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Tools of Engagement

Andrew Douch
EVOLVEDUCATION

The global computer game industry now makes more money annually than the movie and music industries combined! Clearly game makers are doing something that is working for them; something that effectively draws people in and keeps them coming back for more. If only we teachers could identify what magic sauce is! If we can identify what it is about computer games that captures the interest of people and keeps them hooked, and then use those same strategies in our teaching, perhaps our students would be as addicted to classroom learning as they are to playing computer games.

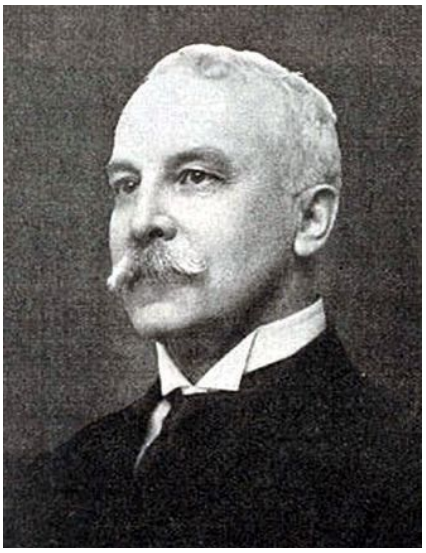
When I've asked audiences what computer games do so effectively, people give many answers. We will take some time to consider that very question together.

In this presentation we will be exploring a number of apps and for each, I encourage you to consider the app against the attributes you have listed above.

Principles for choice of apps

Harrington Emmerson, an American business theorist and efficiency engineer, was a prominent figure in the industrial revolution. In 1912 he wrote a landmark book titled The 12 Principles of Efficiency. In it he wrote:

"As to methods there may be a million and then some, but principles are few. The person who grasps principles may successfully select his own methods. The person who tries methods, ignoring principles, is sure to have trouble."



Harrington Emmerson. Public Domain Image

I don't think this has ever been truer than when it comes to the use of educational technology in teaching and learning. Often teachers flock to the "new shiny"—that app that has just turned up and the race is on to see who can get points for using it first with their students.

It is much wiser to first evaluate an app under the scrutinising light of some principles. You can, of course, devise your own set of principles by which to evaluate apps.

Some principles govern whether an app even can be used:

- Is it legal?
- Is it cyber-safe?
- Are students old enough/mature enough for it (and old enough to meet the terms of service)?
- Is it costly/within budget?

But I want to explore three principles that are often overlooked. They shouldn't be, but very often the decision about what apps to use is not made by teachers but by the IT

Department. They will certainly look at the points above before making software available to staff. Rarely, in my experience, do they look at the principles below. That is the responsibility of teachers!

1. Does it take us somewhere new?
2. Does it solve a pedagogical problem?
3. Is it a downhill tool?

1 Does it take us somewhere new?

It's not uncommon to see students and teachers using an educational technology that more or less duplicates what they could do using pen and paper – or another app that they already have. I don't think it's worth purchasing and learning to use an app just because it is new. If it doesn't let us do something that we can't do without the app, I think we should pass it by.

2 Does it solve a pedagogical problem?

Just because an app is engaging, doesn't mean that we should use it. Unless it solves some kind of problem, I don't think there is a place for it.

3 Is it a downhill tool?

"Downhill" is a term I use to describe tools that continue to be used by someone without the need to be reminded or encouraged to do so—their use continues powered by their own momentum.

Sometimes institutions spend a lot of money on technology that sits more-or-less idle. Often this is the case with state-of-the-art software packages like the Adobe Creative Cloud Suite of tools (Photoshop, Audition, Illustrator, InDesign, Lightroom, Premiere, After Effects, etc). They are fantastic tools—really fantastic. But they have quite a steep learning curve so unless a teacher is fairly computer savvy and has a fair bit of time at their disposal, they see it as "one of those things I'll get around to when I have time" and that rarely happens. These are uphill tools.

