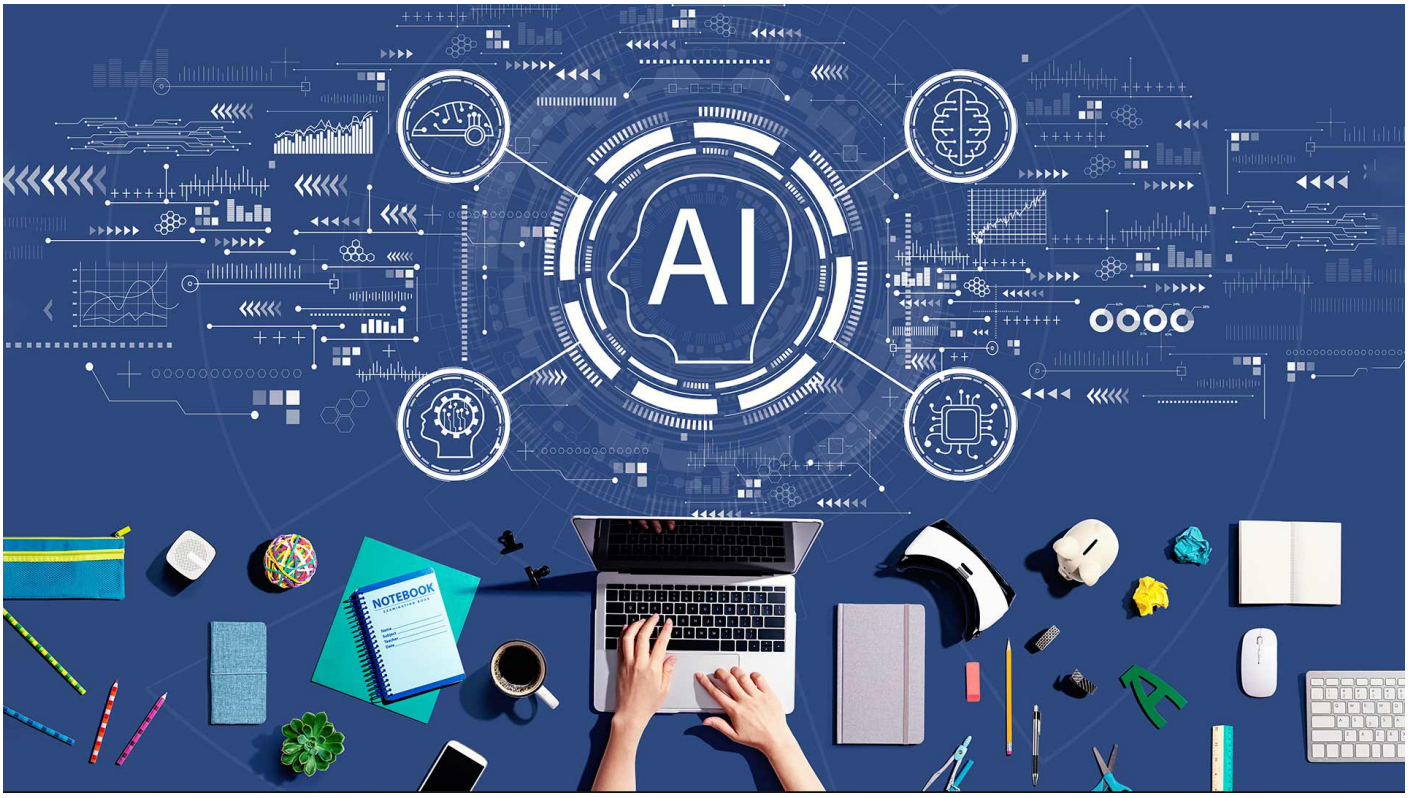
10 AI technologies to explore in 2024 if you are a teacher



How can you create better resources for your classes? Is there technology that helps you provide feedback to your students? Using **artificial intelligence in education** can help you.

Tec de Monterrey's **educational technology** experts have tried out and evaluated nearly **100 tools** that use **AI** to provide a **shortlist** of those they considered **most useful for teachers**.

