



## Article

# A Vision for a Humanising and Sustainable Future of Language Learning with the Metaverse

**Nergiz Kern**

*Independent Emerging Technology for Learning Consultant and Foresight Practitioner, Turkey*

## Abstract

*With the media hype moving from the metaverse to artificial intelligence, educators' attention has also shifted. However, technology companies, governments, and various other entities are continuing to develop their versions of the metaverse. It is important that educators do not lose sight of these developments, and instead use futures thinking tools to envision alternative futures, and work toward their preferred one, as exemplified in this article, avoiding patterns of unhelpful behaviour from the past (Selwyn, 2021). The article finishes with a Backcasting inspired story based on scenarios, deepened through CLA, and developed using the Six Pillars Foresight Method (Inayatullah, 2008).*

## Keywords

Emerging Technologies, Metaverse, Humanising Futures, Sustainable Learning Futures, Language Learning

## Introduction

The metaverse may not be on the forefront of the general public's attention anymore and has repeatedly been proclaimed dead (Zitron, 2023). Nevertheless, major technology companies (Walbank, 2023) and marketers (Bartolo, 2023) continue to strive towards realising their envisioned future internet. Various other entities, such as governments (Lee, 2023), the EU Commission (Cho et al., 2023), the World Economic Forum (2023), and metaverse safety specialists (XRSI, nd), are also pursuing their respective visions of an immersive internet, an alternative name for the metaverse.

If educators lose interest in the metaverse and move on to the next hyped technology, they may be left to work and teach with a metaverse they did not desire. Examining the history of educational technology reveals this cycle of hype followed by disillusionment is typical (Selwyn, 2021). A Google search analysis for 'metaverse', 'generative AI' and 'ChatGPT', indicates this might be happening again (see Appendix A).

Employing futures thinking tools can help educators break free from this cyclical pattern (Inayatullah, 2008), ensuring preparedness for a technology's mainstream adoption. Furthermore, it can assist educators in positively shaping the educational utilisation of emerging technologies, making it more humanising and sustainable.

This essay aims to employ futures thinking tools, mostly based on the Six Pillars Foresight Method (Inayatullah, 2008), to create a future artefact (Peter et al., 2020) in narrative form. The purpose is to emotionally engage language educators by presenting probable future scenarios that depict the potential impact of the metaverse on the future of language learning. It is hoped this will lead to re-engagement with the metaverse and active participation in shaping it towards a more desirable version for educational use. Additionally, this essay seeks to introduce futures thinking to language educators.

\* Corresponding author.

E-mail addresses: nergizern@gmail.com (N. Kern)

### What is the metaverse and does it even exist yet?

The question whether the metaverse already exists or will in the future depends to a great extent on how it is defined. There is no consensus even among experts in the field of emerging technologies.

Mathew Ball's (2021) definition is close to the original idea by Neil Stephenson, who coined the term 'metaverse' in his book *Snow Crash* (1992), except that Ball describes the metaverse not as one but multiple virtual worlds that are interoperable:

The Metaverse is a massively scaled and interoperable network of real-time rendered 3D virtual worlds which can be experienced synchronously and persistently by an effectively unlimited number of users with an individual sense of presence, and with continuity of data, such as identity, history, entitlements, objects, communications, and payments. (Para. 28)

For metaverse experts, the metaverse is an ecosystem which includes artificial intelligence (AI), augmented reality (AR) and other emerging technologies (Wallace et al. 2023). Together they will form the next iteration of the internet and lead to a more immersive, or spatial, internet experience as well as an integration of the physical and digital worlds. The XRSI, a standard developing organisation, has worked with experts in the field to come up with an all-encompassing definition (Wallace et al. 2023) that lists the emerging technologies they believe will play a role in the metaverse:

A network of interconnected virtual worlds with the following key characteristics: Presence, Persistence, Immersion and Interoperability. Metaverse is the next iteration of the internet enabled by several converging technologies such as Extended Reality (XR), Artificial Intelligence (AI), Decentralised Ledger Technologies (DLTs), neuro-technologies, optics, bio-sensing technologies, improved computer graphics, hardware, and network capabilities. (p. 7)

In this definition, we see that 3D has been dropped from the definition of virtual worlds, meaning that virtual worlds can be anything from simulated virtual worlds to augmented worlds (Wallace et al., 2023). It follows that these then can be accessed through various devices such as VR, AR, or mixed-reality headsets, even simply through the devices many people already have, such as a computer, tablet or smartphone.

In this article, the metaverse will be used in the widest sense of its definitions – as the future version of the internet: more immersive but not necessarily three dimensional, enabled by a set of emerging technologies, and that can be accessed through different devices.

### The importance of the metaverse for language learning

Some of the characteristics of the metaverse make it uniquely interesting for language learners, the main ones being:

- Interactive and immersive
- Interoperable, interconnected virtual worlds
- Social interaction

These allow for immersive, active, experiential, task-based, social and problem-solving based learning. It means that learners can meet and do things together almost like in the physical world, and so have experiences that are much more interesting, motivating and memorable compared to physical classroom-based learning or online video conferencing sessions (Kern, 2021).

Learners can go on field trips and events, collaborate with others on hands-on project work, meet and chat with other people in their target language, and participate in role-plays and simulations in contextualised <sup>[1]</sup><sub>[SEP]</sub>realistic environments (Kern, 2021). All of this can be realised without the necessity of travel and its downsides, such as costs, visa requirements, time off from work, or environmental impact.

According to Jagannathan (2023), 'the metaverse is an embodied internet where you're never alone. Unlike a Zoom call that is scheduled and disappears when you're done, the metaverse is "always on" and affords social interactions with peers.'

In short, Hwang and Chien (2022) suggest that:

...from the perspective of the metaverse, the aim of language learning is more than a course or a learning activity; instead, it aims to enable EFL learners to have another life, a living environment using English for working, learning, social events and entertainment, just as if they were native English speakers.’ (p. 2)

This prospect should excite any language institution, educator, or learner. This was the case in 2022, at the peak of the hype around the metaverse. However, the attention has shifted towards other emerging technologies in 2023. This phenomenon of bursts of attention paid to new technologies by educators will be examined in the next section.

### **The vicious edtech cycle**

An examination of the field of educational technology suggests that educators react to developments rather than proactively define their own problems and solutions to them, and move strategically towards achieving their own goals. Technology companies are clearly the drivers when it comes to which technologies educators as well as students learn about and adopt.

Not only do leading technology companies develop new technologies, such as extended reality (XR) and AI, but they also massively finance research (Bosworth, 2021, September 27) and pilot projects at universities and schools in order to promote and facilitate the uptake of these technologies (Whitford, 2022). Technology is often offered as a panacea in education, even for problems that are not technological in nature, leading to what critical edtech Selwyn (2021) calls techno-solutionism.

