) is to consider what others deserve, and Aristotle adds to this by connecting to it the notion of considering with (συγγνώμη), or as Rackham explains, to consider on the side of

others. For this reason, the Greek term carries with it implications of kindliness (Peters) or sympathy (Ross) or forgiveness (Rackham). Thus, the choice to translate *gnōme* here as "consideration" is because it is linked to the possibility of "being considerate" of another. An analogous linguistic comparison in English is how "thought" allows for "thoughtful"; another one that would be familiar to a Tagalog speaker is the connection between the term *unawa* or "to understand" and the term *maunawain*, which implies "being understanding" in a compassionate way.

Taking these features of reasoning into account, let us return to our main question concerning Gen AI: Would its use be one through which we can demonstrate good reasoning?

Would Gen AI use promote good deliberation (εὐβουλία) in the sense of thinking of not only the ends to be pursued but of following the correct (ὀρθή) processes to get there? Are the speed and efficiency touted by AI enthusiasts a good thing? Take note that we are not referring here to the right process of making use of an AI tool; the issue is whether the AI tool aids us in the thinking process. Insofar as Gen AI can be used as a tool for brainstorming of ideas, perhaps it can contribute to the effort. But when material generated by AI is taken simply and without thought as a finished product, then there is a problem.

Would Gen AI allow us a good understanding (εὐσυνεσία) in the sense of critical consideration of the reasoning and the opinions of others? Again, as above, Gen AI could be used as a tool to bring forward contrasting perspectives for our perusal; however, it could also easily be used in such a way that whatever is generated can be taken in the manner of an authoritarian figure dictating who has the last word.

Would Gen AI allow us good consideration (εὐγνώμη) in the sense of having a fair and sympathetic eye for others, not only in terms of their opinions, but as might affect their real-world concerns? To the extent that Gen AI can increase our knowledge of the human world, of the particulars in the social, economic and political realities of others, particularly the disenfranchised and dispossessed, it may be of value. It is a question of whether it will be used in such a manner. How about others who are closer to home, such as the persons that I actually interact with? It is debatable as to whether the use of Gen AI would encourage or inhibit collaborative work (referring here to humans working with each other, and not the so-called human-AI "collaboration"). But before we even examine the potential social impact of the use of Gen AI, the question can already be raised whether, in Gen AI's very structure, something inequitable or unfair is taking place. For this, let us enter into the question of ethics.

ETHICAL

To say that we will enter into the domain of ethics while in the process of talking about the *Nicomachean Ethics* might seem redundant, but it is the case that certain sections focus on more specific articulations that belong to what we might call an ethical rather than the epistemic concerns that occupied us earlier. We have already seen how Aristotle construes good reasoning as involving being considerate of others, but now let us look into the question of justice.

Justice

First, let us review again how Gen AI works, taking ChatGPT as our main example. ChatGPT is a chatbot trained to respond to prompts, accessing existing data sources on the Internet, and analyzing them, and utilizing them in generating a response or output. The argument has been put forward that in doing this, ChatGPT is generating original work from the amalgam of earlier ones, so this is not a matter of plagiarism (Flaherty and Yurch 2024, 3-4). The argument is based on defining plagiarism as directly reproducing - and claiming as one's own - another's work without proper attribution. Supposing that one agrees that what is taking place here is not a matter of plagiarism, does that mean that there is no problem?

In 5.1, Aristotle takes great pains to first clarify that when we are talking about justice (περὶ δὲ δικαιοσύνης), the considerations may be on the narrower side based on law - of the legal (νόμιμον) versus the illegal (παράνομον) - or on the broader side based on principle - on what is equal (ἴσον) versus unequal (ἄνισον). Now there are all sorts of inequality, some of them being quite benign (e.g., height difference), and so further elaboration is needed to clarify when an inequality can be called "unjust." We can also translate ἄνισον as "unfair," and what 5.1 gives us, in summary, is that an unjust person is one who takes an unfair share of goods.

