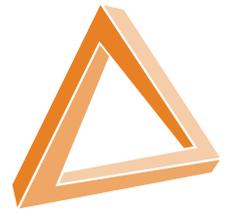


AI Readiness Diagnostic Findings



Step 2: Ready Recommendations



Step 2 Overview

To find out how you can benefit from examining your institution through a 'data and AI lens', contact our AI & Data Science team at hello@educateventures.com

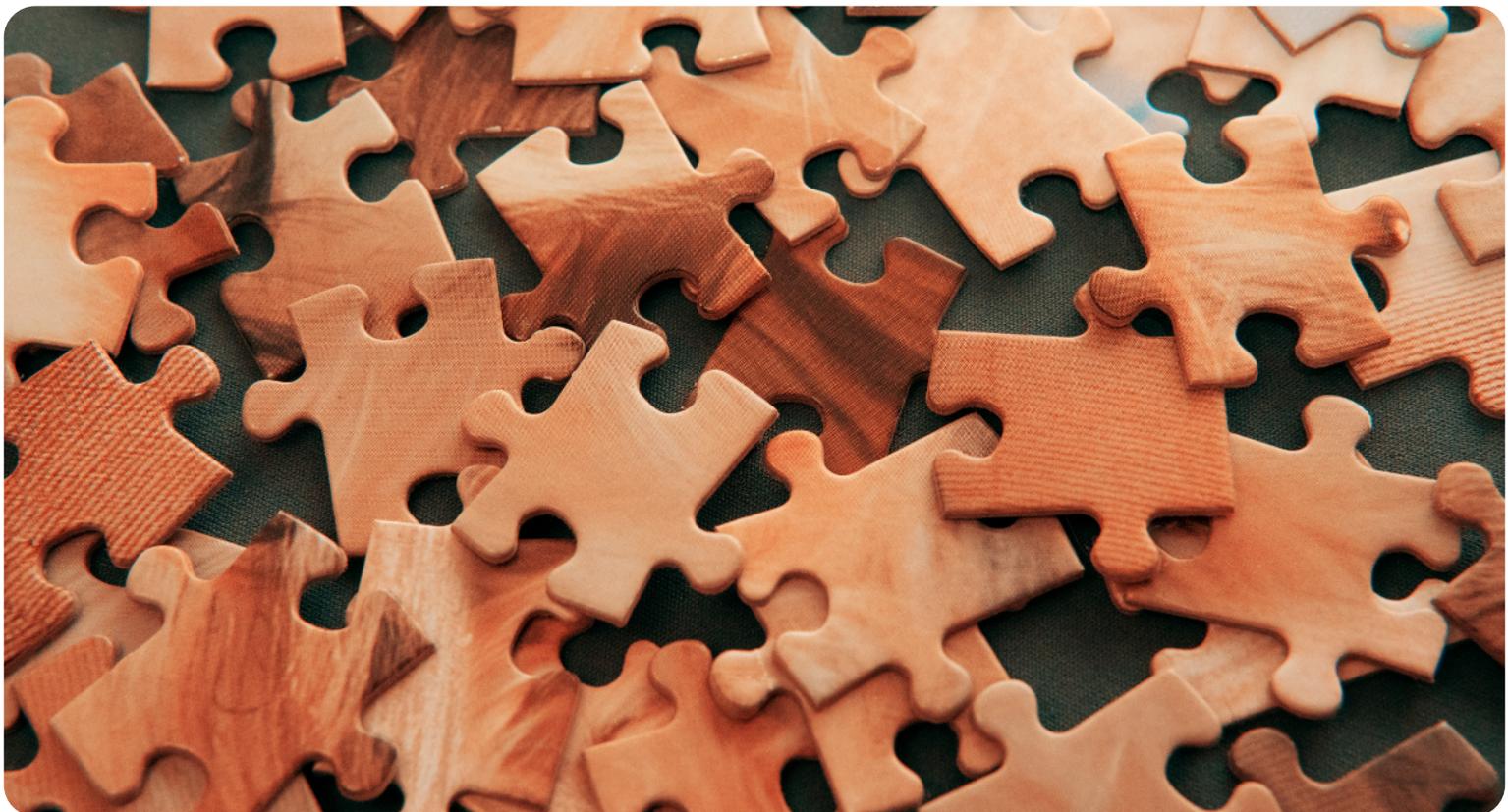
- A key aspect of the AI Readiness approach is to help you focus your thinking on a thorny **challenge** you face in your educational environment
- Maybe the challenges that you face are **systemic and process-based**. Or perhaps they are rooted in an attempt to shift your teaching from a traditional **pedagogic approach** to an **enquiry- or project-based pedagogy**
- Maybe you're:
 - Trying to **recruit, train or retain** the best staff
 - Analysing **attainment gaps**
 - Understanding **learning analytics**

