

The State of AI in Scottish Education: An early report (or provocation?)

**AI for School Leaders
and Policymakers**
26 March 2024

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The project: learning through expert interviews

A study within the larger BRAID project, Towards Embedding Responsible AI in the School System

Purpose: Review the AI education landscape in Scotland (findings in progress)

Approach: Online interviews, 45 minutes, February/March 2024 to gather insights from 24 experts

- Scottish Government
- Education Scotland
- Scottish Qualifications Authority
- Skills Development Scotland
- Local Authorities
- Regional collaboratives
- Educational technology companies/consultancies
- Relevant alliances and groups
- Key academics

Appreciation

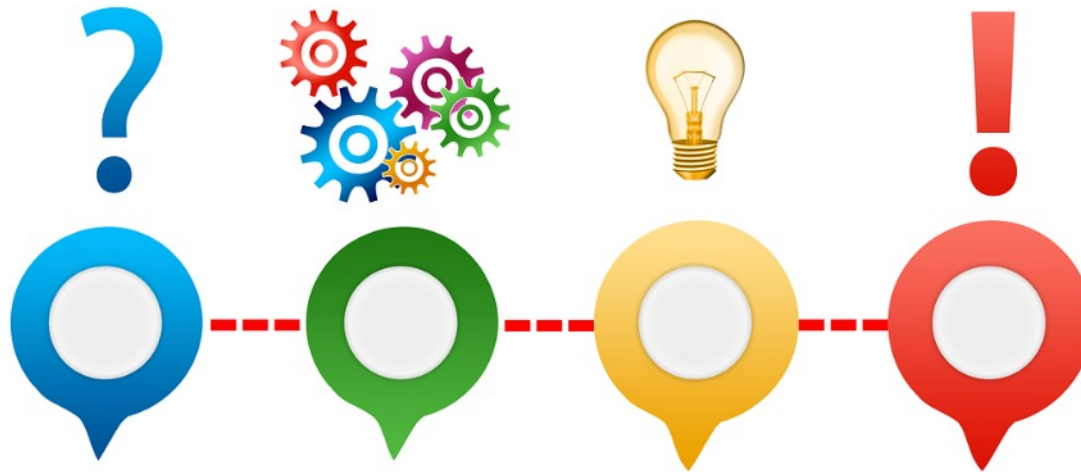
So many people from across a range of perspectives gave their time to reflect deeply on the questions posed – they represent a real resource for Scotland.



Interview Questions

- **Views of the likely impact of AI (particularly GenAI) on schools education in Scotland over the next five years?**
- **Any policies etc developed or being worked on?**
- **Views on how joined up work on AI is regarding schools education in Scotland (what would a map look like?)**
- **Key issues or considerations?**

Views of likely impact of AI (particularly GenAI) on schools education in Scotland over next 5 years



Views of the likely impact of AI (particularly GenAI) on schools education in Scotland over next 5 years

Key Message: (Very) Mixed views!

- Spectrum from panic to cautious to evangelical
- Mixed views even within an individual
 - *'I am a cynical evangelist'*
 - *'I kind of swing like a pendulum between two extremes ... on certain days when you catch me. ... I think that maybe the impact could potentially be overblown ... and then sometimes I think this is going to be completely profound, you know, (and) has the potential to fundamentally change education as we know it.'*
 - *'I sort of worry about it and get excited about it in equal measure each time I try and put my thinking hat on about it all.'*
- Mixed views of teachers' views
 - *'We know there is an appetite ... but it would be an unfortunate opportunity lost if enthusiasts jump right into the very advanced things AI can do, whereas many teachers don't even know how to ask or even how to do the basics, and are not taking the first steps to become less fearful.'*

Views of the likely impact of AI (particularly GenAI) on schools education in Scotland over next 5 years

Key Message: How different *is* it, really?

- *'AI is different; AI changes pedagogy in a way these other tools do not, so there needs to be some national guidance.'*

vs.

