AI Implementation into the Icelandic Education System:

An Overview

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GAME CHANGER

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Introduction

Digital rights have never been more vulnerable. Despite years of advocacy, our dignity and fundamental freedoms online are increasingly at risk, whether due to platforms prioritising profit over safety, or leaders misunderstanding the realities of digital life. The true disruptor, however, is artificial intelligence. In just a few years, AI has reshaped every aspect of society, raising urgent questions about how we protect rights, ensure equitable development, and integrate these systems without sacrificing human autonomy. What were once hypothetical concerns have become some of the most pressing challenges of our time. I have long been invested in the digital rights of youths, as my generation is the first to grow up online and to navigate the complexities of digital citizenship from childhood. As AI becomes embedded in education, a space already defined by digital tools, we must ensure both its benefits and its risks are understood. Iceland is already a frontrunner in this work. We have an AI Action Plan, we are one of the first countries to provide teachers with AI tools, and we have a dedicated community striving for safe and ethical AI implementation. In this article, I explore how AI is being integrated into Icelandic schools, who is driving the work, what progress has been made, and where improvements are still needed.

This article serves as a review of the current situation with AI integration in the Icelandic education system as of May 2026. Much of the information I discovered comes from interviews with stakeholders and industry professionals, including staff at government ministries, staff at the Directorate of Education and School Services, educators, and children across ages 13-19. I recognise that due to AI's rapid development, by next month this article could very well be outdated. Despite this, the underlying issue, making sure AI implementation is safe and ethical, remains the same, and therefore my findings and recommendations may continue to serve as a guideline for AI implementation for years to come. My hope is that officials and AI professionals in Iceland can look at this article to have a better idea of how to approach this challenge, and that other countries can have a detailed overview of the situation in Iceland and gain insights from it. Therefore, it is written in English.

AI Implementation in the Education System

The education system may stand to gain much from the implementation of AI. Experts across fields highlight benefits such as more individualised learning for students, easing teacher's workload, faster and more in-depth learning which then leads to more time for personal passions, and having a better understanding of technology which will be useful for years to come. Likewise, experts have pointed out as many risks, including data misuse and privacy breaches, loss of independent and critical thinking, human intelligence being outsourced to AI, loss of communication and social skills, and complete dependence on AI. There are loud voices on each side of this spectrum, some believe that AI will transform our world into a utopia while others believe it will be our doom. The challenge for governments is to strike a balance between optimism and realism to allow AI development to improve our society, in the case of this article our education system, where it can be improved, while remaining aware of risks and setting structures in place to mitigate them.

This is not a simple task, especially as the Icelandic public has much to say on this development. In a survey done by Fjölmiðlanefnd and Netvís, Iceland's Media Commission and the Safer Internet Center, results showed that 44% of Icelanders believe that our democracy is put at risk by AI, 80% believe that AI will increase propaganda from foreign countries, 52% are worried about AI's development, and 75% want an increased focus on AI literacy at all stages of education. The Icelandic Teachers Union has also expressed concern, and released a policy proposal for AI implementation in schools. The main points emphasized are that teachers maintain professional autonomy and have control over how or when AI is used in their classrooms, that teachers receive proper training on AI tools, that AI cannot replace teachers and any increased workload caused by AI is compensated for, that personal data and intellectual property is protected, that funding is allocated to develop Icelandic AI to protect our language and heritage, that the Teachers Union is involved in all decisions surrounding AI in education, and ensuring that access to AI tools is equal. Students have also raised issues with AI in their education, as an example one of the proposals made by the representatives of the Reykjavík Youth Council was calling for the creation of an AI policy for elementary schools in Iceland to standardise AI education across schools. Given these concerns, it is clear the public wants clear standards and guidelines regarding AI implementation, the beginnings of which can already be found in Iceland's national AI Action Plan which gives an overview on how AI implementation will take place across sectors.

The first version of the Action Plan was released in 2024, but the newest version was released in 2025, and is meant to last until 2027 although it will most likely be updated sooner. In the current action plan, education has its own section which is named 'Menntun í takt við tímann' or 'Evolving Education' in English, which is then split into three subsections, 12: AI Solutions in the Iceland Education System, 13:

AI and Digital Citizenship in Teaching and Learning, and 14: Increased Public Knowledge and Skills in AI and Data Literacy. Subsections 12 and 13 fall under the Ministry of Education and Children and the implementing body is the Directorate of Education and School Services, but subsection 14 falls under the Ministry of Culture, Innovation, and Higher Education, which is also the implementing body. Subsection 12's objective is to improve education with the use of AI solutions which will be done by testing AI solutions in the classrooms through pilot projects, the success of these projects will then be monitored to produce proposals on the next steps of the implementation. Subsection 13's objective is to ensure that youths learn to use AI responsibly, ethically, and engage with AI tools critically which will be carried out with the creation of standards and guidelines for the use of AI in schools. Lastly, subsection 14's objective is raise interest and awareness of AI in Icelandic society to promote digital skills and data literacy which will be carried out by analysing the needs of diverse groups pertaining to AI and data literacy, and with the creation of an information website that will provide courses and events related to AI and data literacy.