- Unsure as to whether your **marking and feedback** engages students or actually **helps them learn**
- The AI Readiness Framework uses **ten key prompts** to help you focus on one particular challenge that might be **addressed and better understood** by the application of AI. These prompts can all be found in [AI for School Teachers](#) (and in the recommendations below) along with their scoring metrics that help to **prioritise** them, which will help you decide on **what to do next**
- List your **assumptions** during the exercise. Assumptions can be hard to make **explicit**, as they're often **unwritten best guesses** that have never been formalised, but they'll nevertheless shape the way in which a potential solution starts to **emerge**
- **Key Takeaway:**
 - Your head might be swimming with all the different issues you can see in your school or educational business, but performing an exercise to identify just what's **possible**, and how much of an **appetite** you and your colleagues have for the tackling of the challenge will help ground your **expectations**, and direct your **approach**

Recommendation: Consider your challenges

SUMMARY: a good place to *start* is to think about the **challenges** you face currently in your organisation. Below are some **examples**

- If you are a **startup** working in education and training, maybe your challenges are around **leadership**, or **culture** and **strategy**, or building that **top team** that a strategy needs for execution. Perhaps it's about putting your **employees** first. Maybe your challenges are around **systems** and **processes**
 - What about challenges that presented during the Covid-19 **lockdowns** around the world? Staying **organised**, and **time management** were common difficulties for those working from home. Taking regular **breaks**, **switching off** from work, or getting the **energy** to start. **Collaboration** and **interaction** were crucial
 - What about the top 10 challenges facing education and technology at the moment? What are the new EdTech and education realities?
 - **Budgets**
 - **Planning and use of available resources**
 - **Improving student wellbeing**
 - **Staff wellbeing and retention**
 - **Integrating and collaborating with industry**
- **Upskilling and developing educators**
 - **Staff interpreting the new Ofsted framework**
 - **Evolution of learning models**
 - **Creating a digital strategy**
 - **Delivering value for money**
 - How could AI help us with such challenges? Let's look at an example for **Higher Education Institutions (HEIs)**
 - Previously, HEIs relied **heavily** on students from **overseas** and those students couldn't come in the pandemic. Students from Canada, China and India were flying to the UK, the US, and Australia for their university places, but it was not possible to encourage these students to break **regulations** around travel
 - New ways of **educating** needed to be found, including examination of existing **business models** and **tuition fees**, something that is a huge part of the **income** for many HEIs and colleges, and EdTech **businesses**
 - It's an extremely complex picture and it will be different for each and every one of you, whether you are a part of an education and training technology enterprise, or work in a school, college or university. Some of these challenges are of course **universal**, but others will be wholly unique to your particular undertaking



Recommendation: How to pick your challenge

SUMMARY: 10 key prompts exist to help you decide which of your challenges would be the most appropriate for AI to solve

- Which of our **current challenges** in education and training, whether we're part of a school or educational business, might best be done by AI, and which aspects of it might best still be done by humans? **It's not a simple decision**
- These are the **questions** around any challenge that we're looking to address - determining if our challenge is something actually **compatible** with AI:
 - Is it the kind of challenge that we might be able to, in the fullness of time, tackle using AI?
 - What do we already know about this challenge?
 - What's possible for us to know that we don't know, even if we don't know it now?
 - To what extent is the situation controllable, and by whom?