A downhill tool on the other hand is one that you will find yourself using again and again—you won't want to stop! There are several things that all downhill tools have in common:

- Downhill tools save time. If a tool saves you time, then you will keep using it because abandoning the tool will cost you time!
- Downhill tools are intuitive. If you open the tool and know what to do without having to read documentation or help files or ask someone for help, then you are much more likely to start using the tool, and then keep coming back. On the other hand, complicated tools—while they sometimes can be put to great use by the right person with the right need, are generally tools that I find don't work well in educational settings, for most teachers.
- Downhill tools appeal to students. I've tried many different tools, apps, and platforms with students, and sometimes I am surprised by what they resonate

with. Sometimes the apps that I think are fantastic, they look at and say ‘meh’. Then others that I didn’t think were that great they can’t get enough of! For this reason I think it’s a good idea to test any new app with a small group of students before you invest too much time developing it or use it with your students.

Again as we explore some of my favourite apps, , I encourage you to consider the app against these principles.

Some of my favourite apps

The Wheel of Names

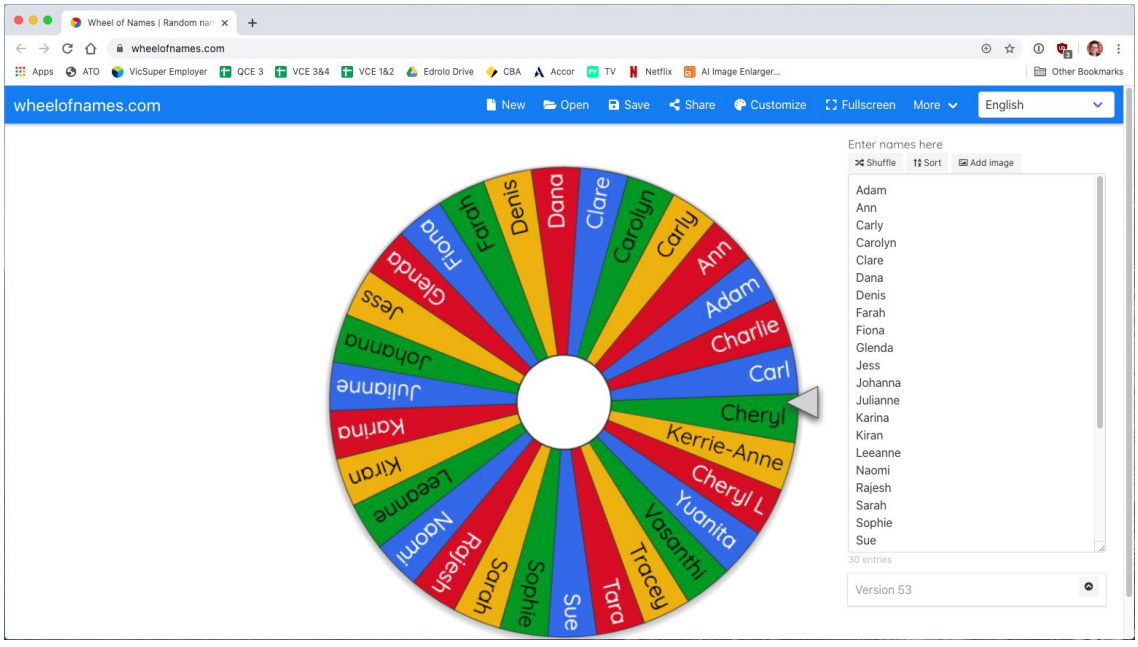
The Wheel of Names is a website, or a web app, really. It’s very simple; it only does one thing, but it does that one thing very well.

You enter your students’ names into the box on the right and then spin the wheel and it will choose a student from the list. This is great when you want to randomly select a student to answer a question, say.

Of course, you don’t have to put names on the right-hand side, you could list prizes, questions, assignment topics, anything!

You can also save a class list so that you don’t need to enter the names each time you use it.

The settings also let you change many parameters such as how long the wheel spins, and sounds that it makes.



Augmented Reality Apps

Earlier this year (in the United States only) Apple released the first iteration of their augmented reality/virtual reality headset—the Apple Vision Pro. This expensive piece of equipment shows just how Apple views the importance of augmented reality in our future.

There are however many inexpensive augmented reality (AR) apps available on smartphones that many people are not aware of. In each case, the app lets you view the real world through the lens of your smartphone, and as you do, they layer information over the top.