This raises many questions. Firstly, subsections 12 and 13 both pertain to applying AI solutions into classrooms, and they mention the importance of personal privacy and protecting student's and teacher's data, but nowhere in the Action Plan is there a clear strategy for protecting people's personal data. In the premises and context section, it is mentioned that consideration is given to Iceland's international obligations and co-operations with international organisations. As Iceland incorporated the GDPR in 2018, one can assume the Action Plan follows the GDPR in its data protection obligations, but this is not specified. Furthermore, these subsections mention that the use of AI solutions will be guided by ethics and ethical use of AI, but once again there is no specific explanation of what ethical use of AI looks like in practice. Again, in the premises and context section, it is mentioned that they look to organizations such as UNESCO and the OECD for guidelines on ethical, transparent, and human centric AI, but this has two main issues,

1. It presumes that the reader is already familiar with UNESCO's and the OECD's definitions of ethical, transparent, and human centric AI, or puts the reader in a position where they now have to go digging for further information
2. It presumes that these definitions of ethical, transparent, and human centric AI are undisputed and completely accurate, which is far from the case

Such assumptions make the Action Plan weaker, as they lead to confusion surrounding the core strategies and guidelines we look to to ensure safety, therefore, further clarification on these factors are much needed. However, the most positive aspect about the Action Plan is that it is made to be updated, and such

clarifications are in the works. The ministry of Culture, Innovation and Higher Education is currently doing a review of the Action Plan with the intention of updating and improving it, and the ministry of Education and Children is expanding on the subsections on education. Furthermore, the Action Plan supports the government's stated intention to create a strategy for a clear legal framework for AI, which will hopefully be far more detailed and precise in its definitions.

The most important part of the Action Plan are the actions which have been, and will be, taken. The actions outlined in subsections 12, 13, and 14 are as mentioned above, pilot projects in the classroom, the creation of standards and guidelines, and the development of another action plan to support the implementation of new technology and acquiring relevant skills. The AI Action Plan does not highlight the progress of these actions anywhere, but after some investigating one can find some information that pertains to these actions in the action plan, such as the start of a pilot project to give teachers access to AI, but again there is a lack of public information as to the status of this project or what the next steps are. It is due to this ambiguity that I reached out to a plethora of people to better understand the current situation, from the status of the pilot project to what we can expect next. This information can not be found publicly as is, but in this next section I will highlight all my findings and give a detailed overview to clarify where Iceland truly stands in terms of AI integration in the education system.

What is Happening in Iceland?

The Pilot Project

The biggest and most significant project currently taking place in Iceland is the pilot project where teachers in grunnskóli (elementary) and framhaldsskóli (secondary) received access to AI to use in their work, which is being overseen by Miðstöð Menntunnar Skólaþjónustu (MMS) or the Directorate of Education and School Services in English. To take part in the project, teachers had to sign up for it through MMS, teachers in elementary that were approved received access to Google's Gemini while teachers in secondary received access to Anthropic's Claude. There are roughly 300 teachers in each division of schooling that are part of the project. According to MMS's website, the pilot project was set to start in October 2025 and end in February 2026, but after some digging I found out that the project started

in November for secondary school and only at the beginning of the year (2026) for elementary due to difficulties that came up with Google's Gemini. The new end date is set for the beginning of summer. This pilot project is not meant to be thought of as 'AI implementation into the education system' but rather a project intended to evaluate the impact of AI use in education, and how or whether such tools should be continued to be used in the future. The impacts that are being evaluated include whether AI saves teachers time, makes lesson planning easier, and is useful for helping the students learn. It is done in tandem with the teachers, as the core element of this project is to listen to the teachers' experience to find what works and what does not. They did not include children in this project largely because the AI companies discouraged them from doing so, most likely because they feared their tools may not comply with regulations.

The way this is being executed varies slightly between elementary and secondary. They each have different AI tools which function differently, which leads to different experiences with the AI and different capabilities, but the reason for them receiving different AI tools is to be able to compare them to one another and find what works best in terms of user experience. The teachers will then receive regular educational content, or attend educational meetings, to better learn how the AI tool they have received works and how to use it. The educational meetings are held by Google or Anthropic, or by other individuals who are working with these AI tools or around AI in education. Because Gemini and Claude are different AI models the lessons the teachers receive are quite different, but they have the same goal of helping teachers understand how to navigate the AI tool they have access to, and to become more AI literate. What the two tools have in common is that they are used in a secure and managed environment under the supervision of MMS, and of course have to follow strict GDPR privacy agreements. The AI models are configured so that none of the information given to them leaves the country or is used to train the models, and if a teacher is in doubt about using the AI they are given support and guidance by MMS and the AI deployers (Google or Anthropic).

This pilot project is incredibly significant as it is one of the first of its kind. At this point in time, Iceland is the only country to start such a project, wherein a government ministry gives teachers access to AI tools and supervises the teachers use of the tools. Both Anthropic and Google proudly announced this partnership on their websites, and placed emphasis on the importance of this project as it marks the beginning of AI integration into the education system. I might point out, as the European Trade Union Committee of Education (ETUCE) did, that the announcement on Anthropics website is slightly misleading, as it alludes to the pilot project being a full implementation of AI into the education system rather than a stepping stone. Google's announcement makes this aspect of the project quite clear, as it

highlights that this is a pilot project and that only 300 teachers were given access, but Anthropics announcement makes it seem as though all teachers have received access to Claude, and places emphasis on the inevitably of AI in classrooms. This is something that ETUCE director Jelmer Evers expresses concern over as it reveals the pressures that profit driven AI companies are starting to put onto governments to implement AI into their education systems and such pressures can undermine governments democratic control over education.