- What level of uncertainty is there?
 - Do we have any data to help us understand this challenge more?
 - Can we collect more data if we don't have enough to help us understand the challenge, and work out how best to tackle it?
 - How accurate can we be in our assessment of the challenge, and our prediction about the best way to tackle it?
 - Does our company or institution have the appetite to change? If they don't, then it's not a good investment of our time looking at the best ways AI can help us innovate
 - How important is solving this challenge to the company or school?
- These are the 10 criteria that we can use to help us make the right choice between all of those multiple challenges that we face in our educational business or school



EXAMPLE: Identifying an appropriate challenge

EXAMPLE: the recruitment of your top team

• Is recruitment the kind of task AI could assist with?

- We wouldn't use an AI system to **recruit staff**, but recruitment is a process that can be **augmented** by AI

• Do we already know enough to get started?

- Yes, absolutely. This is not something that we haven't done before – recruiting staff is **routine** in organisations, and you may have even been involved with it yourself

• Can we know more, even if we don't know it now?

- There's lots more we could know about – perhaps the **people** that we're interviewing, the **way** in which we try to attract them to the roles, the way in which we **induct** them into the business or organisation, how we **settle them in**, and there's so much more we can know about just these, for example

• How controllable is the context, and by whom?

- It's relatively controllable: we can control the recruitment **process** that we use, but of course we can't necessarily control the **availability** of recruiting, so it's not **totally controllable**

• What level of uncertainty is there?

- There's certainly **some** uncertainty. We don't know

the **quality** of the candidates out in the world, we don't know if they'll have the **skills** we need even once they're in position

• What data do we have currently?

- We might have some good data about recruitment but we're not certain **how much** just yet. We may have some from **previous recruitment exercises** that would be highly relevant

• Can we collect more data if needed?

- Absolutely. A **highly specific** job description or title might help narrow your criteria or the applicant pool

• How accurate can we be?

- It could be quite accurate. There's certainly lots of ways in which we can learn more about the **people** and more about the **roles** that we're trying to fit them in. We can use different tools and techniques to understand the **information** that we collect

• Does the company have the appetite to change?

- That's a decision you will need to make but if you are going through with this process it is likely that you do

• How important is solving this challenge to the organisation?

- Having the best staff is **crucial** to almost every organisation. So it's certainly a high priority

Recommendation: Assumptions

SUMMARY: check your **assumptions** at each and every point along your journey; doing so will help **sanity-check** and **course-correct** your progress

- It's vital that the process you go through for Step 2 of the AI Readiness Framework is done in a setting where you make sure that you've uncovered any underlying assumptions in your considerations and planning

• For example:

- If there's an assumption in your school or educational business that assessment methods must be done in a particular way in order for them to be valid, then you need to get that assumption absolutely out in the open
- If there are particular assumptions about how staff should be trained, for example, again, those need to be out there in the open, so that they can be

questioned and challenged, and checked, and put there as part of the context in which this decision is being made

- And we need to think very carefully about how AI could help us to address this challenge once we've understood it better through the AI Readiness Framework



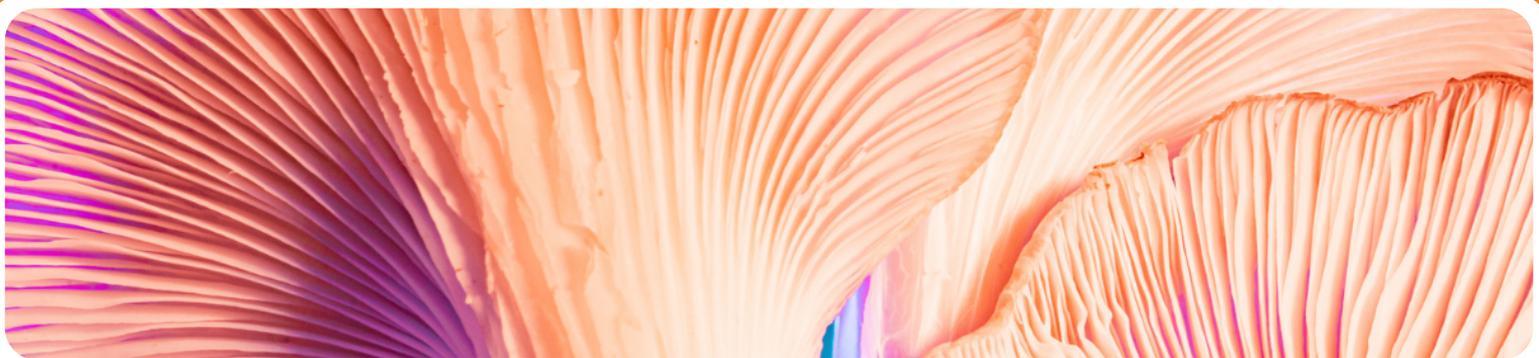
Recommendation: Differentiating between challenges