A **Top 10 of AI applications and tools** that help in **different stages** of the ***teaching-learning process*** was presented during **IFE Conference 2024** (the Tec's educational innovation conference):

- **Artificial intelligence tools for developing educational resources:**

1. **Canva Magic Design: Design resources for your classes without needing to be a designer**
2. **Adobe Firefly: Images for your classes**
3. **Fliki: Create videos the easy way**
4. **Analysis of cognitive-affective states in universities**

- **How to have your own virtual assistant with AI:**

5. **Co-pilot: Get organized or create tasks**

6. **Grammarly: Check spelling and grammar**
7. **Wolfram Alpha: Support in Mathematics, Physics, and Chemistry Contexts**

- **Evaluate and provide feedback with AI**

8. **Gradescope: Grade quickly and efficiently**

- **Personalize your students' learning**

9. **RealizeIT: Provide personalized education**

- **Virtual experiences with AI**

10. **Virtual Speech: A Tool for learning and reinforcing languages with virtual reality**

Bonus: Research Rabbit: An AI tool for researchers

EduTools Tec: More technologies that enrich the teaching-learning process

AI tools for developing educational resources

Generative AI allows teachers to **create classroom content** such as **text, images, audio, videos, 3D models**, and **presentations**, said **Irving Hidrogo**, Director of Artificial Intelligence Education at the Tec.

*"As teachers, we're probably not experts in image editing, but AI gives us the opportunity to become **(content) creators**,"* Hidrogo said.

The director discussed how applications such as **Midjourney** and **DALL-E 2** can be used to create realistic and conceptual images.

He also discussed the **possibilities and risks** of using tools such as **ChatGPT**, which is agile but can sometimes still produce unreliable results.

*"It's not about the machine doing everything for us. We need to have **critical thinking** skills to be able to **discern and decide**,"* he added.

These are the tools that the expert recommends:

1. Canva Magic Design: Design without being a designer

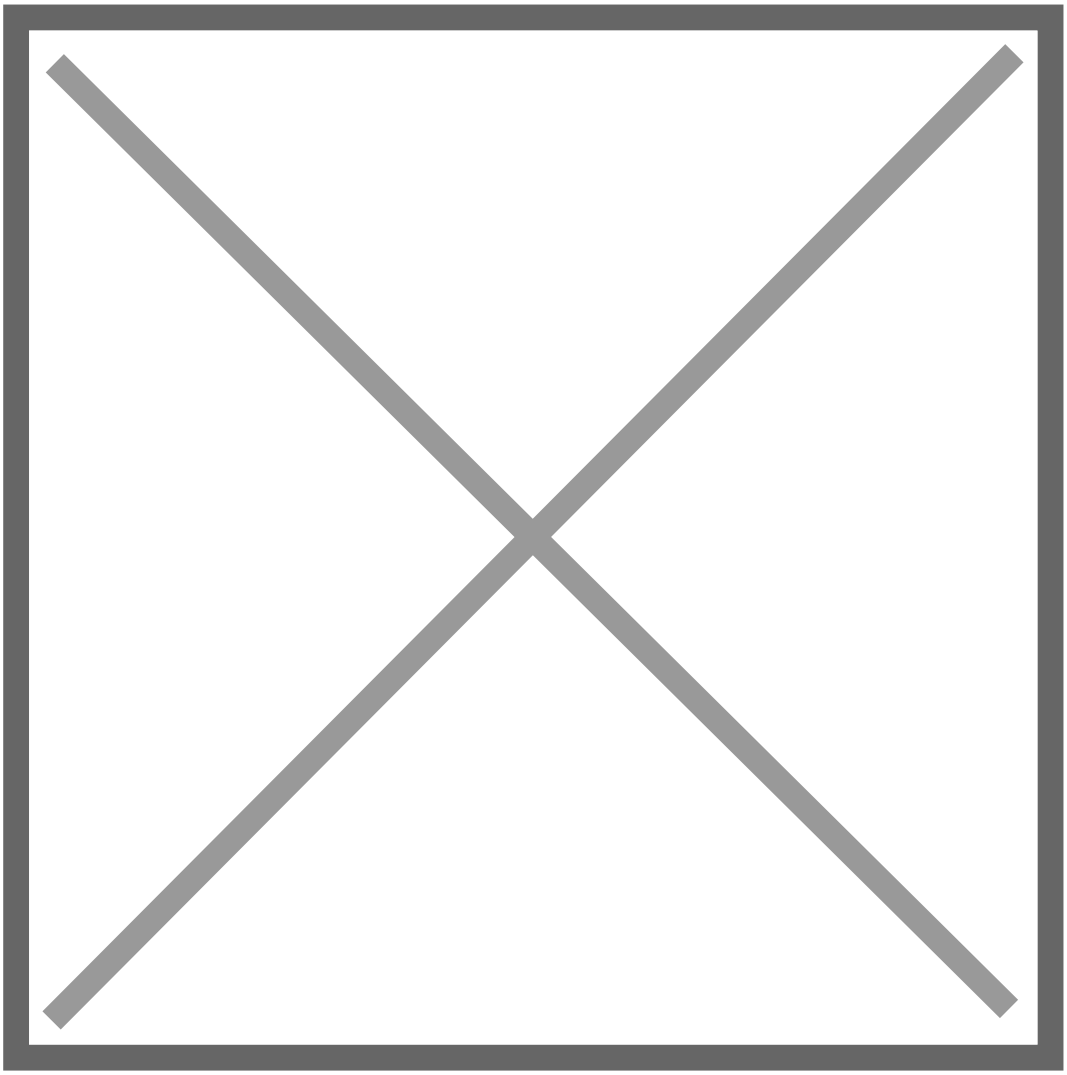
This is a **graphic design** and **diagram generation tool** that works as an assistant to create content such as **infographics** and **presentations** in a clear way.