Nevertheless, this pilot project has been received very positively by both MMS and government officials as well as teachers and the Icelandic Teachers Union. Everyone seems to be in agreement that this project is crucial in Iceland's AI implementation, as it satisfies the needs of teachers to be able to express concerns and learn to use AI tools in a safe and controlled environment, as many are indeed quite apprehensive about AI implementation into the education system. It allows the Icelandic government to get a clearer picture of how AI can be used and how to go about its implementation in partnership with teachers, so no one feels as though their experience or expertise is being undermined, but rather seen as invaluable in ensuring that AI implementation is safe and ethical.

In a conversation with MMS, they emphasised the project's significance and noted that officials from other countries and the OECD had recently reached out to MMS for information. Although I did not receive details about who contacted them or why, it is clear that Iceland's AI efforts are attracting international attention, an unexpected development that has prompted education officials to take greater pride in the project and to focus more seriously on AI matters. When I asked how government officials are engaging with the project and how it relates to the AI Action Plan, they explained that although the Action Plan is somewhat vague, the pilot project is helping define the standards it calls for and shape the next steps, and added that officials have recently begun to fully recognise the importance of AI implementation. As a side-note, this view that government engagement with AI matters has been slow until recently was echoed throughout my interviews with government employees.

The reason why the pilot project focused on teachers was to first and foremost educate them on how to use AI, and to hear their concerns so that we can keep them in mind as we plan the next steps with the implementation, but also get them to the AI companies to help make their AI tools more classroom friendly. This is the core of the project, an exchange of information between teachers, the Icelandic government, and AI companies to find a way to implement this new technology so that it is most beneficial for all. Lack of AI education has thus been identified as the biggest risk in AI implementation in the education system by MMS, as without it we risk mis- and dis-information being spread, fear mongering, critical thinking skills being lost, and harmful AI use being normalised. This is why they

allow teachers first to gain access to AI, not only so they learn to use it in their work, but also learn how to navigate AI ethically and safely overall, a skill that many are lacking, and so that they can then educate the children on navigating AI safely and ethically. They thus believe that AI is here to stay, whether we like it or not, and we can either allow it to seep into our lives without understanding it or having control over it, or we can educate ourselves to engage with it more ethically and safely.

I was given access to the Facebook group which keeps track of the meetings teachers have, recordings, educational content, and is a space where the teachers can express concerns and they may be addressed. Teachers have expressed many interesting sentiments through this page including:

The positives

- AI tools have been useful at making interesting projects and games that the kids respond very well to
- AI tools are helpful at lesson planning and keeping track of educational content they use
- Once they learned to use the AI tools it has made AI less daunting, making it easier for them to approach students' use of AI

Things to have in mind

- Having to change the way they teach to prevent cheating, having more assignments done in class, more presentations, and overall changing what has been emphasised in modern schooling. Moving from working alone to education being a more collaborative project
- Not being a hypocrite, as teachers start using AI tools in their work we can't tell kids that they are not allowed to use it in theirs, rather teach them how to use AI, what AI tools to use for each occasion, and to remain critical of the tools they are using

Concerns

- If students do not get access to AI from their schools/MMS it may create a division between those who can afford an AI subscription, and thus better AI, and those who can not afford subscriptions or do not want to subscribe
- The AI is still far from perfect, it will hallucinate information and its Icelandic is not always strong
- Uncertainty around what happens next with the project as well as general AI implementation into the education system
- The companies whose AI we are subscribing to are profit driven, our interests are not necessarily theirs

The group has 350+ members, which is only around half of the number of teachers who signed up for the project. I have observed that a very small number of teachers are actually active in this group, although many could very well be engaging with the educational content and meeting recordings and not showing that activity in the group. I do, however, find it a shame that over half of the teachers who signed up for the project, and received access to AI paid for by the Icelandic government, are not even part of the group and therefore most likely not properly educating themselves on how to use the AI. This opinion was shared by the project managers for the secondary division, two teachers at Fjölbrautaskólinn í Garðabæ (FG).

They have insight into both the execution of the pilot project as well as the current state of education and students' use of AI in classrooms being teachers and project managers, but their involvement with the project stemmed from a member of staff from MMS reaching out to them unexpectedly, asking them if they would be interested in being project managers, to which they obliged. They were very happy with the pilot projects progress, their collaboration with Anthropic was extremely positive and they felt a lot of support and engagement on their end to ensure that the teachers received in-depth instructions on their tools, and they were quick to respond to concerns such as Claude's Icelandic capabilities, which have improved drastically since the beginning of the project. The collaboration with MMS was also positive as a whole, but their experience was that secondary schools seemed like a slight afterthought, and that elementary is more of a priority in this implementation. Despite this, teachers in secondary who were part of the project overall could say that the project was a success, and that they would prefer to continue to have access to AI tools in their work.