SUMMARY: *what about **related** challenges? How should we compare them so that we focus on **one** and concentrate our resources **effectively**?*

- Let's consider challenges around:
 - **Recruiting the best staff**
 - **Training the best staff**
 - **Maintaining the best staff**
- Firstly, there are not **huge** differences across the board for these 3 challenges. But there are **some**. If we look at the first one - **recruitment** - we might find that recruitment has limited amounts of **controllability**, but we can certainly collect data, which would be **crucial** to our business or school
- The **crucial nature** of that particular challenge, however, might make us decide that's actually the one that we want to address **first**. Alternatively, the **controllability** of the training challenge might make its priority more attractive, and the fact that we believe we can be very **accurate** in our assessment of that challenge, and in the way in which we can learn more about it (our training **requirements**, **frequency**, the **usefulness** of training to staff) might make us feel that that's the area we want to prioritise instead. So it becomes a very individual **decision** that the **10 key prompts**' criteria-based questioning can help us form
- What about the example of the **continuity of teaching in Higher Education Institutions** during Covid?
 - **Is it AI compatible?**
 - Yes, it probably is
 - **Do we know enough?**
 - We probably do, but there will be more to know
 - **How controllable is it?**
 - Somewhat controllable
 - **Uncertainty**
 - There's lots of uncertainty in the pandemic, and

lots of uncertainty around what it means for that continuity of teaching provision to be in place when we don't necessarily know how we might be required to work with students going forward