*"**Canva** has added AI to allow you to make layouts and diagrams in a simple way. You can ask your students for projects in which they create a poster for their task or research,"* Hidrogo said.

Examples of what this tool is for include:

1. *It allows you to create infographics that summarize a topic in a clear and attractive way.*
2. *It has pre-designed presentations that you can use for your classroom sessions.*
3. *You can suggest that your students use it to create posters for their tasks and research.*

This **video tutorial will allow you to follow an animated step-by-step presentation with Artificial Intelligence** for your classes.



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2. Adobe Firefly: Images for your classes

This is an illustration editing, **image** and **graphic design generation** tool assisted by generative Artificial Intelligence**.**

You can enhance your **educational resources** with some **text instructions** (known as ***prompts***) with **Adobe Firefly** , said Hidrogo, allowing you to:

1. *Create illustrations for your presentations.*
2. *Improve educational resources used in the LMS (Learning Management System).*
3. *Create images or videos that will help you explain a topic.*

It is also integrated into **Adobe tools** and can work, for example, with **Photoshop**, **Illustrator**, and **InDesign**.

This video shows you **how to start using this tool** if you don't know how to yet.

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https://youtu.be/dthCyhug0Hk?si=waCNajUk1MSBWOBy

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3. Fliki: Create videos the easy way

This is a **tool** with which you can easily **create and edit videos**.

"A tool like Fliki can be a good solution if we don't have video production and editing skills.

*"We can create videos by **explaining** what we're looking for,"* said Hidrogo.

The platform uses several **templates** for choosing a video style according to the teacher's indications.

This tool allows teachers to:

1. ***Create videos** to be used with the **flipped classroom** methodology.*
2. *Produce videos that **help them carry out laboratory practice** or **for use with academic software**.*
3. *Stimulate **students' interest** and more effectively hold their attention.*

https://youtu.be/dDRPJGjT_Ds?si=A1mYLkvLaTcho4xz

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4. Analysis of cognitive-affective states

Cognitive-affective states are determined during the class through **AI face analysis**, whether in face-to-face, online, or hybrid format.

*“We’re going to see different universities, research centers, and companies offering **academic experiences** with the possibility of analyzing students’ cognitive-affective states through AI face analysis,”* said Hidrogo.