- *'We really need to clarify and contextualise what we are dealing with, and get away from the idea that it is unique and separate from past use of technology ...digital policy should be within Learning and Teaching policy'.*

Views of the likely impact of AI (particularly GenAI) on schools education in Scotland over next 5 years

Key Message: Potential impacts on students

- Tools (GenAI built more ubiquitously in existing tools; and into new tools for education, e.g. personalised learning)
- Skills for post-school life

Views of the likely impact of AI (particularly GenAI) on schools education in Scotland over next 5 years

Key Message: Potential impacts on teachers

- Potential tool for reducing workload, e.g. timetabling
- Potential tool for some assessment or differentiation of materials, freeing time for 'pastoral' work
- Need for professional learning

Views of the likely impact of AI (particularly GenAI) on schools education in Scotland over next 5 years

Key Message: Potential impacts on ‘big questions’

- Nature of ‘knowledge’/sources of knowledge
- Coping in a ‘post-truth’ world

Views of the likely impact of AI (particularly GenAI) on schools education in Scotland over next 5 years

Key Message: Pace(s) of change

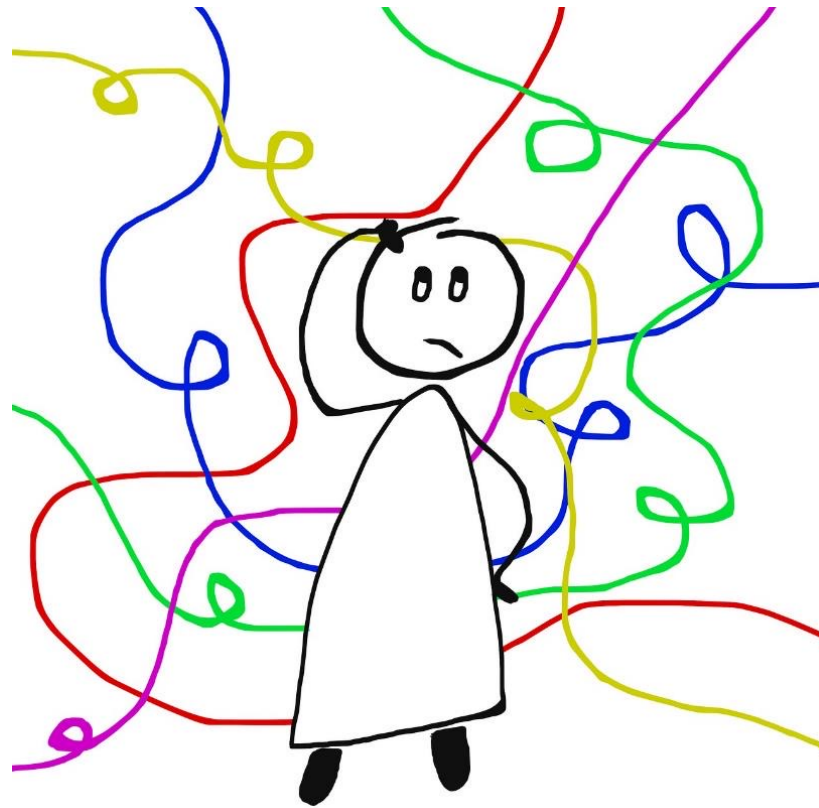
- Technology is changing *fast* (will the pace continue?)
- Policy development is at a slower pace, likely to stay high-level so as not to be outdated?
- Education/the education system in Scotland changes at a slower pace (should/how could the pace keep up with technological change?)

Pace of change?

'The reality is in the near future every job will be affected by this. ... The difference for AI is that the speed is very very fast and not just impacting technology but potentially every curriculum. ... Skills, teachers and curricula out there will have to take account of AI; people are thinking but we will need to implement quite quickly!'

'I have a sneaky feeling, given how slowly official advice tends to be compiled and published out into the system, the technology will move forward very quickly; learners will learn in some good and not so good ways, experimenting. Teachers will hold off by and large until there is firm guidance, whether Government, Local Authority or schools – that will slow up use of AI in education at the chalkface.'

Current policies (work in progress)



Current policies (work in progress)

- Scottish Government: “currently advocates the use of UK Government guidance on the use of generative AI”. Scotland specific policy not yet developed.
- DfE: The education sector should:
 - *“make the most of the opportunities that technology provides”*
 - *“use technology safely and effectively to deliver excellent education that prepares pupils to contribute to society and the future workplace”*
 - *“prepare students for changing workplaces”*
 - *“teach students how to use emerging technologies, such as generative AI, safely and appropriately”*

Current policies (work in progress)

- Because AI is mentioned in the recommendations of the Independent Review of Qualifications and Assessment in Parliament, SG will wait for it to be debated before providing a formal Scottish Government response to the Review
- Scottish AI Alliance: Independent review of AI landscape. SG to respond in late March. However, this does not mention education in any detail
- Revised SG digital strategy will include AI –expected to be published later this year

(Note: blue quotes on the slides come from policy documents/reports. Green input is from interviewees)

Current policies (work in progress)

- Education Scotland: does not take a firm policy decision on the use of AI in schools but will offer teacher professional learning. Looks at the positive use of technology as well as areas which teachers and young people should be aware of
- SQA – Current position: Learners cannot submit AI outputs as their own work and AI cannot be referenced as a source
 - Working group, series of consultation and engagement events, and surveys. Currently working on a "proactive strategic approach"
- Glasgow City Council has a draft policy guidance for schools – any others?