This is further clarified in 5.3, wherein Aristotle asks us to think of justice as a matter of proportion when it comes to distribution involving four terms. Take two persons to whom goods would be distributed based on merit. Justice is present when both persons (two terms) receive goods (third term) on the basis of merit (fourth term) according to a proper proportion. So equal here does not necessarily mean identical shares. If, for example, the number of hours that two laborers had worked is the same, then the amount of money they are to receive as compensation for their work should also be the same. Whereas if one had worked more hours, then his pay should be correspondingly higher. In this, fairness - and thus justice - lies in the proper distribution; conversely, it would be unfair or unjust for one person to enjoy the benefits - or to suffer the disadvantages - of a disproportionate distribution. The term used by Aristotle in describing such an injustice is, "pleasure that arises from gain" (δι' ἡδονὴν τὴν ἀπὸ τοῦ κέρδους). The "pleasure" here should not be understood as a particular sensation, but the fact that some undeserved benefit is derived; the "gain" in this context is presumed to be an unfair one.

Let us now replace those terms. The first is the author of an original work. The second is a student using Gen AI. The good to be distributed is recognition. The basis is the intellectual and creative effort that went into producing an original work. When a Gen AI tool, prompted by a student user, scans through works available in the database and presents them to the user, most likely without any attribution, isn't there already an injustice here? And this is compounded when an original author - or some original authors - go unrecognized, while at the same time the student is expecting to receive credit for placing the material lifted from other sources and submitting it as his own work, under his name, for a school requirement. If it is the case that Gen AI has rendered traditional notions of authorship passé (Hutson 2025), are we amenable to the idea of the source of an original work not being recognized? Or are we amenable only to others not being recognized for their original work, but would make, as Kant

would put it, an exception for ourselves when we are the author? Are we amenable to the idea of no one being recognized for their original work, but at the same desiring to receive credit for a product produced through the Gen AI tool? Conventional scholarship prior to AI development has required of us the duty of proper attribution to all prior sources that have informed our thinking. This technology, in its emphasis on speed and efficiency, more often than not disregards this concern for recognition altogether. And if and when the technology can be developed such that original authors (sources of generated work) are cited, what would prevent the user from simply disabling that function? So, in its most common operations of appropriating material for its generative work, the Gen AI tool tends to injustice; and insofar as it encourages in the user availing of such an appropriation for his or her own needs, the Gen AI tool serves to perpetuate injustice.

Would attributing authorship to the AI tool or its developers solve this problem? While some have spoken favorably of this approach, the Center of Publication Ethics (COPE 2024) has taken the stance that an AI tool cannot be considered an author insofar as it cannot take responsibility for whatever output it has generated. Also, this approach conveniently disregards how the authors of the works that make up the Gen AI data sets would remain unacknowledged. Much has been said about the need for transparency, and there seems to be general agreement in the literature that transparency about AI use is important, but there are no clear and universal instructions on how this is to be done. Being transparent about his own AI use might alleviate the injustice somewhat insofar as the user seems to eschew taking credit here, but it still does little to afford proper recognition where it is due. Where an AI tool is sophisticated enough as to identify the sources from which its own output has been generated, would citing these meet the demand for just recognition?

Let's imagine a scenario wherein a user reports that he or she had used the Gen AI tool by bringing up these prompts, and also that the Gen AI tool had generated this kind of output, and for the sake of full disclosure, even reports all the sources the Gen AI tool had used in crafting this response. Can we imagine this to be a likely scenario? Perhaps, if one is optimistic enough. But then, to what purpose might one use Gen AI for such an output?

Art

It is at this juncture that one might wish to return to the domain of art (*techné*), or of crafting (*poiésis*), which was the other branch in Aristotle's treatment of practical wisdom. One might try to argue that what matters in this form of intellectual virtue is know-how - simply knowing how to come up with a desired end product - and that would be our only consideration.

On the one hand, one might choose to argue that Aristotle did not specify that the crafting of anything required it being directed by moral virtue, and so one might choose to construe *techné* as a domain of potential human excellence unto itself. Technically, that could be argued. On the other hand, it seems quite an incongruous reading to choose to isolate *techné* from the moral realm for the sake of this argument. It is worth recalling here that at the very start of the *Nicomachean Ethics* (in 1.2), it is claimed that we pursue various goods, various ends, and that knowledge of all these

would be good, but none more so than political science, because over and above the ends or goods for any one man would be the ends or goods for society as a whole. So, this would hardly be the place to extol some kind of quasi-romanticist view of aesthetic excellence that may be divorced from ethics.