The marketing machinery of these companies promises their product will revolutionise education and lead to a better future, often exaggerating the potential for learning and the economy. A search for ‘the future of language learning’ mostly brings up technology company articles in which they present their own products as the future of language learning. Due to the attention economy, the media amplifies the voices of tech companies promoting their latest products, which leads to hype that educators are drawn into as they try to keep up with learning and implementing the latest technology so they and their students are not left behind. However, once the next hyped emerging technology arrives, the last one falls off their radar, especially when the media adds to the illusion that that particular technology is ‘dead’ and moves on to promote the next big revolution. Also, because the technology was so oversold and promises so exaggerated, it was unable to deliver what it promised and led to disappointment for education stakeholders.

Currently, the metaverse is at the stage where it is being declared dead by the media, while the attention is on the new hyped technology, AI. It is, however, far from dead. Away from mainstream attention, and at a slower pace, its development continues, and it will likely gradually reshape the internet. The loss of attention offers both opportunities and risks for the future of language learning.

Before looking into the future, however, it often helps to examine patterns in how technologies have been adopted by educators in the past. Uncovering such patterns from the past can help us avoid a used future (Inayatullah, 2008), repeating behaviour even though it has not worked in the past, and instead react in more constructive ways when we are faced with new technologies.

### **Edtech history repeats itself**

When we look at the history of educational technology, we can see that the observations in Section 3 about the current situation are not new. Even though it is limited to the implementation of educational technology at US K-12 schools, Cuban’s book *Teachers and Machines* (1986) clearly shows a cyclical pattern of a technology becoming hyped, promising to revolutionise and to solve issues of accessibility, scalability, cost, efficiency and effectiveness in education, then failing to do so, and thus causing disappointment. He demonstrates this pattern by looking at the history of film, radio, TV and finally the computer between 1920 and 1986.

Some of the promises made by proponents of the ‘technological fix’ (Johnson, 2018) about previous technologies sound similar to what has been said more recently about e-learning, online learning, the metaverse and virtual reality:

- It will revolutionise education

- It will allow students to learn and communicate globally
- Students will receive instant or quick feedback on their course work
- It can be used to train employees and teach them new skills
- It will make education cheaper and more scalable
- It will democratise access to education and make it more inclusive
- It will create new business and bring revenue to learning institutions
- Students will learn from the best teachers no matter where they are located in the world
- There will not be any bricks and mortar schools in the future

(Papert, 1984, Cuban, 1986; Davis, 2004; Selwyn 2021)

However, the promised revolution has in most cases not happened.

But there is another, less apparent pattern. Even though some technology is overhyped and cannot deliver quickly enough before disillusionment sets in, some technologies do not go away. Sometimes, it simply takes longer than initially promised and hoped for the technology to get developed fully, be easy enough to use, and become mainstream. This is apparent in the case of computers as well as the internet. In both cases, proliferation of these technologies in education as well as the development of suitable pedagogies took time (Cuban, 1992), but eventually they became normalised (Bax, 2003).

One reason why these two technologies did eventually become widely used and caused some transformation in education is that over time the computer and the internet developed into technologies that have inherently different qualities from technologies such as the TV or radio. The latter are mainly used for passive knowledge transmission, whereas the former allow for interaction, communication and content creation, and thus make active, learner-led learning possible (Selwyn, 2021).

The metaverse, as the future iteration of the internet, falls into this second category. The internet in its current form allows for social learning and content creation. The metaverse can enhance this through the additional characteristics of immersive, persistent, interactive and interoperable virtual worlds, and it thus has true potential to transform language learning as described in Section 2.1

### **Anticipating and mapping the future**

Considering all the potential benefits of a fully developed metaverse, a positive vision for the future of language learning is that by 2034, language learning and teaching will be more authentic, decentralised, distributed and democratised, and accessible to all if done well.

For such a positive vision to come true would require that:

- The internet will develop into the metaverse
- The metaverse will be interoperable
- Large tech companies will be prevented from monopolising metaverse technology and platforms
- Companies will be bound by ethical guidelines and will not misuse user data
- With the development of blockchain technologies, users will own their data
- The metaverse will be as widely available as the internet is today
- Technologies, such as conversational AI, will not be used to replace teachers

Realistically however, we can safely assume that there is potential for negative developments as well. The same qualities that make the metaverse so interesting for language learning can also increase the risks associated with it. Ethical issues, such as data ownership and privacy, exposure to bullying and harassment, attempts by major technology companies to exert control, a technology divide limiting accessibility, and so on, must be considered (Copenhagen Institute for Futures Studies, 2023, Pew Research Center, 2022) in order to create a safe environment for social and immersive language learning.

### **Emerging issues analysis**

In addition to the more immediately apparent issues, there are also broader social, technological, economical,

environmental, political, legal or ethical drivers that need to be taken into account in determining how successful the adoption of a new technology will be (Selwyn, 2021). Using horizon scanning (Cuhls, 2019), we can identify the following emerging issues that could potentially influence the trajectory of language learning with the metaverse.

### ***What's on the horizon?***

#### *a) AI-based instant translation for text, audio and video and live conversations*

This technology has existed for some time. Now, with the general availability of generative AI tools, instant translation of audio and video has almost reached the mainstream. Instant translation of live video chats is also being developed (Meta, 2022).

In the long-term, this could mean that at best fewer people, and at worst nobody, will see the need to learn a language, which would have an adverse effect on the language teaching industry. On the other hand, if it stays affordable, it could democratise access to jobs that have been reserved for those who speak English or other languages in demand.

However, it is important to remember that language learning includes cultural knowledge and pragmatics. It is likely that instant translators, even if literally and contextually correct, will not understand cultural and situational contexts. This will lead to many misinterpretations, causing communication breakdowns and related problems. Language learning is also a socially and cognitively beneficial activity and is therefore unlikely to be completely abandoned.

#### *b) Hologram teachers*

Holographic technology for beaming 3D digital versions of teachers into classrooms was demonstrated more than two decades ago (BBC World News, 2000). It is still an expensive technology, but it is being used today, including versions where it is combined with virtual reality (TU Delft, 2022). Some see it as a way of ‘offering greater closeness and warmth for distance learners’ (Ramirez et al., 2022, para 2), keeping everyone safe (Rudra, 2021) as well as scaling classes by having the same teacher appear “live” in several classes (Ramirez et al., 2022; Rudra, 2021). Others see this technology as an opportunity for celebrity teachers to teach classes to anyone anywhere in the world (Lynch, 2019).

Even though the arguments sound benevolent, and there is some benefit in the form of increased teacher and learner presence and interaction, if widely available, hologram teachers could lead to a new form of western-centric education and cultural digital colonisation of other countries. In addition, it would lead to teacher unemployment if one teacher could be “present” and teach many classes “live” at once. It might also lead to decreased presence and interaction if it is used to reduce costs and cut in-person classroom teaching.