Current policies: Insights into policy development

- Different organisations seem primarily to be finding their own paths
- There seems to be a desire for a leadership role to be taken
- There is an appetite for being convened to work together



Current policies: Insights into policy development

- Assessment is a key inflection point, yet traditional; what is the scope for change? (SQA, Inspectorate)
- Steps are being taken to provide support/guidance even in the absence of/before official 'policy'
- Speculation as to evolution, e.g. pilots/scalability

'For change, it is important to have a national steer with local schools able to (pilot AI approaches) and involve them in a way that you have the possibility to showcase how this can be done and then talk to other schools.'

Views on how joined up work on AI is regarding schools education in Scotland, Mapping the landscape



Views on 'joined-upness' of work on AI in Scottish schools

- Informal conversations; consultations/events
- Alliances (e.g. cross-sector Scottish AI Alliance, groups, regional collaboratives, Assoc. Directors of Education in Scotland, teaching professional associations)
- Willingness to come together, but lack of obvious leadership role
 - *'(The landscape) would probably consist of a series of unconnected dots or squiggles at the moment. ... No one is quite having the confidence to take ownership of the issue and take the lead on the issue; no one is quite sure whose remit it is under.'*
- Complex context of education in Scotland – multi-player governance; multiple policies
 - *'The main challenge is that education in this country is so fragmented it is a real challenge to effect change.'*

Mapping the Landscape

- *Fragmentation*
- *Multiple components (e.g. support as well as policies)*
- *Multiple players (public sector; public agencies; parental voices; young people; employers; articulating colleges and universities; non-tech people such as community groups or third sector that tend to be outside of tech ecosystems; professional organisations such as subject specialist teacher organisations; private sector suppliers. (the last '*could be envisioned graphically as a distant ominous Gotham City type of area' on the map*')).*
- *Complexity – levels, strands, layers : 'There needs to be a Scotland- wide framework policy or guidance. But everyone is under pressure and because AI is moving so fast, the pressure is very intense for a lot of educators. ... A perfect phrase for GenAI or AI in education in Scotland is 'It's complicated!'*

Mapping the Landscape

- *Different lenses: e.g. from point of view of teacher; learner at centre*
- *Actions/dynamics (burrowing, hacking through jungle, placing guardrails on tricky path)*
- *Fourth dimension (evolution over time)*
 - *'Now, the map would be ripped in lots of little pieces that don't quite join, but it should look like more of a journey. ... the landscape of technology will change over time. ... a dimension of time is needed in this map'.*

Mapping the landscape

Maze:

'Currently the map should look like an unsolvable maze but the solution should be that everyone is working together to find their way through the maze. The problem is that there isn't a map. ... When thinking about a national policy, there are also all these local experiences and policies that would have to be taken into consideration.'

Jungle:

'The landscape I would say is like chopping down trees in a jungle. At the moment, I think it's just all over the place. ... There's no clear plans come our way. ... We're waiting really to see what the national advice is going to be, because otherwise what we'll do is we'll create 32 different versions for each of our local authorities, and then that might get further synthesised into six different versions for each of the regional collaboratives. ... So I think that's a little bit messy.'

Mapping the landscape

Winding path:

I immediately think of a very winding path. We are all on a journey; some people will run; some will walk slowly and need lots of support. Sometimes the road is not even carved out before we get to when it is an inherent part of our world. It will need a lot of different activities happening to get us all on our journey. ... It is a big journey, we will all be on in different positions, with guardrails and what we need to put in place to help people on the journey. ... So a teacher is setting off on a path, with all those actors, national, Local Authorities, professional organisations, parents shouting from the sidelines and parliamentary debates. Teachers may ask 'where is the map' (but) we say 'sorry, our cartographers are busy working out the map through the swamp of AI'.