The experience for teachers in elementary school is much the same according to staff at Mixtúra, the city of Reykjavík's Department of Education and Youth's Creation and Technology Center. They have been working on the implementation of AI into Reykjavík's education system and shared that teachers who have been using Gemini have had positive experiences with it, and that they will continue to encourage teachers to take advantage of Gemini in their work. Alongside this, they will continue giving them training on the AI tools and strengthening their AI literacy. This differs with secondary, as elementary schools can easily continue to use Gemini as it is part of the Google education package all elementary schools in Iceland receive, whereas secondary schools have a Microsoft package which does not include Claude. Notably, when I inquired about teachers' AI literacy and their interest in using AI tools, they shared that in the last 6 months since receiving access to Gemini and lessons on AI teachers had become much more interested in AI use in classrooms and aware of the importance of AI integration into the education system. Once again, this underlines the importance of education, as the simple act of allowing

teachers to learn how to use AI tools and increasing their awareness on both the benefits as well as the risks, they have become much more engaged with the matter.

To get a closer look at teachers' experience with the AI tools, the University of Iceland is currently conducting a study on the pilot project. The study consists of two surveys, the first focusing on the teachers' views on, and knowledge of, AI before the project, and how they have begun to use it in their work the first few months or weeks. The second survey then is set to ask similar questions but the participants will fill out this second survey around the expected end of the pilot project so that we have data on what the participant learned and if they became more AI literate. This study is crucial in the continuation of AI implementation into the education system, as it is the first and only official data we have on the progress of AI in the education system, and thus the next steps of the implementation are dependent on its outcome. This is to say, although we have a good idea of how things are going, MMS and the government cannot move forward without having concrete evidence that their efforts are having a positive effect, and they have to have a clear picture of where we might want to do better to adjust the course as necessary, and the data this study provides will be the basis for this. I requested an overview of the data they have from the survey as well as an overview of the questions that will be in the second study but have not received it. But the outcome of the study will be publicly available at the end of the study sometime this summer.

Although the pilot project's main focus is the experience of teachers, I found it imperative to hear the students' experiences of it. I met with two groups of students, the Youth Council (Ungmennaráð) of Samfés which are 14-16 years old in the upper division of elementary, and students at FG which are aged 17-19 in secondary school. First I spoke to the Youth Council, where the students were asked what their experience of the pilot project had been so far, and surprisingly, none of the students in the Youth Council had heard of it. After I explained the project, a few of them realized they had recently begun receiving AI-generated assignments from certain teachers and were being encouraged to use AI tools in their learning. Since they hadn't heard of the pilot project specifically, I can't confirm whether those assignments were part of it, but some students said their teachers were using Google's Gemini to generate the tasks. It's therefore likely that a small number of Youth Council members have already been exposed to the project.

When asked about their thoughts on the project and its effects on their learning, they expressed interest in the development but equally as much concern. Those who had received AI generated assignments had mixed experiences with them, some assignments were interesting and engaging while others lacked a

good level of Icelandic and confused them. Their main concern was the lack of information they had received about this project and about AI implementation into the education system as a whole, as it is their future that is at stake, and voiced apprehensions about the use of AI in classrooms, especially when they have no say in the matter. My biggest concern was that they had received no true explanation as to why they were now being handed AI generated assignments, and that they felt there was little regard for their opinion on the matter. Evidently, I was the first person to discuss the pilot project with them. I voiced this concern to the project managers for secondary school, who responded that if teachers are indeed handing AI assignments to students they should be making it abundantly clear why this is and what we stand to gain from it, and they should place emphasis on getting feedback from their students so they can improve their AI assisted teaching.

I then spoke with 4 students at FG who all had been made aware of the pilot project due to their teachers' involvement with it. They had been given AI generated assignments which they seemingly enjoyed, and had a positive outlook on the use of AI in education, but they were also wary of the risks, specifically that AI could lead to the loss of critical and independent thinking. Their view on AI, both in education and overall, was a lot more positive than the students that were in elementary school, which I found can be attributed to 2 factors. Firstly, they were more involved in AI implementation and thus more educated on it. Being taught by the pilot projects project managers, they had much more information on the use of AI in education and their viewpoint was being heard, unlike that of the students in elementary. They did point out that the approach on AI in class did differ teacher to teacher, but having a group of teachers who were clearly well informed on the topic and put effort into sharing that expertise made AI easier to understand and approach. On the other hand, their positive outlook could stem from them already having accepted that AI use is inevitable. These students have been using AI in their classwork for around 3 years now, which at first was seen as taboo but has become increasingly standard practice, and they do not see a future where they will not use AI. They were aware of the risks AI posed, but it seemed as though they had come to terms with it rather than being worried, and likened AI risks to risks social media pose. Take for example data privacy, they do not worry about AI companies misusing their personal data because they know their data is already being misused by social media companies, so especially when one cannot see immediate damage, why worry? This was in stark contrast to the students in elementary, whose social media presences operate under much stricter parental supervision and guidelines due to age, as they were extremely worried about their personal data being in the wrong hands. Thankfully, the FG students remained critical of the tools they were using despite how normalised the risks are, but there may be cause for concern that if this normalisation of risk continues, our youths may become apathetic to it.

