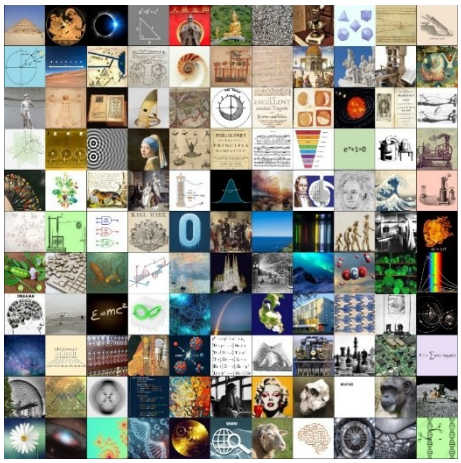

RESOURCES FOR SCHOOL TEACHERS

- THEORY OF KNOWLEDGE -

Theory of Knowledge (TOK)

Across many education systems, there is a growing emphasis on understanding:

1) How knowledge comes about,

2) How to evaluate whether a theory is correct,

3) How different areas of knowledge connect, and

4) How collective knowledge shapes our lives as citizens.

The ***Atlas of Human Imagination*** by David Jarvis offers a powerful visual tool for exploring these questions in the classroom. The poster maps out some of the greatest and most imaginative intellectual leaps in human history, presented not in traditional subject silos, but as a connected tapestry of ideas. It also reveals how this collective knowledge influences our everyday lives and highlights the importance of nurturing students' imagination. These three themes are expanded below.

Collective Knowledge & Cross-Disciplinarity

In most school systems, knowledge is typically divided up into subjects which are then individually taught and tested. A biology lesson will teach to a biology syllabus; a maths lesson will zoom into equations and calculus; and a French lesson will be held entirely in French for an hour. This is of course normal and convenient for planning education in a school, but from a knowledge perspective it can also be rather fragmented and limiting.

Occasionally it is helpful to see the bigger picture and take a birds-eye view of knowledge. Leonardo Da Vinci recognised this many centuries ago when he said:

> *"To develop a complete mind: Study the science of art; and study the art of science. Learn how to see. Realise that everything connects to everything else".*

There is a lot of truth to this advice and the *Atlas of Human Imagination* illustrates it beautifully. The poster presents a chronological collection of great thoughts, placed side by side, with no boundaries between science, computing, art and the humanities. An imaginative leap like Pablo Picasso's Cubist art movement can happily sit in between William Tutte's cryptography breakthrough and Lise Meitner's explanation of nuclear fission. One is art, one is logic, and one is fundamental physics. Though these belong to different domains, they all represent humanity's capacity to think beyond convention and imagine a new paradigm that changes the world.

For teachers:

This can spark TOK discussions about how knowledge grows across disciplines and encourage students to think beyond subject boundaries.

1) Cross-subject mapping activity:

- Ask students to choose two random thinkers from different fields (e.g. art and physics, or biology and literature) on the poster and research how their work might be connected. For example, how might developments in mathematics influence artistic movements? How might philosophy shape technology?

2) TOK discussion prompts in the classroom:

- "To what extent do subject boundaries help or hinder our understanding of knowledge?"
- "Can we understand a concept fully if we only study it from one disciplinary perspective?"
- "Why do some ideas emerge simultaneously in different fields or places?"

3) Creative group task:

- Divide students into small groups and have each group build their own "mini atlas" around a central theme (e.g., "Light," "Revolution," "Climate" or "Communication"), linking thinkers and ideas across disciplines.

4) Extended writing / reflection:

- Ask students to write a short reflection: "What would happen to knowledge if subjects didn't exist at all?"

Connections with Everyday Life

Another powerful feature of *Atlas of Human Imagination* is its illustration of how these intellectual leaps shape modern life. On the website, we have imagined and analysed three everyday scenarios - things that we typically take for granted - *flying on holiday, visiting a hospital and going to the supermarket.* In each case, there are deep and enduring connections between many of the historical thinkers and our regular daily experiences.

