

Education in the Age of AI

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Subject: Education in the Age of AI: Thoughts from a Former Pupil

Dear Mrs. Nwosu,

You probably don't remember me but I'm a former pupil of Greater Heights. You were my class teacher in Primary 5. That was more than ten years ago! I was happy when one of my cousins, who is a pupil in Greater Heights now, informed me that you are now the Head Teacher. Congratulations!

I have been thinking a lot about how things are going these days, especially in the world of work. Artificial Intelligence (AI) has changed and will continue to change the way we do things. AI is able to perform tasks and produce content that mimic human capabilities and is rapidly becoming a key tool in many professions and industries. AI can be used to provide detailed reports of radiological images and suggest differential diagnoses based on the image, it can be used to write code, it can generate architectural designs just from a text prompt, it can analyse large amounts of data at a fraction of the time it would take humans...and it can also churn out essays and reports. And its capacity to carry complex tasks seems to get better with each passing day.

These capabilities of AI are leading to a redefining of job roles, creation of new job categories and the disappearance of older ones. And all of this is happening at an unparalleled pace in the history of work. AI's ability to automate tasks can also lead to job displacement and in the absence of good reskilling programs, can cause massive rates of unemployment.

These consequences in turn raise questions about how the educational system can remain relevant, since, after all, one of the purposes of education is to prepare children to eventually thrive in the world of work. Hence, the reason why I am writing you this email: I know that you will be interested in anything that will help you give your pupils a holistic education.

Nonetheless, you might be wondering if the children are not too young to be bothered with preparations for the workplace and things of the sort. To this, I will say together with UNICEF that 'early moments matter.' Primary education lays the foundation for a lifetime of learning and personal growth by providing children with essential skills and knowledge. Therefore, this is the best time to start building any skills, attitudes or competencies that a child needs to thrive in the future. As any good construction engineer knows, to build a house that will stand the test of time, you need to invest time, quality materials and effort to erect a solid foundation.

What investments can you make then to prepare children for a rapidly evolving workplace? I have three suggestions: teach them to think critically, help them develop a growth mindset and teach them social and emotional intelligence.

Why is critical thinking important? There's a general misconception that a computer is always right. Unfortunately, this is not always the case. AI can sometimes hallucinate; it can generate false information but present it as correct¹. I heard of an incident of a man who accidentally killed his child because he followed advice from ChatGPT about managing his child's illness.

Hence, it's no longer enough for children to just learn facts; they should be helped to arrive at a deeper understanding of these facts. A situation where teachers get impatient because a child is asking too many questions simply is no longer tenable. To paraphrase Peter Drucker, people are going to be needed to think across all levels of the workforce; critical thinking can no longer remain the exclusive task of top and/or middle management.²

Therefore, children need to be helped to develop this skill as early as possible. One way is through the selection of good literature texts for class readings. I've seen some of the assigned texts that my cousin has read in class for the past two terms and I think that better quality books could have been chosen. A good literature text should feature well developed characters, a compelling plot and should address themes like love, friendship, fear, self-worth, bias, historical events, etc at an age appropriate level. Discussing the book after reading- asking questions about certain choices that the characters or the author made, applying the book to their own lives, etc - can help the pupils develop the higher-order reasoning skills needed for critical thinking. In addition, I have observed that the literature homework that my cousin usually gets is mostly directed at answering fact based questions about events and characters in the book. I think that this was also the case when I was a pupil. Teachers should be encouraged to give homework and tests that require the pupils to think, analyse and make inferences. This will also facilitate the development of critical thinking skills.

Another factor that facilitates critical thinking is having the necessary conditions for it or learning to create them. One of these conditions is the absence of distractions. Therefore, children need to master the art of 'working without distraction on a cognitively demanding task.'³ In other words, children need to learn how to do deep work. As Cal Newport said once in his podcast, 'Concentration is a skill just like any other; the more you practise it, the better you become.'⁴ And to paraphrase another writer on Medium: succeeding in the future workplace

¹ Glover, "What Are AI Hallucinations?"

² Drucker, "The Manager and the Moron."

³ Webb, "What Schools Can Do to Foster Deep Work,"

⁴ Cal Newport, "The Most Important Skill We're Not Teaching Students | Deep Questions With Cal Newport."