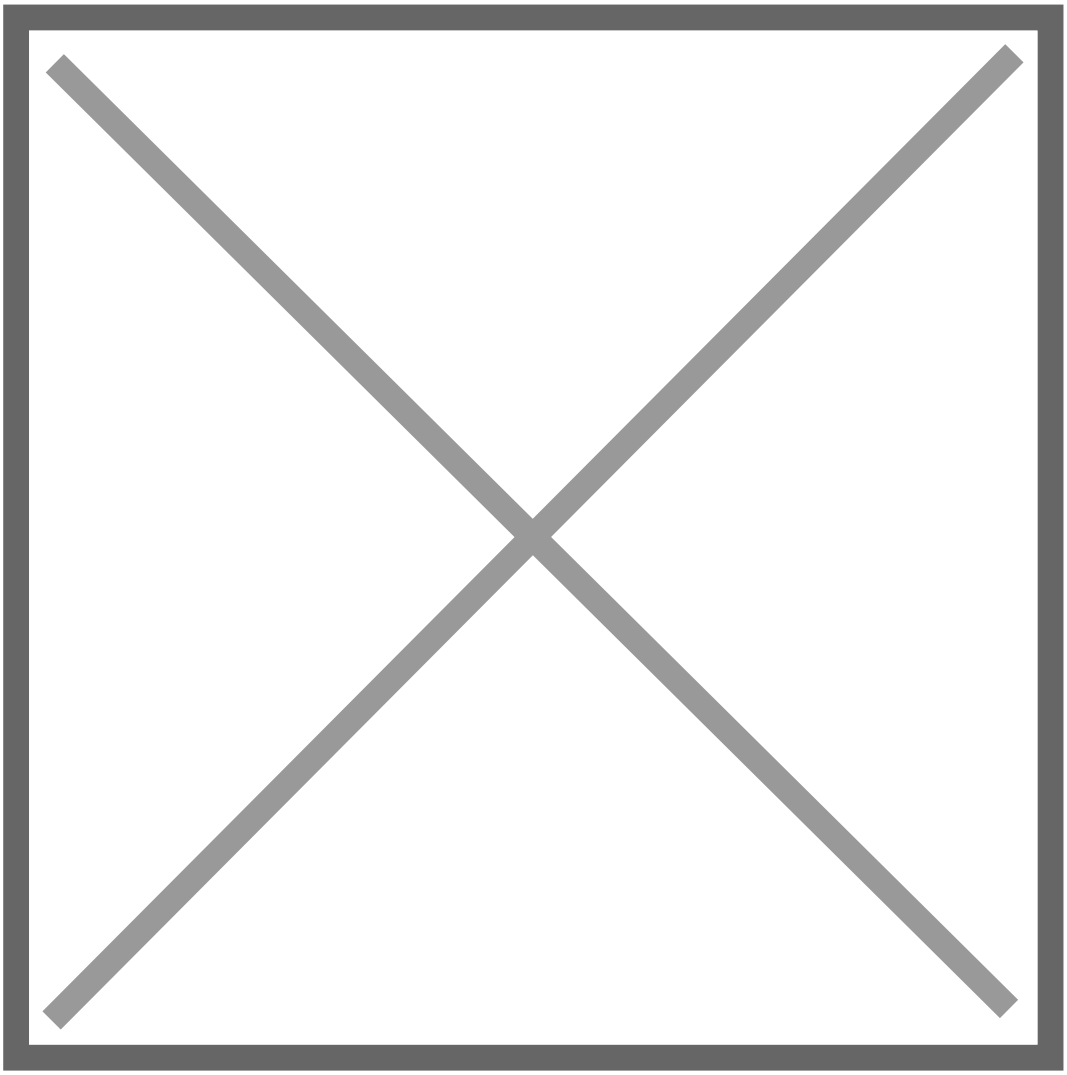
This will be possible through the analysis of **micro expressions** during face-to-face or online sessions, he added.

Teachers will then be able to obtain a report that **will allow them to make adjustments in the way they teach their subject**.

*“We’re developing it at the **Tec** with the European company **Neurologica**, and we’re doing research, development, and piloting together that will allow us to carry out the project successfully with special care for **data management**,”* Hidrogo said.

This will allow them to:

1. *Provide academic communities with **integrated reports to support the redesign of pedagogical moments** in courses.*
2. *Offer teachers a **view of cognitive-affective states** in their sessions in order to make adjustments to their classroom dynamics.*



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How to have your own virtual assistant with AI

Arturo Ayala, leader of the Tec's Educational Technology Innovation Projects, spoke about the evolution of virtual assistants.

*"We've seen **virtual assistants** evolve, especially for education. **Generative AI** has modified and empowered their capabilities,"* he said.

Ayala said that **assistants will not replace the work of teachers** but will instead **enhance** their activities**.**

5. Co-pilot: Get organized or create tasks

This is a **smart assistant** incorporated into the **Microsoft** portfolio for the generation of content within tools such as Word, Powerpoint, Excel, and others in the **Office suite**.

*"Because it's all integrated into the suite, you're in the **Co-pilot ecosystem**, and we can integrate it with any of the Microsoft solutions to create presentations and other content,"* Ayala explained.

He also pointed out that one of its advantages is the generation of **knowledge bases** based on teachers' courses.

Teachers can use it:

1. *As **a complementary support** for **writing** and **creating academic resources.***
2. *To receive **suggestions for resources** to reinforce learning.*
3. ***To facilitate the reading of long documents.***
4. ***To** create **graphs** and **tables**.*

https://twitter.com/Microsoft/status/1747004053295337555

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6. Grammarly: Check spelling and grammar

This is an **assistant for editing**, **writing, spelling, syntax, and tone suggestions**.