For example, imagine trying to construct a building without knowledge of Pythagoras' theorem and basic trigonometry; imagine trying to fly an aeroplane without radio, radar or Maxwell's equations; imagine being operated on by surgeons who didn't swear the Hippocratic Oath or who didn't exercise good hygiene or sterilisation of their instruments.

These simple examples remind students that what they learn in school is not isolated - it influences the world they live in every day.

For teachers:

Use real-world scenarios to help students link classroom learning with lived experiences, making TOK discussions concrete and meaningful.

1) Scenario-based discussions:

- Choose a common activity (e.g., using a smartphone, streaming music, making a TikTok video, going to the doctor, using the underground). Ask students to trace which thinkers and discoveries made that activity possible, using the poster as a guide.

2) TOK discussion prompts:

- "How much of what we do every day depends on invisible layers of knowledge?"

- "Does understanding the origins of knowledge make us more responsible citizens?"
- "Why do we often take these intellectual contributions for granted?"

3) Timeline exercise:

- Have students place sticky notes on a timeline or digital board linking key thinkers from the poster to everyday technologies or services. This helps visualise the *chain of knowledge*, and who influenced whom.

4) Classroom debate:

- Organise a short debate: *"Which intellectual leap has had the biggest impact on modern daily life?"* Encourage students to justify their choices with evidence from different fields.

Importance of Imaginative Leaps

The final thought is about how knowledge comes about at all. Obviously, some knowledge is created through serendipity where someone spotted some surprising result and acted upon it. This is the case for the accidental discovery of stainless steels or Penicillin antibiotics. However, the biggest breakthroughs are often much more deliberate inquiries, more disciplined and with a greater display of intent and planning - rather than just luck.

It is crucial these days for students to explore and embrace creativity - whether that is in artistic ways, or engineering experiments, or creative writing, or computer coding for fun. Embracing mistakes is a natural part of that creative process and certainly nothing to be ashamed of. Many scientists have spent years getting stuck in a rabbit hole. Many artists have spent years perfecting a painting until they are satisfied with the outcome. Many engineers have made mistakes in their initial designs and prototypes, but managed to correct them to get good final results.

In fact, every single one of the 121 thinkers featured in the *Atlas* would have faced setbacks on the way to their breakthroughs. Curiosity, imagination and resilience are all part of the same mindset.

Therefore, fostering imagination, accepting some mistakes and valuing diverse forms of intelligence and talent over standardisation are key messages of *Atlas of Human Imagination*.

For teachers:

The *Atlas* can be used to prompt reflection on how knowledge is created and how creativity fuels progress across fields.

1) "Behind the leap" stories:

- Assign each student or group a thinker to research - not just what they achieved, but *how* they got there. What mistakes, failures, or unexpected moments shaped their journey?

2) TOK discussion prompts:

- "Is creativity more important than knowledge in making breakthroughs?"
- "Can failure be a reliable teacher of knowledge?"
- "To what extent does imagination drive scientific and artistic progress?"

3) Classroom gallery or "Idea Wall":

- Create a display where students add ideas or breakthroughs that inspire them, noting how imagination played a role.

4) Role-play or simulation:

- Ask students to imagine they are living in the time of their chosen thinker. What questions might they ask? What resistance might they face? What could have discouraged their new way of thinking?

Conclusion

The *Atlas of Human Imagination* is more than a poster—it's a conversation starter, a celebration of global knowledge, a bridge between disciplines, and a reminder of the shared human story behind knowledge.

Teachers can use it to:

- Initiate TOK discussions
- Understand that knowledge arises in different ways
- Inspire interdisciplinary projects
- Encourage critical and creative thinking
- Connect classroom content to the real world

By showing students the bigger picture, we help them become not just better learners, but more imaginative and engaged citizens.

David Jarvis