‘will require the ability to do deep work, the kind of work that requires humanity to create and will never be replaced by computers.’⁵

Although children might not be able to sit still for long periods of time, the important thing is to start little. I don’t remember having any study time in school as a pupil or being taught how to study. We had Math and English lessons, copied notes in other subjects and had tests. So, you could introduce study lessons for the pupils in upper primary (primary 4-6) where they learn how to study and actually study under the supervision of a teacher. For example, they could be taught to apply the Pomodoro technique. The specific duration of the focus sessions and breaks should be tailored to the needs and abilities of the pupils. During the focus sessions, they can have some difficult Math problems to solve - Larcombe's Primary Mathematics used to be a good source in those days- or have a writing prompt based on a book they've read or a lesson they've had in another subject. Pupils should be encouraged to sit and work throughout the duration of the focus sessions even if 'they don't know how to solve it' or 'they don't know what to write.' Prior to this, they should be introduced to the concept of concentration as a skill that can be learned and that will be increasingly valuable to them as they get older.

In addition, you should also try to get parents on board so that at home they set up guidelines that facilitate deep work - limiting use of smartphones, fostering other hobbies/leisure activities like board games, reading, outdoor sports, etc. This onboarding can be done via PTA meetings, open days, letters included in the end of term or midterm reports. You can also include a copy of this article from Time titled ‘Focus Is The New IQ’⁶; it has some excellent suggestions for parents to help their children practise deep work.

My second suggestion was that children should be helped to develop a growth mindset. They should be taught to prioritise growth and mastery over outcomes. This will help them to be resilient as they will be open to learning new skills in order to thrive in changing circumstances. This attitude is crucial in this AI age in which roles and expectations are constantly evolving. Overemphasising outcomes, on the other hand, can be detrimental to the true growth of the individual. For instance, excessive emphasis on getting good grades as opposed to truly learning can lead to cramming , which is an ineffective form of studying or even to examination malpractice.

With all the hype surrounding the capabilities of AI, there can be a temptation to just want to do things faster and bigger at the cost of one’s intrinsic growth or even worse, the growth of one’s subordinates. Additionally, if people have a purely outcome mindset, AI can easily put them in threat mode and make them very resistant to change. In the long run, these attitudes aren’t helpful.

⁵ Webb, “What Schools Can Do to Foster Deep Work,”

⁶ Newport, “Focus Is the New IQ.”

In his article, *Managing Oneself*, Peter Drucker talks about the importance of feedback analysis. He talks about it in the context of discovering one's strengths and weaknesses but it can also be useful to help children to learn to prioritise growth and processes over outcomes. For example, feedback analysis for a child who scores 50% on a test could look like this: 'Okay, you scored a 50% on this test but the answers you gave to some questions show that you've grasped the basic concepts of topics x and y and most of the questions you got wrong were in this particular area so maybe you need a different strategy to learn those topics. So you can try this other learning method and we'll see how it goes.'

Teachers can also instil a growth mindset in pupils by helping them to change their language. For instance, if a teacher notices that a pupil regularly says something along the lines of, 'I'm just not good at Math' or 'Writing compositions isn't for me', they can help the pupil to reframe and to see this difficulty as a chance to try a different approach, to improve their skills and to cultivate virtues like diligence and fortitude that will be useful in not just this particular instance but throughout life.

Prodigy Education, an organisation that promotes a digital and game based approach to core subjects like Math and English, has an interesting article with more suggestions on how teachers can instil a growth mindset in pupils⁷. I think it's worth taking a look at.

Of course, it goes without saying that developing a growth mindset will require collaboration between teachers and the parents because the child can't be taught to prioritise processes and growth over outcomes at school while his parents are haranguing him over why he isn't first in his class at home.

In a McKinsey article titled, 'The Manager and Machine: The New Leadership Equation', Martin Dewhurst suggests that 'executives in the era of brilliant machines will be able to make the biggest difference through the human touch'.⁸ Even if the technical skills that children learn become outdated, emotional intelligence - the ability to manage emotions, collaborate effectively and adapt to change- will always be relevant.⁹ As Peter Drucker said, to be effective, you have to know the strengths, the performance modes and the values of your coworkers¹⁰. In other words, you have to be emotionally intelligent.