#### *c) Loneliness epidemic*

Loneliness, which is a serious health risk, was severely on the rise already in 2018, before the worldwide lockdowns between 2020 and 2022 (DesHarnais Bruce et al., 2019). In the UK this led to the appointment of its first loneliness minister (ibid).

During the lockdown period, the appeal of virtual worlds increased (Barreda-Ángeles & Hartmann, 2022) and millions met up on social VR platforms to hang out with others to chat, play games, or attend concerts. Social VR can help bring people together and cater to their psychological needs during times of isolation in ways that cannot be easily accomplished with other technologies (ibid).

However, what is beneficial during unusual times can be detrimental at other times. If companies, learning institutions and governments push the adoption of immersive technology to replace face-to-face interactions for cost saving, efficiency, convenience, or other reasons, it can ultimately increase loneliness.

#### *d) A trend towards analog*

In certain areas, analog technologies are gaining ground again, such as photography with film (Ilford Photo, 2018)

or music on vinyl records (Mogg, 2023). Interestingly, these trends include young people, who are seen as those who fully embrace digital, online, and virtual life.

Similar to the trend to analog technologies, people might get tired of doing everything virtually, including learning, travelling, and working in the metaverse, and opt to go to a physical school with human teachers and fellow students. When COVID-19 restrictions were lifted, for example, many people went back to attending events physically.

Taken together with other signals, such as “slowbalisation” i.e. a slower form of globalisation (Kupelian, 2020), hyper-localisation (Manane, 2022), and potential threats such as major power cuts (Crerar and Lawson, 2022; Fraser, 2022) that could last for weeks or months, it would be wise not to move our entire lives online, and instead be ready to operate in the physical world when it is necessary. This will only work if analog technologies and physical spaces and interactions are kept attractive and functioning even while we make use of the benefits of online education, work and socialisation.

#### *e) Popularity of decentralised autonomous organisations (DAOs)*

A modern DAO is a bottom-up, decentralised organisational structure in which management and decision-making happen with the help of blockchain technology and tokens (Shuttleworth, 2021) – a kind of Web3 form of a cooperative. Members own their data and control their identities. They also own tokens which give them voting rights within the DAO. There are DAOs for everything from crowdfunding groups to decentralised investment funds as well as philanthropy or socialising. The first DAO for educators, Ed3DAO, was founded in 2022 (Saraf and Peck, 2022). In a Learning DAO, learners become members of a learning community and at the same time earn ownership and will have a say in the direction of the learning organisation (ibid). Even though they have not yet fully developed, and the legal and financial status of DAOs is not yet clear, they have the potential to help language learners and teachers organise their language education from the bottom-up.

#### ***Signal strength of the identified emerging issues***

Some of these signals are still weak, meaning it might take longer for them to have an impact on how the metaverse develops as well as on mainstream language learning. For instance, DAOs are still a very niche phenomena. It will require considerable time for legal frameworks to develop that make them safe and accepted. Currently, it is also only mainly the technically more savvy, Web3 technology literate people who join DAOs.

Hologram teachers, despite the fact that the technological foundations exist, will also not replace established forms of distance teaching very soon as this would require considerable improvements for more natural interactions. Furthermore, the cost as well as complexity of the technology would have to be reduced for hologram teaching to be scalable. However, given the incentive for substantial long-term cost reduction by employing far fewer teachers while still providing some kind of real teacher presence, there is an incentive to drive its development. It is, therefore, not far-fetched to assume that it will be one of the next hyped educational technologies in this decade.

On the other hand, AI translators and generative AI that can be used as a kind of teacher or coach have arrived in the present. Even though they are still flawed, developments now are exponential. Many edtech companies have already added the functionality into their apps and platforms, and we can expect further accelerated adoption. This means we will see the repercussions of wide-scale use more quickly.

The loneliness problem is, unfortunately, already widespread, so it is a strong signal. We can assume that we will see more of its impact, which might lead to people changing how they live, work, and learn. This could mean a tendency towards the metaverse, which is envisioned as a social place where meeting people and doing things together is possible. But if the metaverse disappoints in this regard, it could, coupled with the trend towards analog technologies, lead to people preferring to meet and do things physically in their local area.

In the next section, we will plot these emerging issues together with the vision for the future onto the futures triangle to start answering what the future of language learning with the metaverse might look like.

### Futures Triangle

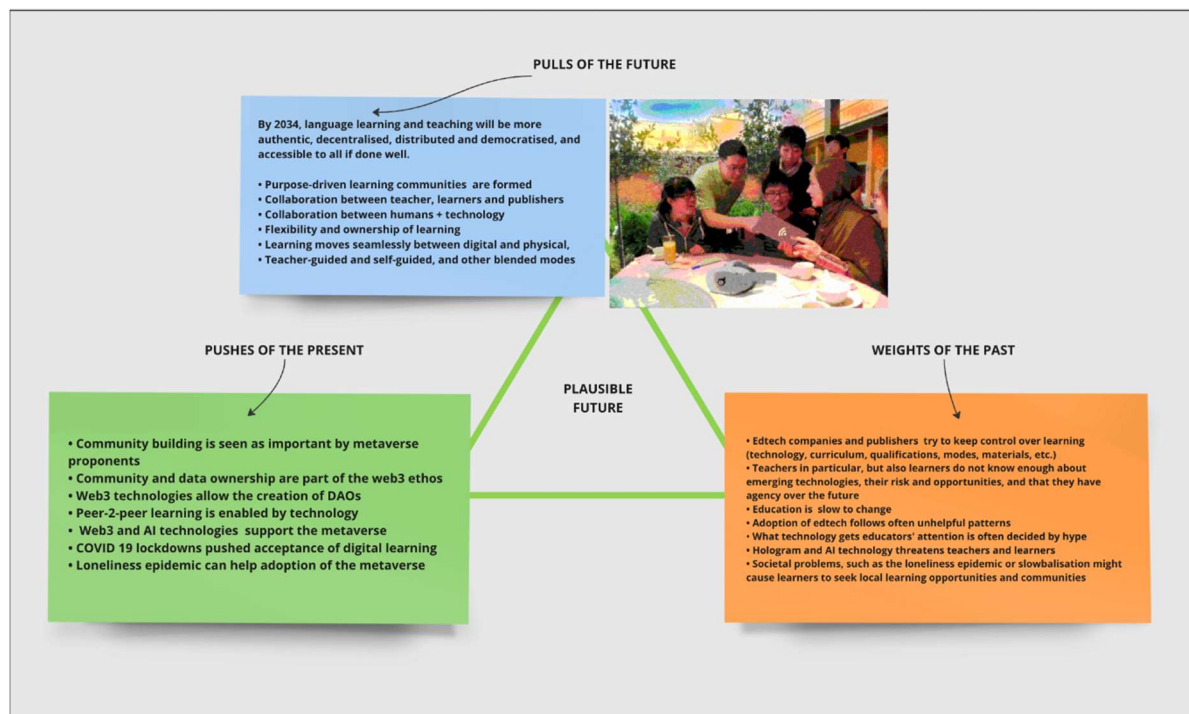


Fig 1: Futures Triangle for language learning with the metaverse (Image: Nergiz Kern).