An instructive diversion here would be Aristotle's text called "On Sophistical Refutations," in which he assesses forms of equivocal argumentation that we might now call informal fallacies. He posits at the very start that sophists would use this dubious form of reasoning and refutation primarily for their own benefit; and yet, his own agenda is for one to learn about these, not to act as the sophists do, but to have the ability to identify what the sophists do, and to avoid becoming a victim of lousy argumentation. So, the making of arguments can be flawed in more than one sense: in a formal register (not following the proper form of a logical argument) and also in an ethical register (with the motive of winning an argument, through any means, even those deemed unacceptable). And so, the point is made: a technical matter is not simply and without thought to be removed from its potential ethical implications.

Furthermore, it should be noted that such an amoral perspective would hardly be one that would be promoted by someone who wants to argue that Gen AI use can be directed by paying attention to virtue. The disclaimer that such a person would suddenly be forced to make here is that what we mean by "virtue" turns out to actually be limited to the excellence of crafting for its own sake, and that's not quite the message that we, and others, had imagined to be desirable at the start. And so, we cannot help but consider from an ethical stance the process and the product of Gen AI. Once again, let us remind ourselves that our topic is not just Gen AI broadly, but more specifically in education.

PEDAGOGICAL

While not being what we might call a formal treatise on education, the *Nicomachean Ethics* clearly is concerned with how we develop into virtue (or vice), paying particular attention, in Book 2, to the question of how we get into the habit of acting in certain ways. The classic circle that was introduced by Aristotle and still significant today in how we think about behavior: how we learn to act becomes a habit, and habits that we formed incline how we are most likely to act. In this way, virtues (or vices) become our own. Thus, the question of how a child is led (*paideia* + *agō* = pedagogy) is of fundamental importance.

The teleological perspective that Aristotle provides us requires us to view what is taking place in education in the light of both its immediate and ultimate purposes. When a teacher assigns a particular output from the students - let's say the completion of an exam, or the drafting of a research paper - what is the purpose behind that? Ostensibly, it is to demonstrate new knowledge acquired or new skills developed; but could there be something beyond that, maybe something more fundamental? In which case, what then happens when a Gen AI tool is used to come up with that output?

With a clear focus now on the question of purpose when thinking about Gen AI and education, let's take a look again at: (1) what Aristotle says about ends in connection to reasoning to decision-making and acting; (2) what Aristotle says about

formation to have the moral strength to choose the best ends; and (3) how education ideally develops us in this direction.

Purpose

Aristotle has taken great pains in delineating how reasoning is prior to practical wisdom and is not yet constitutive of it, insofar as reasoning does not yet have a conclusion, or, to put it another way, a decision has not yet been made. It is the marriage of reasoning and desire that leads to choice, and which in turn leads to action (6.2).

When Aristotle discusses in Book 6 how practical wisdom concerns itself with the proper human goods as ends to be desired, he is echoing an idea that is present at the very start (1.1), which is that all our actions are aimed at some perceived good. One important consideration in this discussion is how goods or ends may be subordinate to others, such that one goal might be pursued, not necessarily for its own sake, but in view of a higher end, and so, for instance, developing one's expertise in military stratagems only has value in view of accomplishing something greater, which is victory in battle.

Why is this relevant to our discussion? In our attempt to assess Gen AI as used by students, we have not yet addressed the question of what is the end in sight. Commonly, a Gen AI tool is used to generate a certain output that would efficiently and expediently meet the course requirements following the instructions of a teacher. But is that a final end, or a subordinate one?

It is only through practical wisdom that one can recognize how a particular output is only a subordinate or an intermediate end, whereas there is, actually, something greater. At the superficial - or we might say pragmatic - level, we can construe that a student's submission of output for a class is only a means towards the end of successfully passing that class, and that, in turn, may be seen as a mere step towards the obtaining of a diploma. For one whose perspective sees the main end as just finishing one's studies as easily and as quickly as possible, then there would be no problem in using Gen AI as a tool towards that end, and to do so with the mindset and intention of getting all these done with the least amount of trouble. From a more ideal perspective, though, the end of a formal education is formative in two regards: (1) of the accumulation and enhancement of knowledge and skills that will be of benefit to that person later in life, most likely in one's chosen profession, and (2) of the development of a disposition that we can generally describe as being of good character.