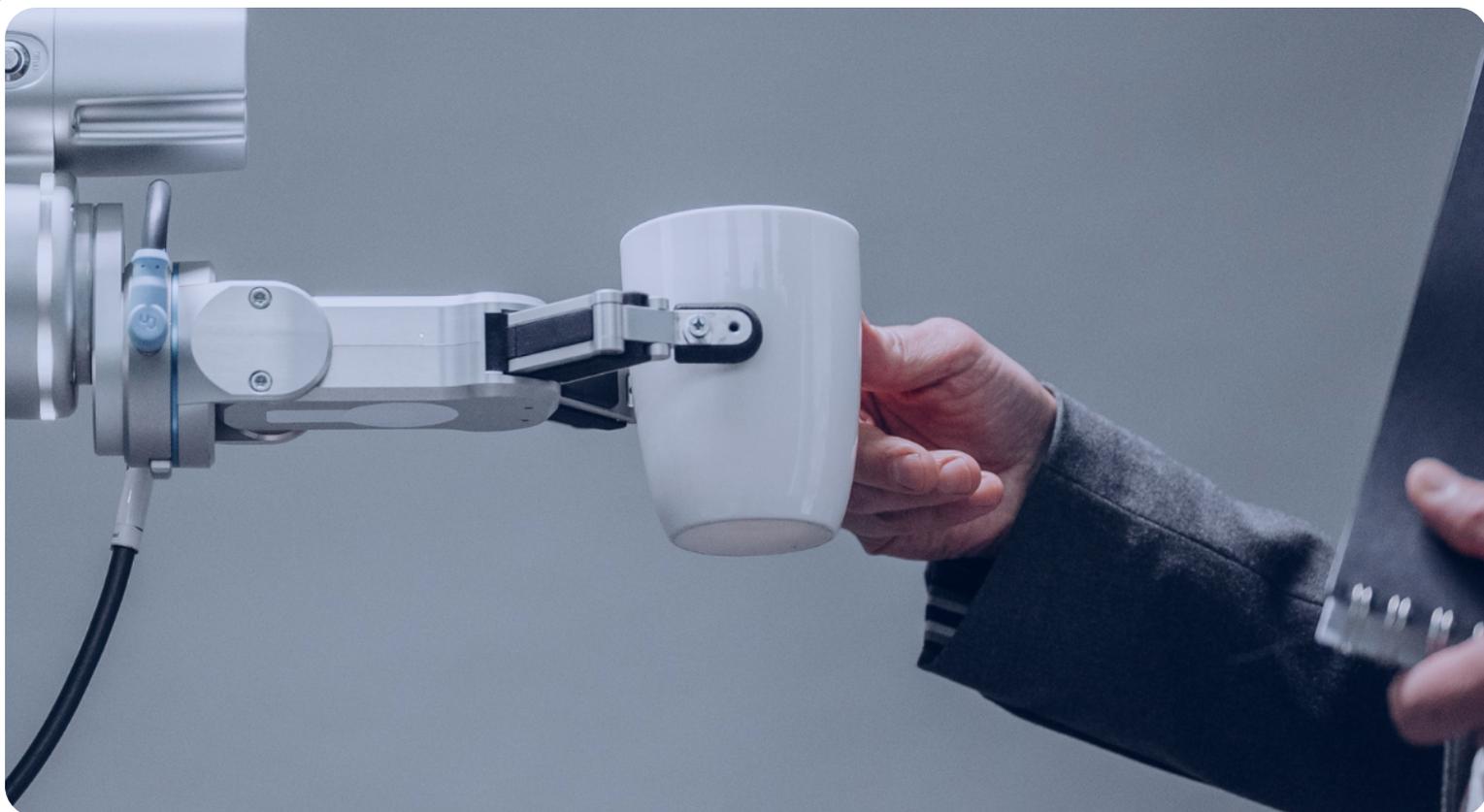
- **How much data will we have about this?**
 - If you are in those HEIs then we have lots
- **Accuracy**
 - Uncertain; it depends on the quality of the data, but if we make sure that we collect more data, we can increase the accuracy
- **Is there an appetite for change?**
 - This question is **crucial**, it is what university education is all about. So for an institution it's a **key challenge**
- **Importance**
 - That ability to **adapt** to the best method for delivering teaching and learning - that's incredibly important for a university
- If we compare the challenge of ensuring the continuity of teaching with the challenge of ensuring student wellbeing, for instance, we can imagine that there is some **crossover** between the two. A **human touch** is needed when it comes to support and wellbeing, but there could certainly be a role for AI to play, perhaps in automated **alerts** to mentors, around workload, financial stressors, etc.
- In the case of continuity of teaching versus student wellbeing, **prioritisation** might be largely driven by multiple questions about the **appetite** of each particular institution or even each department in the institution, trying to make a decision about which challenge is the one they want to focus attention on, and how much resource and capacity they have to offer
- The examples above are **simplified**, but the quick **10 key prompt** analysis of each is a way to help see how the criteria might be applied to the sorts of challenges you face in your school or educational organisation



Recommendation: Knowing where AI can benefit the most

SUMMARY: consider finding a challenge that plays to AI's **strengths** and can compensate for **weakness** in human intelligence

- We want to ensure we pick a challenge that would truly **benefit** from the application of AI, so what is AI really good at?
- We know it's very good at **pattern matching** and **classification**, and it is very good at **automating and replicating repetitive tasks**. It is very good at **processing** large amounts of data, **storing** large amounts of data, **collecting and integrating multimodal data**, and **reducing complex phenomena** into more easily understood pieces for **human cognition**. That last one is important because that helps humans to be more **effective**
- What are humans better at? Going back to **Step 1** in the AI Readiness Framework, we recall that we have definite strengths in:
 - **Interdisciplinary meta-knowing intelligence**, where we can think about what we know, what we don't know, our ability to understand what **knowledge** or **evidence** is, how we make **decisions** about what we should believe and not
 - We have strength in **social intelligence**
 - **Metacognitive intelligence**, where we understand our own **cognition**, our thoughts, and are able to **regulate** them effectively
- **Subjective intelligence**, which is understanding our own **emotional intelligence** and that of others, and how they change and develop over **time**
- **Meta-contextual intelligence**, where we have understanding of multiple different environments, people, and tasks that we work with, that we often **move seamlessly between**, and which is something that's really hard for AI
- And then there's **perceived self-efficacy** - that ability to set goals, to **know how likely you are** to reach them. And then what you need to do in order to reach them, including who might help you, and how you can encourage them to help you. How you socialise with them, how they're feeling, how you're feeling. Overconfident, anxious, motivated enough.
- All of these human intelligence capabilities are really important, and different from what we can do when it comes to building and developing AI
- The AI Readiness Framework prompts you to consider all of these things, particularly in **Step 2 (Tailor & Hone)** and provides space to ask where best AI could serve you, given your own strengths and weaknesses, and what you know about AI's strengths and weaknesses. Revisit **Step 1** in the framework to get a refresher!