AI Literacy & Education

One of the most important factors of AI implementation into the education system, as mentioned above, is adequate AI education. The goal with AI education is to improve society's AI literacy, but it is imperative that a variety of people are AI literate to ensure a positive AI integration into the education system. These groups include students, parents, teachers, school officials, and government officials. AI education for each of these groups looks quite different, but one can observe such education taking place in Iceland today. Netvís, the Icelandic Safer Internet Center, has been holding AI literacy classes and I spoke to them to learn more about what AI literacy education in Iceland looks like and to learn how far along we are.

Their current focus is seminars for students, but they also offer education for teachers and parents which is equally important. The seminars teach what AI is and is not, how to use it, and how to be critical of it. This is also taught to teachers and parents as they have found that adults have very little idea how children are actually using AI and the dangers AI presents. As an example, he mentioned that many children use character AI, a chatbot that pretends to be a famous character. This sort of AI chatbot is extremely addicting and can be very socially isolating, especially if the user is already struggling socially, as they might choose to only interact with the AI chatbot and it quickly becomes their only friend and outlet. It is therefore of utmost importance that teachers and parents are AI literate, because if they understand this technology they can pass that knowledge along to their children.

In their experience, people tend to think they know much more about AI than they actually do, similar to how people often assume they know how to identify fake news or propaganda, but this assumption can be dangerous because it makes people more vulnerable to being manipulated. In this case, children often assume they know how to navigate AI tools better than they do, and parents assume they know what tools their children are using and how, but such assumptions lead to situations where children use AI tools unsupervised and unaware of how the AI may be affecting them. They pointed out that information children hear at home is what sticks with them most, so if parents are able to discuss AI with their children that is a significant step in the right direction. Similarly, teachers must be AI literate so that the

AI literacy education can continue in classrooms. Unfortunately, Netvís has not been able to focus much on teaching parents or teachers simply because they do not have the time or funding needed.

They also expressed a lack of tools for AI education in Icelandic, and little data on the state of AI literacy in Iceland, so much of the education they are providing is built on their on-the-ground experience with AI or on foreign research. This means that the education they are providing is not as robust as it could be, and that to improve the quality of AI education in Iceland we would need much more data on the current circumstances. Another factor which needed improvement was general access to AI education, as they expressed that they were not able to go as in-depth on the topic as they would want. There are over 150 elementary schools in Iceland and around 30 secondary schools, so getting to all of the schools takes up a lot of time. Add on to that all the other projects they have going on, other seminars, research, international collaborations, and that leaves less room than they would like to focus on AI education and improving AI literacy. Furthermore, their work is influenced by overarching policies around AI literacy, but at this moment the only guideline they have to follow is the AI Action Plan which is far too vague in its current form to provide them with a clear direction. This lack of direction has created a condition in which the path forward is unclear, and the staff members doing the work on the ground are left with little room to improve access to AI education and AI literacy as they feel is needed.

Outside of the seminars Netvís offers, AI education in Iceland is inadequate. Outside of private seminars, which can be very expensive, only a few plans are popping up where AI is being taught, such as the city of Reykjavík beginning to offer its teachers AI education. There does not seem to be any plan to offer all teachers in-depth AI education, or to make AI literacy a requirement for teachers, which could become problematic if not dealt with sooner than later. The same applies to students, AI education or literacy is not a required subject for secondary students, and although AI has been added to the curriculum for elementary school, the actual education students receive on AI is limited. Of course, parents are the hardest to measure in terms of AI literacy as there is no way to require them to learn it, but opinions of industry professionals and the overall lack of AI education opportunities point to parents not being very AI literate. Without a coordinated widespread effort to educate Icelandic society on AI, we risk children having unequal levels of AI literacy, as their AI education will be dependent on how much their parents or teachers happen to know and choose to teach them. This is a big issue to address, as all children have the right to equal access to education, but inequality is already evident.

My conversation with the Youth Council of Samfés revealed that students are already feeling the effects of the lack of nationwide structure in AI education, as their education and experiences around AI in their

classrooms varied greatly. Some students were being encouraged to use AI to help them in their work, others were being taught to be sceptical of AI, and others were outright banned from using it. I found that some schools' AI approach came dangerously close to fear mongering, where understanding was out of the picture and emphasis was placed on negativity. This reflects a larger problem the Icelandic education system is dealing with, that schools across Iceland vary in their teaching, and as such students across Iceland come out of elementary and later secondary school with varying educations. In the case of AI, although all students in the Youth Council were interested in the topic and wanted to learn more, none felt that they were being provided adequate AI literacy education, but most importantly, they were afraid that the difference in their teaching would lead to difference in their intelligence or opportunity. The concern is that those who are being pushed to use AI in their work without proper instruction will lose critical thinking skills, while those who are discouraged from using it will lag behind by not understanding AI as well as their peers.

What is Up Next?