Mapping the vision onto the Futures Wheel (Inayatullah, 2008), as in Figure 1, can help us see a more balanced picture between the often too positive pull of the future vision, the drivers that push us towards it, and the weights of the past.

Looking at the weights of the past, it is evident that the original vision stated at the beginning of Section 5 and restated in form of the pull of the future in the Futures Triangle is indeed unrealistically positive and difficult to achieve even with the pushes of the present. This shows that the metaverse, and consequently language learning with the metaverse, will not automatically develop into something desirable, but rather that effort needs to be put into lightening the weights of the past and leveraging the pushes of the present.

Before attempting to influence the future, however, it would help to see a coherent and detailed picture of the possible and probable futures. We can do this by employing scenarios.

#### Alternative scenarios of the future(s) of language learning with the metaverse

The power of scenarios lies in the fact that they make different futures more tangible. They add depth by providing details about what exactly a particular future could look like in practice if various combinations of pulls of the future, pushes of the present and weights of the past impact on it. Even without being prompted, when reading scenarios, a person will very likely think about which one is more preferable and which should be avoided.

With so many different variables, it is clear that there could be many different scenarios for how the future of language learning with the metaverse might play out. In the next section, five different scenarios will be created based on the information in Section 5.

### **Five scenarios**

Using the integrated scenario method (Inayatullah, 2013) - which helps reduce blind spots and see alternatives that might not be immediately obvious – the signals, drivers, past weights and pushes of the future from the sections above have been combined to create five scenarios.

#### ***Scenario 1 (preferred) - ‘Power to the Learner’***

Language learning and teaching will be more decentralised, distributed and democratised. The learner will be at the centre of the learning experience and in control of when and what to learn. The interoperable metaverse will allow access to communities and places where the target language is spoken, which will make immersive learning more widely available without the necessity of travelling abroad.

Learning content will be contextual, authentic and dynamic, embedded and coming from the metaverse locations, events and everyday activities taking place online. There will be much less need for contrived course content. Published course material will not be needed much, so publishers will lose some of the control they held over content, diminishing their market power. Learning will be highly personalised, through widely available personal AI assistants that will help learners make sense of the language and culture they encounter.

The teacher will be a curator of metaverse experiences and places, as well as a coach. A teacher will be able to support many learners. They will be highly skilled in their subject matter as well as in using technology, focusing on support and services that AI tools cannot deliver. Teacher training will have adapted accordingly. Learners will own their data and all their experiences, learning, skills and certificates will be collected in their blockchain-based ledger.

#### ***Scenario 2 (disowned) - ‘Tech Monopoly’***

Big tech companies and publishers will keep control over platforms and content, monopolising language education even more than previously. Using technological solutions such as holograms, only a handful of ‘celebrity’ teachers will teach the same predetermined content to massive numbers of students around the world. Content and learning experiences will only be personalised through algorithms. Lessons will be less culturally diverse.

Learner data will be very valuable and collected by the tech companies and publishers. Any learner who wants to opt out will have to opt out from using the metaverse altogether. Personal user data will be used for targeted advertisement through conversational AI avatars that look and behave as if they are human-driven avatars. There will be massive language teacher unemployment and language school and department closures around the world.

#### ***Scenario 3 (integrated) - ‘The Best of Both Worlds’ or ‘Massively Local’***

As with MOOCs or TV/Radio-based teaching before, the ‘Tech Monopoly’ scenario will make learning cheaper and more accessible for the masses, initially causing the traditional language education industry some financial losses. After a while, local support groups and learning communities, as well as teaching and coaching services, will spring up to offer more localisation, personalisation, contextualisation, and individual support for learners who are taking the mass-market, AI-driven and hologram-celebrity teacher taught courses.

In particular, small language schools and large numbers of solo “teacherpreneurs” worldwide will benefit from having high quality, ready-made content available to build their courses around. This professional group will play a vital role in which metaverse platforms and ‘MOOCs’ succeed and which fail.

#### ***Scenario 4 (outlier) - ‘Zero Barrier Communication’***

AI-based instant-translation tools available for use online in the metaverse as well as offline in physical settings will make language learning redundant. Tools and techniques for this already exist, such as those provided by Google, and are becoming exponentially better through Large Language Models and communicative AI. This will initially be adopted massively and quickly, leading to huge time and money savings for learners. It will be the end of foreign language skills as one major factor in getting a job – a major equaliser.

This will result in the collapse of the whole language education industry, affecting publishers, language schools,



teachers, and other stakeholders. However, after a while, people will find out that they have lost other benefits that come with language learning, such as those associated with brain health, in addition to cultural and social aspects. This will lead to some re-emergence of language teaching and learning. Also, initially, the technology will only be reliable for some widely used language pairs that the AI tools are trained on, such as English, French and German. This will mean that language schools, publishers and teachers of more niche languages will offer language education and be able to charge high rates.

**Scenario 5 (outlier) - ‘Reverse Trend’ or ‘Analog is Trendy’**

People will be tired of everything being digital, virtual and onscreen as well as AI-driven. The widespread belief that technology can solve all problems all the time will have waned, and there will be increasing demand for low- or no-tech physical experiences, such as lessons with teachers and other learners in the same classroom in a language school. People will be asking for and schools will be advertising with human-enhanced learning instead of the technology-enhanced learning that will have been the norm for a long time, as the former will be highly valued and schools that provide it will be able to charge a premium. Local language teachers will be in demand, and schools will try to attract them with high salaries and perks. At the same time, language education will have learned from immersive metaverse pedagogies and will incorporate these into the physical realm by creating more authentic, interactive conditions and activities in the school.

**CLA of the five scenarios**

Using Causal Layered Analysis (Inayatullah, 1998), we can deepen these scenarios. Table 1 shows the results of the CLA for the scenarios above.