If one knows this formative goal to be the true end of his education, he will (again, ideally) see his own use of Gen AI in a different light. It has been claimed that the Internet has revolutionized education by making mere knowing irrelevant, with all the knowledge made readily available to us; this has been further exacerbated by Gen AI, with all that knowledge now much more easily accessed, processed, and presented (Herman and Lara-Steidel 2025, 610-614). If knowing, therefore, is no longer the point, the emphasis must turn to learning how best to know, and learning how best to reason, and learning how best to learn. It is also a matter of developing the habits that would best promote such learning. The question then becomes: how do we best

leverage Gen AI in order to accomplish this? But before that, there is a prior question: how do we develop so that we can identify the best goals to pursue?

Self-Development

Aristotle makes a distinction (2.1) between intellectual virtue and moral virtue, stating how the former is taught and learned, and is obtained through experience and time, while the latter is the result of habituation. Or to be more precise, we develop habits - both good ones (virtues) and bad ones (vices) - on the basis of our having performed actions on a regular basis, and our growing accustomed to acting in that same way. Our intellectual capacities notwithstanding, our attitude towards all things, including learning, is a mark of character.

We are reminded that habituation is rooted in pleasure and pain (Ladikos 2010, 78-82). The intrinsic connection and/or conflict between the two is spelled out (2.3) as a matter of the virtuous man choosing rightly and the vicious man choosing wrongly on what to consider pleasant and advantageous and noble on the one hand, and what to consider base and disadvantageous and painful on the other. And so, to use examples of vice, a coward would prefer the ignoble pain of surrender to the noble pain of honorable death at the hand of an enemy; an incontinent man could become addicted to the intoxicating pleasure of substances while ignoring milder, harmless, everyday pleasures, such as ordinary food.

Within the context of education, the question can be asked: What are the pleasures and pains to which we have become habituated? Striving to understand a complex poem, struggling with a mathematical equation, getting our tongues twisted as we try to learn a new language - is any of this (or consider other examples) something that has given us any pleasure? Or was it all just pain? Our answer here may just point us in the direction of how we are most likely (given habit) to feel about and make use of Gen AI. If scholarly matters are a source of tedium or apprehension, I would probably love how Gen AI can allow me to just get it over with as quickly as possible.

Synthesis

Bringing together the two ideas - of identifying purposes on the one hand and developing moral character through pleasures and pains on the other hand - we have a potentially bleak picture when it comes to Gen AI in education. If we simply cannot "see" what our education is for, and mistake intermediate ends for final ends, then we have no reason to use Gen AI in a way other than how it might simply satisfy these lesser ends (such as the thoughtless completion of a class requirement). Even if it is the case that we do see and understand the ideal goal of education, but due to our upbringing had never taken the pains to learn, and instead have always taken the easy route or the path of least resistance, we will, again, most likely use Gen AI in just that way that it eases our perceived burdens.

And the problem is the extent to which Gen AI promises to relieve us of those burdens, in a way that no other educational technology has done before. I am relieved of the burden of trying to think for myself, because with Gen AI, I am just one prompt

away from immediate results. I am relieved of the burden of reading difficult texts, because with Gen AI, they can all be summarized for me. I am relieved of the burden of learning the intricacies of a language, because with Gen AI, this can be translated for me. I am even relieved of the burden of taking good care of my use of my own language, because with Gen AI, matters like spelling, punctuation, and grammar rules are all handled automatically. It is so easy that I can easily get an A or easily get published in top-tier journals (depending on which particular ads you see). But is that the ultimate good?

One can take a positive spin on this. A possibility that educators should consider is how to make Gen AI a tool for authentic learning; this requires a revolution in how we think of learning and assessments of learning, but maybe there are strategies that can make good use of the features of Gen AI in pursuit of this.