There is significant work underway on AI implementation in the education system. At MMS, staff are developing AI tools for schools, including a database to give teachers and administrators a clearer overview of student progress and to make existing student data more accessible. They have also launched Næstu Skref (The Next Steps) with students from the University of Reykjavík, an AI-powered site that helps young people explore suitable education and career paths. At the Ministry of Culture, Innovation and Higher Education, officials are reviewing the AI Action Plan and plan to merge it with Iceland's Language Technology Programme to protect Icelandic language and culture in AI systems. This priority stems partly from Iceland's early engagement with OpenAI to improve its Icelandic. Following this, ChatGPT's Icelandic language capabilities briefly improved before later model updates reversed those gains, leading to the government now exploring alternative solutions to protect the Icelandic language. Meanwhile, the Ministry of Education and Children has appointed a specialist in AI affairs, who noted that they are also reviewing the Action Plan and have begun meeting with students from Urriðaholtsskóli and the Iceland University of the Arts to teach them about AI and gather their perspectives. Staff in both ministries said their ministers' instructions regarding AI can be summed up in one word: **"**GO.**"**

When one looks more narrowly than the overall government plans to municipalities, schools, and faculty at these schools and municipalities, there is an abundance of AI projects happening across the Icelandic education system. One can mention:

- Menntaskólinn við Sund, a secondary school, partnering with APRÓ to implement the APRÓ AI Viti (Compass) into their system for both students and faculty to use
- Teachers at FG receiving a grant from the Icelandic Teachers Union to do research on AI in education
- Kópavogur municipality receiving a grant to develop a project to support schools in implementing AI
- The city of Reykjavík declaring intentions to support schools across the city in their use of AI in education
    - Creation of AI guide for schools
    - Continuation of AI education
    - Looking into allowing students access to AI, Gemini being assessed by professionals

There is a clear interest in, and sense of gravity over, AI being implemented into the school system, and each area that may be affected by, or have an effect on, said implementation is certainly doing their part to make sure they remain in the loop on these developments. People across all sectors are working toward creating clear standards for AI implementation, and making sure it is safe and serves as a public good. Although separate standards and guidelines being made in each sector can be interpreted as overcomplicating the matter, it is important to remember that different schools and municipalities place emphasis on different things due to difference of circumstance. For example, an elementary school with only youngest and mid-level students (6-12), will have a wildly different AI approach than a school with, or especially only with, a teen division (13-16) due to the students' difference in maturity and ability. Another factor is town politics, as inhabitants of each town vote in a town government with specific policies that they expect to be carried out. Therefore it is important for each town to hold on to a certain level of autonomy when it comes to making their own decisions about what is best for their community. The common goal is of course to approach AI in a way that will allow students and school faculty to reap its benefits while upholding values of trust, safety, fundamental rights, and critical thinking, but their main challenge is finding a way to ensure this.

This brings us back to the AI Action Plan. It is too vague in its current form to provide clear guidance to municipalities and schools as to how to approach this challenge, but as mentioned in chapter 1, it is being revised. There is an upcoming ‘sprettur’, or sprint, in the department of Education and Children where

over a course of 8 weeks they intend to create a comprehensive overview of what policies the Icelandic government will be following when implementing AI into the education system. This should include making clear what criteria we follow for AI to be considered safe, trustworthy, human centric, and upholds fundamental rights. Also, it should make clear what can be done to mitigate the risks AI presents. Most importantly, it should outline how an ethical implementation of AI into the education system will take place, what steps have to be taken to ensure this, and where to turn to to have questions of this implementation clarified. It is only after this revision has been finalised that we can start examining more specific aspects of AI implementation such as what AI tools we choose to use, how we use them, what sort of AI education will be made available, and so on.

What are the Blind Spots?

First, the plan we have on AI implementation is not comprehensive enough. Although it is being expanded on currently, the longer we wait for specific policies and actions to follow we risk individuals using AI unsafely or unethically and pointing to the ambiguity of standards as an excuse. This also creates issues within government ministries and the directorate of education, as there seemed to be confusion about the next steps as each sector was looking to the other for assurance. This much is clear, the Ministry of Culture, Innovation and Higher Education is responsible for AI as a subject and the Action Plan itself, the Ministry of Education and Children is responsible for the subchapters in the Action Plan which pertain to implementing AI into the education system and are tasked with policymaking in that chapter, and the Directorate of Education and School Services is responsible for the implementation itself. However, when further examined, those involved in this implementation are quick to point to one another for answers on how things stand and what to do next. Of course, no one person can be made responsible for this alone, but when staff members of ministries are only given the direction “GO” when it comes to AI implementation they are, for the most part, left to their own devices to figure out what the next steps are. They then look to one another for answers but no one has them, yet.

This issue presents itself quite clearly through the lack of funding for AI implementation projects. After speaking with MMS, I discovered that the main reason that they have such little idea what is up next with the pilot project and further AI implementation is because they have simply run out of funding for such projects. They themselves decided to use funding for digital development on AI projects, and would

prefer to continue AI development, but they are waiting on the Ministry of Education and Children to approve more funding. Similarly, staff at the ministries expressed that they would prefer more people working on AI implementation, and that one of the main reasons they are not able to attend to all the many projects that would help make AI implementation more clear and ethical is because they do not have the time to do so. More funding means more staff members, a network of professionals working together across ministries, more bandwidth to develop and test AI tools, and thus we could better ensure safety and trust.