**Table 1:** CLA of the five scenarios

	<b>Scenario 1 (preferred) - ‘Power to the Learner’</b>	<b>Scenario 2 (disowned) - ‘Tech Monopoly’</b>	<b>Scenario 3 (integrated) - ‘The Best of Both Worlds’ or ‘Massively Local’</b>	<b>Scenario 4 (outlier) - ‘Zero Barrier Communication’</b>	<b>Scenario 5 (outlier) - ‘Reverse Trend’ or ‘Analog is Trendy’</b>
<b>Litany (Headline)</b>	The metaverse - finally a haven for language learners	Big tech and publishers consolidate their power over language learners and their data	An unlikely winner in the edtech world – Teacherpreneurs the real success behind metaverse language learning platforms	AI destroys the language education industry - but there is some hope	Nostalgia sets in – new trend towards tech-free localised language learning in physical classrooms with human teachers
<b>System</b>	- The metaverse is fully developed technologically and widely accessible - There are ethical, safety, and legal guidelines in place - A shift from scarcity and publisher-provided content to an abundance of authentic real-life	- The Big Tech companies and publishers have the financial power and business acumen to monopolise the educational use of the metaverse and dictate rules - Technology is used to exploit	- Open access technology, standards and content allow new learning and business models to be developed  - Societies are good at adapting to the	- As a society, we often seem to be focused on one aspect or one development, missing something else important that is happening in the background until it erupts into mainstream consciousness	- Leaning far to one side often causes a pendulum swing to the other extreme in society - Various factors such as tech-tiredness, climate events, political movement restrictions (e.g. visa requirements or war), energy policies or

	content and interactions controlled by the learner - Learners have control over their learning and data - Teachers highly valued as professionals	learners and replace humans wherever possible - Legislation is slow to regulate new technologies and the market, making the metaverse an unsafe place	disruptions caused by new technologies - New technologies foster innovation in different areas, including education	- Technology that is available open source or cheaply spreads quickly - People favour the path of least resistance even if long-term it turns out not to serve them	threats to the power system, new economic trends, such as a move away from global towards local can lead to a nostalgic view of pre-technology times and adoption of traditional ways of doing things
<b>Worldview</b>	Language learning happens in the real world not in the classroom	Technology rules	There is always an opportunity for entrepreneurial minds	Things always bounce back	Nostalgic view of the past
<b>Metaphor</b>	From content is king to learners are the royals	Learners as peasants of the tech overlords	Teachers as edtech king makers	The king is dead, long live the king	From the digital world in my pocket to my town is my kingdom

As can be seen from the CLA, new technologies can often cause intended as well as unintended economical, cultural, ethical, social and legal consequences, power shifts, and synergies.

Given the difficulty of the task, positively shaping the future of learning with the metaverse can only be achieved if all stakeholders are involved and in agreement. Otherwise, the future of learning in the metaverse will be shaped by technology companies and other traditionally powerful players, such as big publishing houses, towards a future that favours their business models and to the detriment of educators and learners. To prevent this from happening, it is important that language educators see the considerable potential of the metaverse as well as the risks associated with it, and take steps today to work towards the best version of it for language learning and teaching. They also need to be aware that the future is not a given, and that, in fact, there are multiple possible and probable futures, and they can decide on their vision for the future and work towards it.

If the foresight process stops at scenarios, however, it is easy to feel overwhelmed.

**Bridging the temporal gap and creating an emotional connection with the future through Backcasting**

While scenarios serve as condensed narratives that animate the future, they still maintain a clear distinction between the distant future and the present. In contrast, Backcasting (Boulding & Boulding, 1995 in Inayatullah, 2008) closes the temporal gap by referring to the future as if it has already happened, thus making it look achievable.

Research suggests that while raising awareness through information is essential, it is through emotional engagement that we can truly inspire action and incite change (Muller Queiroz et al., 2018). A Backcasting-inspired story can enable language education stakeholders to emotionally connect with the future and accept it as a plausible reality, thus motivating them to take strategic steps towards their preferred future. Ideally, stakeholders will also understand that some of the stages that lead from the present to the desired future are not helpful to any party in the long term, and that they can work together to avoid the worst outcomes to achieve a future that is more humanising and sustainable.

In the next section, the scenarios above have been expanded into a story from the future.

### **An artefact from the future: a story of language learning with the metaverse**

By 2023, the massive hype of the metaverse, NFTs and Web3 was over. Away from the crowds' and media's ongoing curiosity and reporting, tech companies kept quietly working on building and harnessing these technologies and platforms that together would form the future internet. As funding dried up, which was made worse by the worldwide post-COVID recession, hundreds of smaller companies worldwide had to give up, so only the financially strong, big companies dominated the field. In language education, only a handful of companies came out with viable products that were innovative and disruptive enough to still find financing or gain support from big tech companies who were planning to potentially buy them, and they provided immersive live or rudimentary AI-based language learning. Besides technology, the big idea was that the metaverse and any related platforms had to be community-based, so all of these companies tried to build a community around their product or platform, some only jumping on the bandwagon because it was the thing to do.

By 2027, four edtech language learning companies and three of the big publishers had fully established VR, AR and AI-based platforms and products and had managed to create a strong user base and thriving communities. They were popular because they made language learning affordable and available on demand worldwide, offering unprecedented flexibility and thus being able to massively scale teaching. This was helped also by other factors, such as stricter visa regulations for some countries, travel restrictions also due to climate and other environmental events, pandemics, and many people's economic situations. However, this wasn't such good news for teachers, and it did not bring the promised transformative language learning experience and pedagogues that were supposed to make learning better and more efficient, amongst other promises. Some companies harnessed technology, such as hologram teachers, to be able to teach tens of thousands of learners at the same time. Under the guise of peer-2-peer learning, learners had to support each other. But this turned into an inflexible, lockstep, traditional, teacher-centred form of learning that was also culturally very poor. It also created massive language teacher unemployment and closure of local and small online language schools.

By 2029, AI translation tools had finally matured and high-quality instant translations between many different languages was possible inexpensively. Large numbers of disgruntled language learners stopped learning a foreign language altogether, and there was widespread use of these translation apps that were integrated into phones, video conferencing and messaging apps. Even face-to-face conversations could be translated through a microphone-like small device worn by everybody. However, it wasn't long before news of disastrous miscommunications and cultural misunderstandings appeared. People also realised that by giving up language learning they had lost yet another opportunity for socialising and learning about other cultures. The loneliness epidemic became worse, and everyone was stuck in their own small bubble. This caused a counter trend called 'Luddites'. People tried to do as much as possible without using any digital tools. Already a decade before, people had started listening to music on vinyl records and using film for photography again. Now they were joined by language learners. Whereas in the late 1990s and early 2000s technology-enhanced learning was en vogue, now people wanted human-enhanced learning.

By 2032, the disillusionment of learners and teachers, and even some of the tech companies, led to a new wave of businesses. It was easy to find engineers, developers, and other highly qualified staff who were ready to work for less as long as they believed in the purpose and vision of their new employers. Teacher cooperatives and DAOs had sprung up all around the world. Even language learning DAOs, formed by disappointed learner communities who had left the big platforms and who wanted to create their own learning opportunities, joined the teacher and small tech companies. They worked together with purpose-driven smaller tech companies and tech DAOs to create platforms and apps that made use of the immersive internet, AR, VR, and AI in ethical, sustainable and pedagogically sound ways and were culturally very diverse. Teaching had become very diverse too. With so many resources and virtual travel available to language learners, many individual teachers provided a new type of service that combined coaching, mentoring and tailored, highly personalised resource curation, teaching and feedback. The metaverse with its diverse communities and cultures and the large number of teachers with diverse backgrounds made language learning culturally rich and meaningful again, so much so that the widely available cheap, sophisticated conversational chatbots with the ability to teach languages or replace conversation practice partners are only used in combination with teachers, peer-2-peer learning and virtual language immersion trips.