This brings me to my last suggestion: in order to prepare children for a rapidly evolving workplace, you need to harness their social and emotional intelligence.

⁷ Guido, "10 Ways Teachers Can Instill a Growth Mindset in Students."

⁸ Dewhurst and Willmott, "Manager and Machine: The New Leadership Equation."

⁹ Seigler, "Equipping Learners to Be Future-Ready: How Cultivating EQ in Middle School Leads to Success."

¹⁰ Drucker, "Managing Oneself."

I remember that as pupils, we would sometimes be asked to exchange our books after a class exercise and grade each others' work. Usually, the teacher would provide the correct answers or we would take turns to do so ourselves. This feedback process can be structured to promote emotional intelligence by incorporating the TAG framework. This framework includes Telling your partner what you like about their work, Asking a thoughtful question and Giving a positive suggestion for improvement.¹¹ This will require some guidance from the teacher, especially at the beginning but it's an easy way to regularly practise empathy and communication.

We often think that the best way to get a child to realise that something is wrong is by punishing them, especially if they have been warned about the behaviour before. However, sometimes, it might be more beneficial to correct insensitive behaviour by making a joint evaluation with the child of how uncaring behaviour affects others and giving the child an opportunity to make amends. The key thing is to identify moments when the children can be helped to see how their actions affect others and teach them to act in an empathetic manner so that eventually, they'll be able to act rightly without external guidance.

Play is an important part of how humans learn; during sports like football or basketball, children practise decision making and teamwork. Many times, children resort to suboptimal strategies to resolve conflicts that arise on the playground- fighting, arguing, exclusion. Teachers can help by teaching better methods of conflict resolution that will reinforce the kids' social and emotional skills. Games can also be used to teach specific skills that bolster emotional intelligence. For example, in games where there is a process of elimination until one person emerges as the winner, instead of making fun of the person who has been eliminated, pupils can be taught to say, 'Nice one!' or 'You tried' or something along those lines. The ones who are eliminated can also be taught not to take it too seriously and to be happy for the ones still in the game. This helps to foster empathy and resilience. Playworks, a non-profit, has a variety of online resources that help teachers shape play environments that contribute to building children's social and emotional intelligence. I highly recommend looking through their website.¹²

There's one last thing I failed to mention at the beginning but which is very important. You should integrate AI into the educational curriculum: teach about it and teach with it, if possible. The aim is not necessarily to make the children AI gurus but to give them a rudimentary understanding of AI and expose them to it. It's also important to teach them the value of intellectual integrity; that is, not passing off AI's work as theirs. Instead of treating AI generated information as a final product, they should see it as raw material for further work. They should also be helped to assess the reliability of information that they obtain from it.

¹¹ "TAG Feedback."

¹² Playworks, "Playworks - Playworks Helps Kids to Stay Active and Build Valuable Social and Emotional Skills Through Play."

There are other ways that AI can enhance and improve the pupils' learning experience but they would require staff, stuff, space and systems that I don't think that the school has at the moment.

Nonetheless, a lack of resources shouldn't be an excuse to do nothing. For instance, the school would need technical infrastructure like reliable internet connection, hardware capable of running AI software, data storage systems, and cybersecurity measures.¹³ To get these, the school can apply to corporate organisations to provide some of these facilities as a way of carrying out their Corporate Social Responsibility. You can also seek funding from NGOs - both local and international. With just the infrastructure and trained staff, you can already carry out a good digital literacy program. Then you can pursue collaborations with other schools that have successfully implemented AI - within/outside the country- and tech companies to create a blueprint to successfully implement AI in the school.

Artificial Intelligence is here to stay and is going to cause even more disruptions as time goes on. As an educator committed to training children who can thrive on the global stage, I'm sure that you want the pupils in your care to be able to thrive in this new age (of AI) and to make meaningful and sustainable contributions to it. I hope that you will find my suggestions useful in achieving this aim.

We can schedule a meeting if you would like to discuss this topic further. It would be a pleasure to meet you after so many years.

Sincerely,

A handwritten signature in cursive script, appearing to be 'eto'.

¹³ All4Ed, "Demystifying Artificial Intelligence (AI) for K-12 | All4Ed."

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