*"It serves to ensure that a piece of content is **written correctly**, in terms of both form and tone, and to **facilitate the translation** and **adaptation of materials**,"* Ayala explained.

He mentioned the launch of the Grammarly Education project, which in addition to its ability to **structure documents** correctly, incorporates generative AI functions to:

1. ***Review grammatical and spelling errors** in teaching and learning materials**.***
2. *Review **academic papers written in English, such as theses, articles, and essays**.*
3. ***Facilitate the translation** and adaptation of educational materials from Spanish to English.*

https://www.instagram.com/p/Criz6_cO4rO/

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7. Wolfram Alpha: Support in Mathematics, Physics, and Chemistry Contexts

Ayala explained that **this assistant** uses **machine learning** ecosystems and is focused on problem solving in mathematics, physics, and chemistry contexts.

"*If* ***we add ChatGPT to the capability of Wolfram Alpha,*** *we can get to an advanced level****,"*** he said***.***

This tool can support educational tasks such as:

1. *Simplifying algebraic expressions and performing symbolic calculations.*
2. *Solving differential equations and representing their solutions visually.*
3. *Tackling physics problems and performing engineering-related calculations.*

https://twitter.com/WolframAlphaES/status/1719157239171207365

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Evaluation and feedback

Sadie Guerrero, the Tec's Director of Educational Technology Solutions, addressed the trend of **using AI** to **optimize time**.

"By ***recognizing text****, whether in digital or paper documents, AI helps optimize evaluation and feedback.*

"The teacher can associate a series of ratings and feedback with these documents," Guerrero said*.*

8. Gradescope: Grade quickly and efficiently

This is a **platform** that **optimizes** activity **evaluation and feedback.**

"After ***recognizing*** *a series of texts,* ***it groups all the students' answers into clusters****, and the teacher can make an association of these answers at the end,"* Guerrero said*.*

She pointed out that this way the teacher can **assign a score** so that groups of students will get immediate feedback as they turn in assignments.

https://youtu.be/nJp_NN1oFcw?si=9AKmfE2ZfwFXar1G

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Personalize your students' learning

This is an **educational strategy** that uses technology based on **data analytics** to tailor education and create a **personalized learning path** that is effective and efficient for students.

The path is based on their performance level, profile, and learning needs.

*"We can **identify** the kind of **actions** our students need,"* Guerrero says.

This is possible through **diagnostics or quizzes** that detect different gaps students may have in different contents.

9. RealizeIT: Provide personalized education

This is a **platform** that **adapts and personalizes** students' **learning experiences.**

*"It allows us to implement it in subjects that are **complex in content** and allows us to **align students' knowledge**,"* Guerrero added.

The technology continuously measures each learner's **knowledge and ability** so that it can map, shape, and drive a personalized learning experience.

Students can **achieve course objectives** from the guidance it provides.

https://youtu.be/613eVgI2enQ?si=kuXsb9vbbpfJgcDI

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Virtual experiences with AI

AI is being used in virtual agents, natural language processing, and adaptation to **virtual environments**.

*"These are trends that are starting to intersect, such as when we talk about how AI is impacting the **metaverse** or everything that's **extended reality**,"* Ayala said.

Regarding virtual agents, he pointed out that it is possible to interact and find avatars that are already programmed with certain personalities and are capable of generating **pleasant interactions** for users.

In addition, aspects such as **natural language** and accessibility allow users to communicate with the metaverse in simpler and more direct ways.

10. Virtual Speech: A tool for learning and reinforcing languages with virtual reality

This tool can be used to **develop communication skills**.

It is an **application** for the **Oculus Quest** Virtual Reality headset to interact through an avatar in the language you want to develop.

*"This tool allows us to **simulate safe cases** and situations so that people can practice new languages.*

"Users can try out a debate, an auditorium presentation, or an interview, all in a different language with immediate feedback," he said.

https://twitter.com/vrspeech/status/1691739864297836700

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Bonus: Research Rabbit: An AI tool for researchers

This is a tool for **searching and organizing** research articles and identifying context.

*"We can **identify the impact in different areas we're researching**, map the status of a term we're looking for, and map the distribution of papers, how they're published, see their relevance, and the number of citations,"* Ayala said.

Within this free tool's functions, it is possible to add additional **knowledge bases**, such as **Google Scholar**.

It also permits notifications of trends in certain research points and alerts when a new article is published.