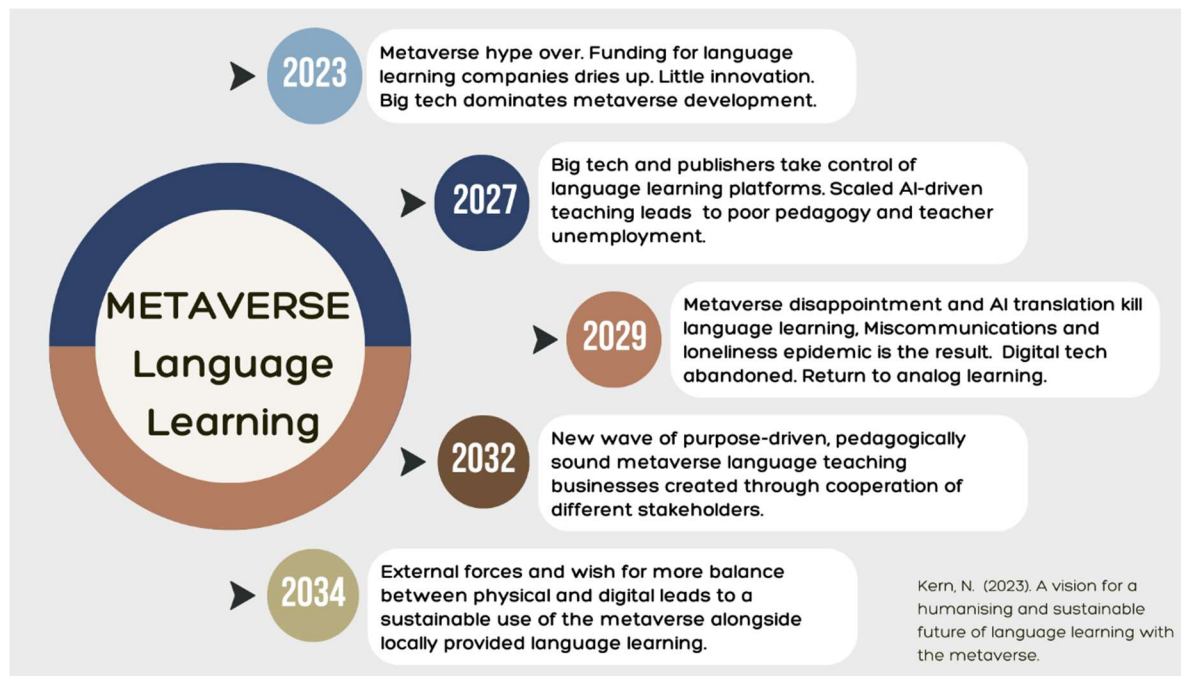


Fig. 2: Backcasting of metaverse language learning stages

Today, in 2034, language learning and teaching is truly decentralised, flexible, democratic and sustainable. In the past years, the co-operatives and DAOs have thrived, but people also realised that despite the great opportunities that technology provides, they want to be able to sometimes switch it all off and be fully present in their physical, natural surroundings with their physical selves. As a result of environmental and other forces, internet connections are also cut sometimes, forcing everyone to be offline at times. For these reasons, people generally feel a greater need to be able to live their lives locally. They support local businesses so that they have fully functioning, self-sufficient communities for times when they are cut off from the rest of the world, or simply in order to lead more environmentally friendly, low-tech, physical lives.

The trend towards “slowbalisation” and hyper-localisation, which had already started a decade ago, has now fully arrived in the mainstream. This led to some successful online metaverse companies offering localised language learning services in collaboration with publishers. Solo “teacherpreneurs”, who know local people, their culture and needs, have created their own small language teaching businesses catering to these needs, combining what the metaverse has to offer with face-to-face learning activities. Finally, people are able to balance their physical and digital lives, moving seamlessly from one to the other to continue their learning, work, entertainment, exercising, and so on, depending on how they feel or what the current situation makes feasible – a truly humanising and sustainable way of living and learning.

### Conclusion

Despite having become overshadowed by the hype of other technologies, the metaverse continues to be developed. This future iteration of the internet offers significant potential for language learning through interactive and immersive virtual worlds, interconnectivity, and social interaction. It presents unique opportunities for experiential and active learning, realistic and contextualised role-plays, collaborative learning, and field trips without physical constraints.

However, challenges such as privacy concerns, technology monopolisation, and accessibility barriers must be addressed to ensure a safe and inclusive metaverse. Ethical guidelines and data ownership are crucial considerations for a widespread use of the metaverse. Additionally, emerging issues like AI-based instant translation should be

carefully navigated to strike a balance between democratising access and maintaining the value of language learning.

Language educators should proactively engage in its development and leverage foresight to shape its educational use. In fact, there is a need for each stakeholder community – teachers, learners, schools, publishers and edtech companies - to engage in their own futures thinking to determine their preferred futures. Having done that, ideally they will realise that they need to work together towards a future that benefits all.

The Backcasting story can help achieve this future faster as it can engage everyone emotionally, bridge the gap between the present and the future, and serve as a discussion starter. Future scenarios in the story that are not helpful to any of the stakeholders in the long term can be discarded, and efforts, time and financial resources can be used to collectively achieve a more humanising and sustainable language learning future by making the most of the considerable potential of the metaverse to enhance language learning while at the same time ensuring that it is a safe, culturally diverse place conducive for social and immersive learning.