Therefore, even more fundamental than the question of whether or not AI qualifies as an external good is the more basic concern of trying to get a student to understand the end or purpose (*telos*) of his/her education, that it is a matter of personal development, for which he/she should understand that the product is himself/herself at the end of the process, and that how he/she engages in that process is crucial to the outcome. Ideally, this would involve a commitment to the truth, to what really is, but also a resolve towards thinking carefully, critically, and empathetically. At the more basic level, it would mean trying to get a young student into a habit of taking pleasure in learning, of finding academic challenges to not only be worthwhile but maybe even enjoyable. Education might not give us all the answers to all our questions, but if children learn early on how to take pleasure in the right things and in the right way, then maybe we can be hopeful about their future (Frede 2006, 269-271). And it is potentially within that context that one might take on a positive view of Gen AI on education.

CONCLUSION

We considered Gen AI tools from the perspective of assessing their potential value as an external good, as material that may contribute to a person's manifesting of virtue, in the way that all tools can and should be assessed. But not all tools are created equal. Some items can be neutral, and their use is what determines if they cause benefit or harm. A syringe could cause either great benefit or great harm, depending entirely on the contents. On the other hand, other tools, in their very function, exist to cause harm, such as guns, whatever justifications of self-defense or crime deterrence might be put forward in their defense; it cannot be denied that the very use of one carries with it the potentiality to cause lethal harm.

Apologists for AI use would most likely not be happy with that last analogy. Presumably, they would prefer we think of AI in more neutral terms, using as an analogy instead some vehicle, like a car or a van, which could certainly cause harm if used carelessly, but also has such great value in transporting persons or cargo. Let us consider this, but let's keep up with the times by taking as our example those new AI-powered self-driving vehicles that have started to appear in some countries. Would you be secure in one of them, confident that the technological advancements are

greater than the potential safety risks? Would you be secure being a motorist out in the street, knowing that everyone else around you is also being driven around by these vehicles? Would you entrust your child being taken to and from school in such a vehicle? This is not intended to put down such vehicles, but if the scenario makes us pause on the side of caution, then my point is that showing a similar (not necessarily equal) sense of care in the consideration of a technology is more appropriate than an unfounded optimism. In the face of how Gen AI seems questionable in terms of its ontological basis (its world of data sets), in terms of its epistemological dynamic (the algorithms and prompts that create the output), in terms of its ethical lacuna (its appropriating without proper attribution) and in terms of its pedagogical challenges (the way it makes everything too easy), it should be clear that simply exhorting people to just display the cardinal virtues while they use AI will not suffice.

Now a reader might suppose at this point that all that's happened here is that the dreams of the optimists have been replaced by an AI nightmare of a pessimist, but that isn't the case; it is not the intention here to prophesy doom. Let us look into how some lessons learned here from Aristotle might provide educators with a way forward when it comes to guiding Gen AI use.

First, the purposiveness of learning is key, and this should be understood in a true teleological sense, not only as a matter of a Gen AI tool crafting specific outputs, but in view of that more fundamental goal of getting students into particular habits that make them most open to learning. Second, the reminder to "judge correctly" (κρίσις ὀρθή) suggests to us the need for a systematic rigor in learning, and which would include knowing when and where - and how - to use a Gen AI tool, after the "why" question has been answered by the question of purpose. So maybe it would be okay for me to be allowed to use a tool to convert my citations from APA7 format to IEEE, but only after I've actually read those sources and made sure they are incorporated into my paper. Meanwhile, another tool that summarizes those texts for me, such that I no longer bother to read them myself, should be best avoided. Third, paying critical attention is a must to all materials I am confronted with, in general, but perhaps particularly to those generated by a Gen AI tool. In this way, the value of Gen AI output is properly assessed, rather than blithely assumed. Fourth, paying appreciative attention is a plus. By recognizing the social character of human thought, and acknowledging the sources that inform one's own thinking, one better participates in the continuing conversation. This might not fully rectify the injustice of the lack of recognition, but it is a step in the right direction. It also makes one more appreciative when confronted by true originality. Fifth, attitude is everything. If one can get students to take delight in earning something new, to persevere in the face of challenges, to pursue their curiosity, to harness their creativity, to become real learners, then everything else that needs to be said about Gen AI will follow.

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