One of the main factors contributing to low AI literacy is the lack of funding to establish it. While some efforts to improve AI literacy exist, they are disconnected, tied to short-term pilot projects, individual municipalities, or smaller organizations with limited resources, and although these efforts are important, the lack of a national strategy to ensure consistent AI literacy or equal access to education across all schools is an issue. Although AI has been introduced into the elementary curriculum, this alone does not guarantee that all students receive equal AI education. AI education and approaches vary significantly between schools, leading to inconsistent experiences. In some cases, students are encouraged to use AI tools without proper guidance, while in others, access to AI is fully restricted, but this lack of cohesion undermines the goal of building an equal level of AI literacy among all students. The issue is even bigger at the secondary level. The national curriculum for secondary schools has not been updated since 2011 and makes no reference to AI literacy. Given the rapid pace of AI development and the increasing use of AI in society, this is a significant gap. The expectations of the secondary main curriculum do not reflect the importance of digital and AI competency, and as such, ensuring equitable and up-to-date AI education across all levels is crucial.

Lastly, it is disappointing how little students have been involved in the implementation of AI in education, despite being those most directly affected. Minimal emphasis has been placed on student experiences, a gap that can be seen both in how the process has been managed and in conversations with students themselves. Elementary students reported receiving no information about the implementation despite having clear opinions and questions, and lacked opportunities to express their concerns. Secondary students had slightly more information on AI implementation, but this appeared to be due to individual teachers' interest in AI rather than any structured effort to inform or consult them. Current implementation efforts focus almost exclusively on teachers, and while this is essential, it is equally important to include students' perspectives. Notably, research conducted by the University of Iceland

centered on teachers and relied heavily on subjective reflections, leading to limited insight into how students are actually affected. This means key concerns raised by students such as poor Icelandic in AI generated assignments and insufficient instruction on how to use AI tools before being expected to use them are overlooked. The absence of meaningful student consultation is a clear gap in the implementation of AI into the education system. Although stakeholders have expressed intentions to engage with students, this has taken much longer than needed, and given that AI has already been influencing students' learning for months, if not years if we consider when they started using AI independently, there is little reason for their continued exclusion. Students should be informed, consulted, and supported in understanding how AI shapes their education and future. Their perspectives are essential, yet they have largely been overlooked in this process.

Recommendations

Education

All experts on the topic have agreed on one thing, education is the most important factor in ensuring a safe implementation of AI into the education system. This education spreads over a diverse group of people, and looks different for each group. Teachers and school officials have to be educated on how they can use AI to assist them in their work, what risks they have to be aware of when using it, the ethical impact of AI use, and how their students are using AI and likewise what risks they may face. Parents have to be aware also of general AI risks and impacts, but most importantly they must understand how their children are using AI tools and how AI is affecting them. Government officials especially have to be educated on how to use AI and find where it can ease workloads and improve conditions, while also being acutely aware of risks and how we can mitigate them through structures and plans. Lastly, children have to be very well informed on the AI tools they are using, the difference between them, how to use them, the risks to be aware of, how to react when AI tools present risks, and where to turn to for further guidance. Ultimately, as has been highlighted through this article, the outcome of AI implementation is dependent on how educated we are on it.

Although AI education is well underway, there is still a clear lack of action on this front. As shown above, there is a lack of strategy to ensure people are AI literate. As part of this strategy we should outline our criteria for what AI literacy looks like and how we intend to guarantee it.
As an example of criteria, four domains of understanding have been identified as the pillars to AI literacy by Stanford university:

- Functional literacy: How does AI work?
- Ethical literacy: How do we navigate the ethical issues of AI?
- Rhetorical literacy: How do we use natural and AI-generated language to achieve our goals?
- Pedagogical literacy: How do we use AI to enhance teaching and learning?

Each domain has suggested objectives of progressive levels of competency, where most people should have a foundational level of knowledge which they can work their way up from to intermediate or expert level knowledge. Foundational objectives include having access to AI tools and training, being able to identify key AI tools, forming personal ethical positions on topics of AI, being able to evaluate AI outputs, and being able to explore using AI to support learning, but most individuals today are lacking in one or more of these basic objectives. Without these basics we cannot progress to more advanced issues such as being able to develop and coordinate resources, starting efforts to address ethical issues in AI, or being able to assess the effects of AI integration in one's work to inform further pedagogical innovation. Following Stanford's model for AI literacy is not necessarily what Iceland should adopt, but a similar framework to secure AI literacy across our education system is much needed, and clear objectives should be set for teachers and schools to follow.

Then, we must create a clear plan to see this through. This must start with sufficient funding, both to hire staff to oversee the strategy and to facilitate the education across schools. Funding also has to be allocated for further research to gather data on the current situation in schools, find how students are truly interacting with AI, uncover any currently unidentified risks, and map out how to approach the topic in a way that engages students and addresses their needs. To improve AI education within the schools, instructions have to be made for teachers and school officials to follow to guarantee a basic level of AI literacy in their schools across ages, with different criteria for each stage of schooling. The creation of a new curriculum for secondary schools which includes AI and AI literacy is thus imperative. Efforts also have to be focused toward educating the public, especially parents, and place emphasis on the importance of dialogue between generations and remaining informed and critical of the AI tools we use in our daily lives. Most importantly, this plan has to be continuously updated and carried out in a way that reflects

current circumstances, as rapid AI development will mean our standards for AI literacy will see substantial changes in the next few years.