- **Educational use**

1. *Exploring and structuring academic articles and identifying the context.*
2. *Performing agile and accurate searches in academic databases.*
3. *Creating visual concept maps to structure and link ideas.*
4. *Examining academic patterns and trends to discover research topics.*

https://youtu.be/W1W51rYJA3I?si=kH2WVs_4dRS4dqt0

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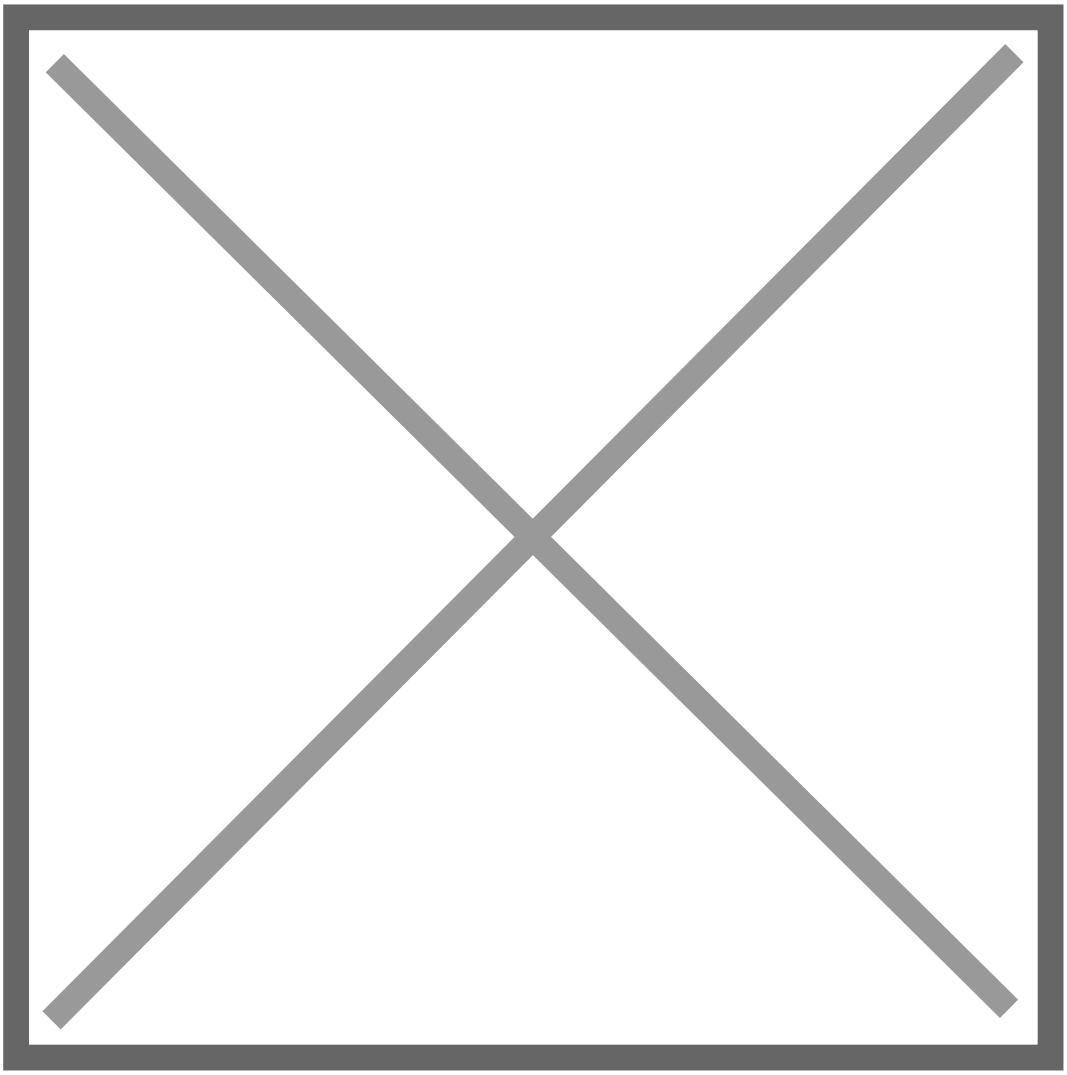
EduTools: The Tec’s platform for educational technologies

Bertha Saldívar, the Tec’s Director of Educational Technologies, pointed out that it is important for universities to build a **technology ecosystem**.

She said that teachers at **Tec de Monterrey** have options available on the **EduTools platform**, where colleagues share experiences with the use of educational technologies.

*“There’s a **collection of the 10 technologies** that we share and the academic software portfolio for the development of knowledge and disciplinary skills,” she said.*



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