Recommendation: Making a data-informed decision

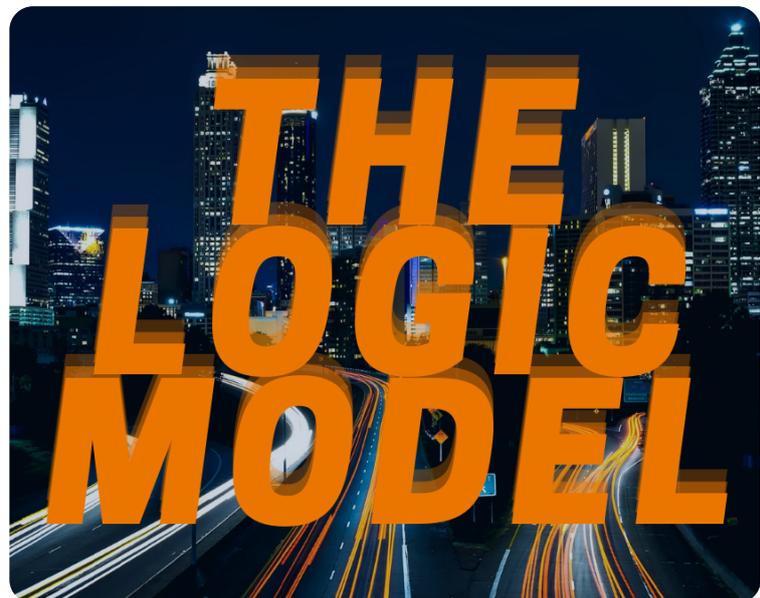
SUMMARY: *think about what kinds of data you and your colleagues encounter and how you use it. Could you learn more from it?*

- What might be the ways in which you come into contact with **educational data**? Are you providing training or a digital intervention for your teachers and learners? Even if you are not using a digital technology, there is still lots of information and data that can be **collected** from your students, staff, or target audience, and the way that they **interact** with your teaching or training. You can ask how well their sessions have gone, their emotional states before and after, whether they used any technology to assist them
 - We can think about whether we're looking at **analytics** and **feedback**; are we providing that for our students? How is the data about **planning** and the **execution** of teaching with assessment data **connected**, for example? **Could your organisation be learning more from your data** is the key question that we want to ask at this point
 - If you work in an educational business, and we are
- reexamining that question about **recruitment**, how do you use the collected information about your employees from the moment they apply, to their evaluations, or promotions, or departures?
 - How does your data help you **learn** about your workforce, about the **efficacy** of that recruitment practice. How does the **feedback** from customers or parents get **collected** and **stored**, who has **access** to this and how is it **used** - is it used to inform the **design/staffing** of your business? Is it used to inform **business decisions**? The **financial data** that you collect: how do you and other people learn from this data, who sees it? What do they use it for?
 - These are important questions. Could you improve the data that's collected, could you improve the **data capture methods**? Could you learn **more** from the data that you can access, and in that way, could you make much much better decisions about where AI might best be applied? How could you help others to learn more from the data that you can access, if they can access it (provided of course they're working in the same business, and it's **ethical** for them to have access to that data)

A quick introduction to the Logic Model

SUMMARY: *the Logic Model is a tool to help demonstrate efficacy and impact - it is a strategic decision-making dashboard for your organisation*