Mapping the Landscape

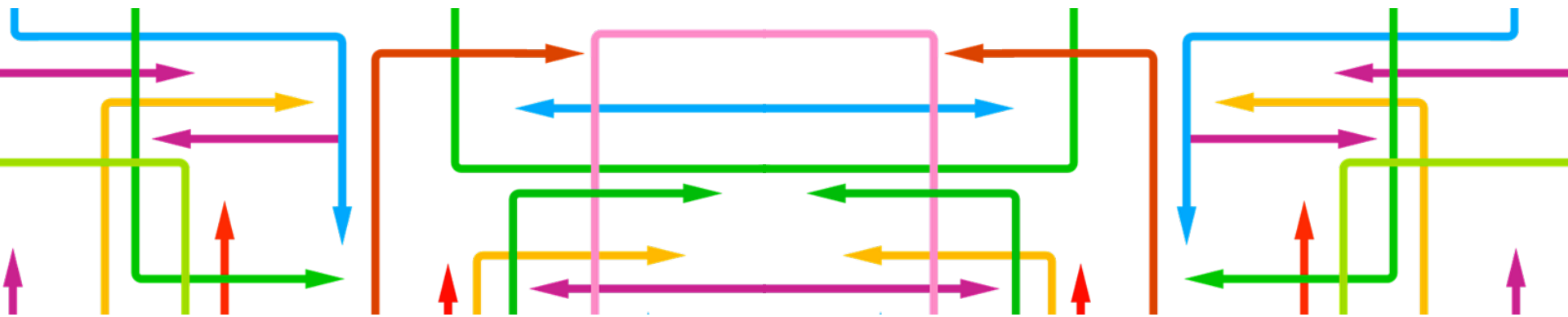


“Moles industriously burrowing through the blackness of soil”

Quote by interviewee, image by DALLE2

Mapping the Landscape

- Hoped-for connectivity: jigsaw puzzle, inter-connected nodes as in the brain; inter-relating arrows
 - *'A map would have to represent the different locus of control or influence that different organisations have because they have their own remits, with inter-relating arrows between all the organisations and how they work together'.*



Issues and questions to consider



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Concerns about managing GenAI

- Plagiarism/cheating/sourcing/transparency issues
- Bias and not taking account of diversity
- Security and privacy (especially for young people)
- Equity: Inequality (of access, technology & schools)

'A lot of teachers are dealing with whether or not children have had breakfast, not the ethical implications of MidJourney. ... (GenAI) might be a great leveller but there is the chance it will further entrench these inequalities.'



Issues and questions to consider

Concerns about possible bigger picture changes

- Role of teachers
- Social dimension of education
- Nature of 'knowledge', potential spread of mis-information
- Learning/skills needed, post-school (e.g. critical thinking, creativity)

Issues and questions to consider

Concerns about implications for the system/readiness

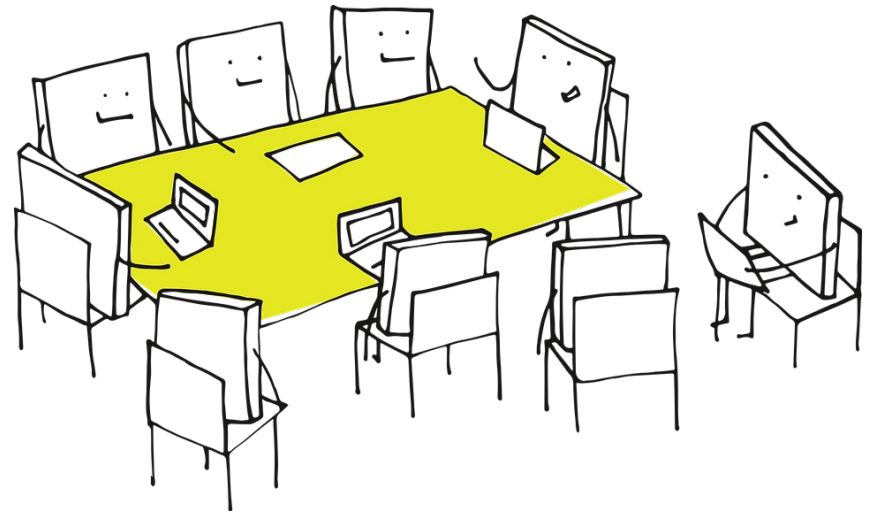
- Hearing of multiple voices: young people, parents, teachers, others
- Assessment, Inspectorate
- Teacher preparation, Professional Learning
- Need for political will ... and investment



Here be dragons!

<https://jenikirbyhistory.getarchive.net/amp/media/merennielu-625bc7>

‘There are a lot of well-meaning organisations trying to make the best out of something that is really fast-moving.’



Where next?