## References

- Anderson, J., & Rainie, L. (2022, June 30). *The Metaverse in 2040*. Pew Research Center. <https://www.pewresearch.org/internet/2022/06/30/the-metaverse-in-2040/>
- Ball, M. (2021, Jun 29). *Framework for the Metaverse*. MatthewBall.vc. <https://www.matthewball.vc/all/forwardtothemetaverseprimer>
- Barreda-Ángeles, M. & Hartmann, T. (2022). Psychological benefits of using social virtual reality platforms during the covid-19 pandemic: The role of social and spatial presence. *Computers in Human Behavior*, 127, 107047. <https://doi.org/10.1016/j.chb.2021.107047>
- Bartolo, T. (2023). *The Metaverse is Dead – The beginning of a new era with a problem-first approach*. Substack. <https://todiba.substack.com/p/the-metaverse-is-dead?sd=pf>
- Bax, S. 2003. 'CALL—past, present and future'. *System* 31(1): 13–28. [https://doi.org/10.1016/S0346-251X\(02\)00071-4](https://doi.org/10.1016/S0346-251X(02)00071-4)
- BBC News. (2000, January 13). *Meet the hologram teacher*. [http://news.bbc.co.uk/2/hi/in\\_depth/education/2000/bett2000/600667.stm](http://news.bbc.co.uk/2/hi/in_depth/education/2000/bett2000/600667.stm)
- Bosworth, A. (2021, September 27). *Building the Metaverse Responsibly*. Meta. <https://about.fb.com/news/2021/09/building-the-metaverse-responsibly/>
- Choi, S. J., Cooper, D., Szewczyk, B. & Vos, S. (2023). Regulating the Metaverse in Europe. *Covington Global Policy Watch*. <https://www.globalpolicywatch.com/2023/04/regulating-the-metaverse-in-europe/>
- Copenhagen Institute for Futures Studies. (2023). *Metaverse Delphi Study: A delphi study on the development of the metaverse towards 2030*. <https://cifs.dk/metaverse/>
- Crerar, P. & Lawson, A. (2022, November 1). *Government tests energy blackout emergency plans as supply fears grow*. Guardian. <https://www.theguardian.com/business/2022/nov/01/government-tests-energy-blackout-emergency-plans-as-supply-fears-grow>
- Cuban, L. (1992). *Teachers and Machines: The Classroom Use of Technology since 1920*. Teachers College Press.
- Cuhls, K.E. (2019). Horizon Scanning in Foresight – Why Horizon Scanning is only a part of the game. *Futures & Foresight Science*, 1(1). <https://doi.org/10.1002/ffo2.23>
- Davis, H.A. (2004, September 23). E-learning hasn't lived up to the hype. *PennToday*. <https://penntoday.upenn.edu/2004-09-23/features/e-learning-hasn%E2%80%99t-lived-hype>
- DesHarnais Bruce, L., Wu, J.S., Lustig, St.L., Russell, D.W. & Nemecek, D.A. (2019). Loneliness in the United States: A 2018 National Panel Survey of Demographic, Structural, Cognitive, and Behavioral Characteristics. *American Journal of Health Promotion* 2019, Vol. 33(8) 1123-1133.
- Fraser, D. (2022, February 1). *Should we expect more power cuts in future?* BBC. <https://www.bbc.com/news/uk-scotland-scotland-business-60213578>
- Hwang G.-J. & Chien S.-Y. (2022). Definition, roles, and potential research issues of the metaverse in education: An artificial intelligence perspective. *Computers and Education: Artificial Intelligence*, 3, 100082. <https://doi.org/10.1016/j.caeai.2022.100082>

- Ilford Photo. (2018). Ilford Photo Global Film Users Survey, The Results Are In. Ilford Photo. <https://www.ilfordphoto.com/ilford-photo-global-film-users-survey-the-results-are-in/>
- Inayatullah, S. (1998). Causal layered analysis: Poststructuralism as method. *Futures*, 30(8), 815-829. [https://doi.org/10.1016/S0016-3287\(98\)00086-X](https://doi.org/10.1016/S0016-3287(98)00086-X)
- Inayatullah, S. (2008). Six pillars: Futures thinking for transforming. *Foresight*, 10(1), 4-21. <https://doi.org/10.1108/14636680810855991>
- Inayatullah, S. (2013). Futures studies: Theories and methods. In N. Al-Fodhan (Ed.) *There's A Future: Visions for a Better World* (pp. 36–66). T.F. Editores, S.L.C.
- Jagannathan, S. (2023, February 15). Education meets the metaverse: Reimagining the future of learning. *eLearning Africa News*. <https://ela-newsportal.com/education-meets-the-metaverse-reimagining-the-future-of-learning/>
- Johnson, S. F. (2018). The technological fix as social cure-all: Origins and implications. *IEEE Technology and Society Magazine*, 37(1), 47-54 <https://doi.org/10.1109/MTS.2018.2795118>
- Kern, N. (2021, June 11). *What the metaverse means for language learning and how you can prepare for it* [Presentation]. Future of English Language Teaching Conference. <https://nergizkern.com/foelt-conference-what-metaverse-means-language-learning-how-prepare/>
- Kupelian, B. (2020). *Predictions for 2020: "Slowbalisation" is the new globalisation*. PwC Global Economy Watch. <https://www.pwc.com/gx/en/research-insights/economy/global-economy-watch/predictions-2020.html>
- Lee, P. (2023, May 9). South Korea's metaverse: A \$5.54 billion industry by 2023. *The Pickcool*. <https://www.pickcool.net/south-koreas-metaverse-a-5-54-billion-industry-by-2023/>
- Lynch, M. (2019, August 7). *Using holograms as classroom teachers: Science fiction or reality?* The Tech Advocate. <https://www.thetechadvocate.org/using-holograms-as-classroom-teachers-science-fiction-or-reality/>
- Manane, W. (2022, August 30). *How AI Creates New Opportunities Through Hyper-localization*. Marketing Artificial Intelligence Institute. <https://www.marketingaiinstitute.com/blog/ai-hyper-localization>
- Meta. (2022, October 19). Using AI to Translate Speech For a Primarily Oral Language. <https://about.fb.com/news/2022/10/hokkien-ai-speech-translation/>
- Mogg, T. (2023). Vinyl records outsell CDs for first time in 35 years. *Digital Trends*. <https://www.digitaltrends.com/home-theater/vinyl-records-outsell-cds-for-first-time-in-35-years/>
- Muller Queiroz, A. C., Kamarainen, A., Preston, N. & Da Silva Leme, M. I. (2018). Immersive Virtual Environments and Climate Change Engagement. *Proceedings of the immersive learning research network*, 153e164. <https://doi.org/10.3217/978-3-85125-609-3-27>
- Peter, S, Riemer, K. & Hovorka, D. (2020). Artefacts from the Future: Engaging Audiences in possible Futures with Emerging Technologies for better Outcomes. *Research Papers*. 72. [https://aisel.aisnet.org/ecis2020\\_rp/72](https://aisel.aisnet.org/ecis2020_rp/72)
- Ramirez Lopez, C. V., Castaño Sanchez, L., & Aldape Valdés, P. (2022, January 12). *Missing face-to-face interaction? Try becoming a 'hologram professor.'* Times Higher Education. <https://www.timeshighereducation.com/campus/missing-facetoface-interaction-try-becoming-hologram-professor>
- Saraf, V. & Peck, M. (2022, September 19). What can decentralized organizations accomplish in education? *Getting Smart*. <https://www.gettingsmart.com/2022/09/19/what-can-decentralized-organizations-accomplish-in-education/>
- Selwyn, N. (2021). *Educational technology: Key issues and debates* (3rd ed.). Bloomsbury Academic.
- Shuttleworth, D. (2021, October 7). *What is a DAO and how do they work?* Consensys. <https://consensys.net/blog/blockchain-explained/what-is-a-dao-and-how-do-they-work/>
- Stephenson, N. (1992). *Snow crash*. Bantam Books.
- TU Delft Teaching Academy. (2022, March). *Transform your education with Immersive technologies: Here are some examples of the NewMedia Centre*. <https://www.tudelft.nl/teachingacademy/previous-newsletters/the-educator-march-2022/transform-your-education-with-immersive-technologies-here-are-some-examples-of-the-newmedia-centre>