- When you're building an **educational intervention**, you need to understand and address **questions** of its development **one at a time**
 - Collecting and interpreting **data**, whether it's your opinion on what the intervention looks like or feedback from users and staff on how that intervention unfolds, becomes a trade-off between **priorities**. Choosing one priority over another, based on the most **significant data** you have at the moment can make you feel like you're really making progress, but more importantly, it's likely to get you further along the **development cycle** than anything else you have. A Logic Model provides you with that prioritisation
 - The Logic Model forces you to examine your **assumptions** about your learning tool, or the intervention you are building, and **logically plan** how it will work to achieve the **desired educational outcome**. It helps you balance the search for evidence that your intervention **works** with the **needs of the organisation or department**
 - You're making **strategic decisions** about the data that is most important to collect at any given point, and being strategic in the **hunt** for that data - what is called **research**
- The Logic Model is a tool primarily used by EdTech companies on the **EDUCATE Programme**, but its practicality in assisting with **data-informed decision-making** should not be **overlooked** by schools or education and training organisations
 - An extensive overview of the power of the Logic Model can be found in the EDUCATE Ventures Research **Byte-Sized EdTech Research library**, and is available to download [here](#)



Who can help me?

We are specialists in **ethical AI solutions** for schools and education and training businesses - **contact our team for help**

The EDUCATE AI and Data Science team was formed to consult on and co-design ethical AI solutions to complex problems in data-driven technology ventures and schools. Our team of computer scientists, educationalists, and world-renowned experts can take you from zero AI to a comprehensive evidence-led strategy and beyond, with effective, scalable AI-powered teaching and learning solutions.

To find out how you can benefit from examining your institution through a '**data and AI lens**', and leveraging the transformational power of AI to tackle your challenges, contact the **AI and Data Science Team** at EDUCATE Ventures Research at hello@educateventures.com.

Thanks for reading!

- The EDUCATE Ventures Research Team
Summer 2022

Further Reading

Below you can find a selection of resources, books, podcasts, webinars, and research papers appropriate to your stage of AI Readiness. Good luck!

- [AI for School Teachers, Byte-Sized Edition](#)
 - An easy-to-read 10-page byte-sized summary of the book of the same name, written by Professors Rose Luckin, Mutlu Cukurova, and Headteacher Karine George, members of the senior team actively developing and using the AI Readiness Framework from which these recommendations derive
- [Four Golden Rules for Reviewing Your School's EdTech](#)
 - A short blog from Schools Week prompting readers to think about the serious questions raised when considering using technology in learning environments
- [SchoolDash: Pupils' Lockdown Experiences](#)
 - An example of the kinds of challenges faced in education during Covid, with a large amount of data to support the observations
- [AI Systems for Teachers & Learners in School](#)
 - Professor Rose Luckin presents at the Raspberry Pi Computing Education Research seminar, discussing how AI-based analysis can help support students
- AI Readiness: Step 2 webinar for [Educators/Businesses](#)
 - Two separate webinars introducing Step 2 of the AI Readiness Framework, one targeted toward educationalists, and the other targeted to educational businesses
- [The Logic Model](#)
 - Developed by EVR senior research and communications staff, this addition to the Byte-Sized EdTech Research library explores a strategic decision-making dashboard for your team: the Logic Model. It is a fantastic tool to get teams together and reach a better understanding of how an organisation demonstrates efficacy and impact with an educational intervention
- [Evolution of Adaptive Learning in Higher Education](#)
 - 'Learning to Adapt 2.0' is a short paper produced by Tyton Partners presenting findings from interviews with institutions and suppliers. The research includes insights from qualitative interviews with leaders from over 20 institutions about their experiences with adaptive learning, and survey responses from 32 suppliers of adaptive solutions
- [A Survey of AI Techniques Employed for Adaptive Educational Systems within e-Learning Platforms](#)
 - A short research paper presenting a survey of raised and related topics to the field of AI techniques employed for adaptive educational systems within e-learning, their advantages and disadvantages, and a discussion of the importance of using those techniques to achieve more intelligent and adaptive e-learning environments
- [AI for School Teachers](#)
 - The complete book on the AI Readiness Framework, specifically for teachers and headteachers in schools. It will help teachers and heads understand enough about AI to build a strategy for how it can be used in their school. Though it is pitched to teachers and contains familiar examples, the approach should still be used by education and training organisations working with technology