Cohesion

Certain measures to ensure AI literacy are already outlined in the Action Plan and within ministries, and as mentioned they will be expanded on, but limited focus and coordination across sectors have led to slow progress, as is typical of government administration processes. Given the rapid development of AI, stronger effort is needed to implement these measures more quickly, as we do not want to end up playing catch up to AI's development any more than we already are. In a similar vein to improving access to education, to improve government organisation on AI affairs more time and funding would have to be allocated towards such matters. This would lead to more staff members focused on AI matters, reducing the workload strain for staff currently working on AI projects, and allow for more focused work and expansion into additional projects. Furthermore, more staff across ministries, making a network of AI experts and advisors for each ministry, would improve clarity across sectors on AI and reduce ambiguity on how we move forward.

In addition to increased government collaboration, much more collaboration should be realised with smaller institutions such as Netvís, to improve on-the-ground work on AI education and implementation. Smaller institutions that focus specifically on matters of AI literacy and online safety are vital moving forward, as they have specialised knowledge on what is happening in the schools and what aspects need to be improved. As such, government ministries should place more emphasis on including such institutes in their plans to ensure AI safety and literacy. Once again, this is tied to funding and time allocation, as this would mean making up more time for ministry employees to stay in consistent contact with employees on the ground, and more people overall being part of important on the ground initiatives such as providing education or doing research. By improving these factors, increasing collaboration and having a wider network of experts in the field, we can react faster to AI developments and better guarantee that we remain on top of all the latest progress.

Transparency

Finally, there is far too little information and transparency around the implementation of AI into the education system. Starting with public information, there is little to none being pushed toward the public. There are articles here and there about the start of projects, but they lack updates on the current circumstances, and they are not put into the spotlight by the media so most people miss them. Although it may not be possible to have real-time updates on all AI projects in the education system both due to that taking up too much time and effort as well as it potentially interfering with research and data collection, much more importance can be placed on making sure the general public is aware and informed on the general status on AI in the education system. Recently, a new website called 'stadagervigreindar.is', or 'the state of AI' in English, has been developed to have a comprehensive overview on the state of AI development in Iceland. It has 6 main chapters, 1. Government and policy measures, 2. Utilisation and implementation in the workplace, 3. Data security and responsible use, 4. Impacts on jobs and the labour market, 5. AI and the individual, and 6. Icelandic in Foreign Solutions. In the introduction, they make clear the website is to be updated every quarter of the year, and declare intentions to eventually add a chapter on AI in education. The creation of this chapter will be a big step in the right direction regarding transparency and clarity on this topic, but the only thing more important that its creation is its advertisement to the public so they actually know of it and read it.

The most important issue of transparency, though, is that which happens inside the schools themselves. Teachers and students should be informed and continuously updated on the status of AI implementation. This should include being updated on what AI tools are being thought to be implemented into the classroom, what research is being done, what data we have, and the reasons behind AI implementation and how we measure its impacts on education. Students especially have to be more involved in this process. To avoid apathy, we have to make clear that measures are being put into place to protect students and that AI safety is of paramount importance to the Icelandic government, and make sure they themselves are aware of the importance of AI safety. Furthermore, as we can begin to see in the case of the Youth Council, if students do not receive information about the status of AI implementation we risk them becoming apprehensive, which may lead to a loss of trust in the government being able to properly handle this implementation. Though all may be in order on the government's end, if students are not made aware of this they may draw their own conclusions, which are often influenced by foreign information that does not apply in Iceland or fear mongering, leading to anxiety and distrust surrounding AI

implementation. Due to this, students' standpoints must be heard, understood, and addressed so that anxieties can be reduced and trust is ensured.

Final Words

I had hoped to speak to either the Minister of Culture, Innovation, and Higher Education or the Minister of Education and Children about this topic, but both declined to meet me. The former due to the fact that he felt I should rather speak with the latter minister as matters surrounding education are her responsibility, while she declined due to time constraints. A conversation with either minister could have revealed additional perspectives, such as their personal views and future plans. As approval for funding and project prioritisation comes from ministers, insight into their plans would have given a clearer picture on what we can expect and where we stand. Work within ministries, MMS, and on the ground ultimately depend on the actions of those in power. I must say it was disappointing for them to decline meeting me, not only as it meant my research on the topic is not as comprehensive as it could have been, but also as I feel they would have benefitted from hearing a youth perspective.

My generation is the first to grow up with this technology, our experiences with it differ greatly from the generation before us. In some ways, this is positive, we are often more proficient with these tools and have a more thorough understanding of how to apply them in our lives, but in other ways it makes us more susceptible to overreliance or even addiction to them. Opinions on AI vary considerably among young people, but all of us agree on one thing: AI will shape our future. This will affect us and the generations after us the most, so making sure AI develops in the most ethical and beneficial way possible is crucial. We cannot afford making mistakes now, as they may escalate in a way that puts our quality of life at risk. I have found that many of the older generations do not fully grasp the gravity of this, nor do they understand our lived experiences with AI, and there is a clear lack of cross-generational dialogue. Youth's concerns deserve much more attention, and the next steps cannot be taken without our input. Therefore, I hope to see a much stronger collaboration with youths on matters of AI development and implementation moving forward.

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