- Walbank, J. (2023, January 20). *Top 10 companies investing in the metaverse in 2023*. Mobile Magazine. <https://mobile-magazine.com/articles/top-10-companies-investing-in-the-metaverse-in-2023>
- Wallace, C., Rosenberg, L., Pearlman, K. & Choudhary, B. (2023). *The Metaverse and Standards* [White paper]. Standards Australia. [https://www.standards.org.au/getmedia/beb254c9-fd95-4602-bc7b-8de12ba91287/H2\\_3061\\_Metaverse\\_report.pdf.aspx](https://www.standards.org.au/getmedia/beb254c9-fd95-4602-bc7b-8de12ba91287/H2_3061_Metaverse_report.pdf.aspx)
- Whitford, E. (2022, September 3). *Metaversity is in session as Meta and Iowa's VictoryXR open 10 virtual campuses*. Forbes. <https://www.forbes.com/sites/emmawhitford/2022/09/03/metaversity-is-in-session-as-meta-and-iowas-victoryxr-open-10-virtual-campuses/>
- World Economic Forum. (2023). *Interoperability in the Metaverse* [Briefing paper]. <https://www.weforum.org/reports/interoperability-in-the-metaverse/>
- XR Safety Initiative. (n.d.). *Metaverse safety week*. XRSI. <https://xr.si.org/>
- Zitron, E. (2023, May 8). *RIP Metaverse: An obituary for the latest fad to join the tech graveyard*. Business Insider. <https://www.businessinsider.com/metaverse-dead-obituary-facebook-mark-zuckerberg-tech-fad-ai-chatgpt-2023-5>

### Appendix A

#### Google Trends Search Volume Analysis

Figure 1 shows the decrease of the search term ‘metaverse’ from February 2022 onwards, after a sharp rise between November 2021 and February 2022, while at the same time there has been an increase in the search term ‘generative AI’. Figure 2 shows the exponential increase for the search term ‘chatGPT’ in the first half of 2023.

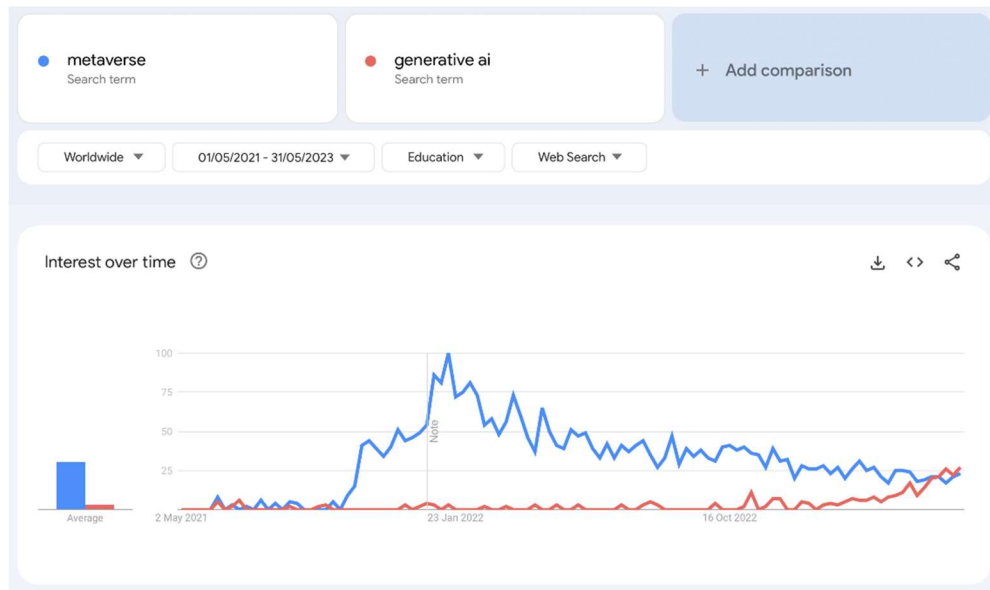


Fig. 1: Search terms ‘metaverse’ and ‘generative ai’ in the ‘Education’ category between May 2021 and May 2023.

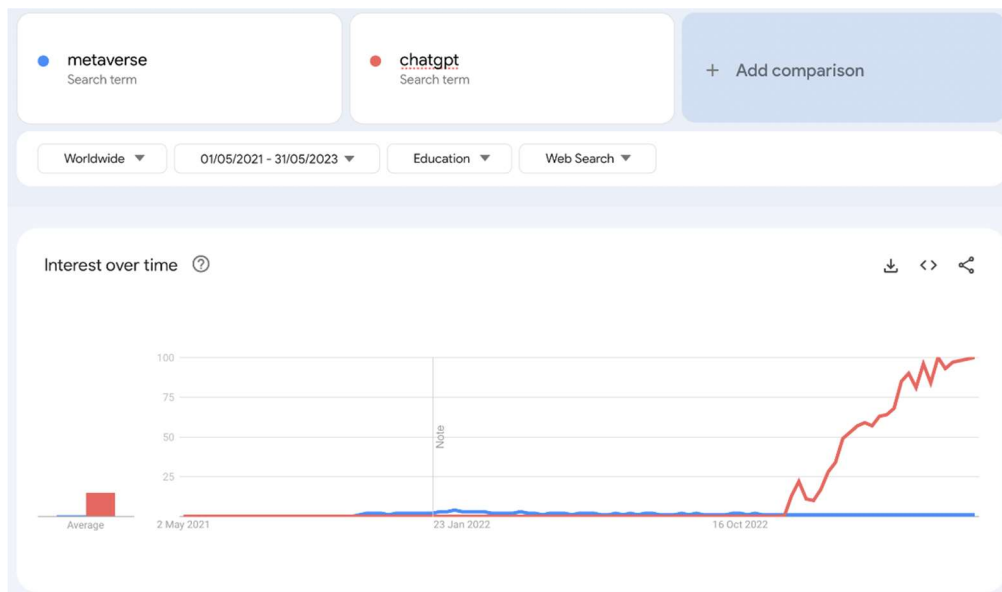


Fig. 2: Search terms ‘metaverse’ and ‘chatGPT’ in the ‘Education’ category between May 2021 and May 2023.