You shouldn't use these just because they are cool (which they are) but if you can find one that is appropriate to what you teach, you will find that it is a very engaging learning experience for your students.

Some of my favourites are:

- **Insight Heart** (biology)
- **JigSpace** (mechanics)
- **Seek by iNaturalist** (biology)
- **Photomath** (maths)
- **Google Translate** (language)
- **VirtualiTEE** (biology)
- **Sky Guide** (astronomy)
- **Boulevard AR** (art)
- **PeakVisor** (outdoor education)

Diffit

Diffit is a A.I. based web service that you can use to create differentiated content to meet the needs of different learners in your classroom.

You can give it a worksheet (PDF), past in some text, or even just describe a topic and Diffit will create resources for you at the reading level that you specify. If you then change the reading level, it will customise those resources for that reading level.

It will create reading material, multiple choice and short answer questions, a vocabulary list etc.

Diffit is found at diffit.me

Quizizz

Quizizz has been around for quite a long time, and most of that time it has been a good but fairly simple online quiz app, much like Kahoot! But recently Quizizz has undergone rapid development, particularly in its use of A.I. to differentiate resources. In many ways it does a similar thing to Diffit, but in a more fun way.

I particularly like the brand new “Accommodations” feature that allows you to customise/differentiate a quiz or lesson on a per-student basis. You might give one student extra time to answer each question, translate the quiz into a different language for another student and have the quiz written in a dyslexia-friendly font for a third student. Yet another student might only be presented with three options in a multiple-choice question. It’s really very good.

Quizizz A.I. can generate a quiz for you based on a topic that you give it, or on a worksheet that you upload, a website that you direct it to or even a YouTube video!

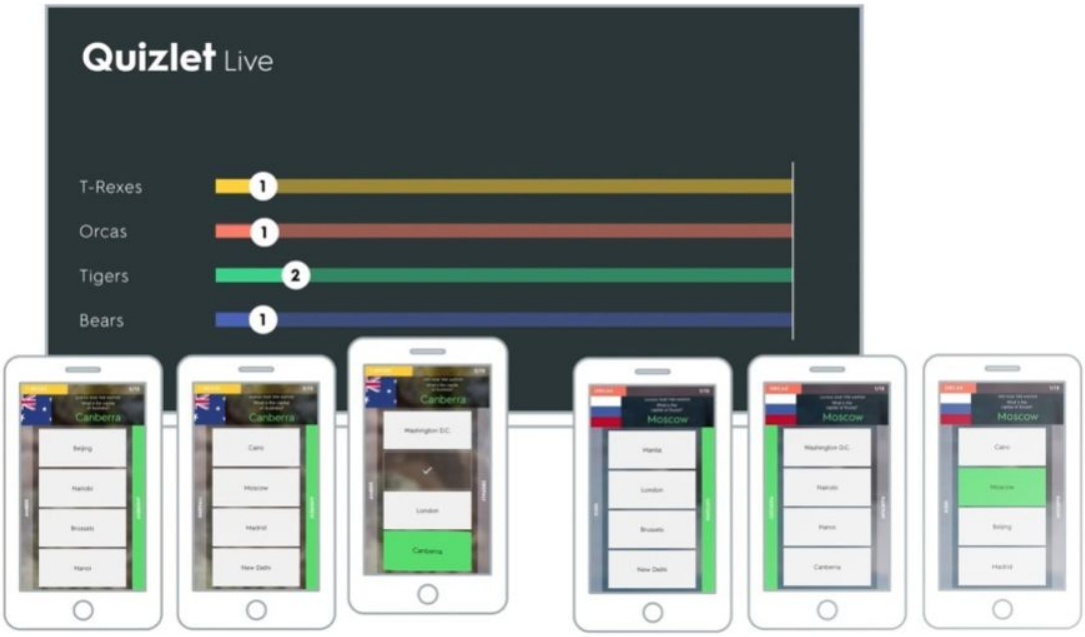
Quizizz is found at quizizz.com.

Quizlet Live

Quizlet live is part of a web app called Quizlet, which is all about spaced repetition. That is, it’s intended to expose students to content repeatedly so that they remember it.

I really like the Quizlet live feature, which pits teams of students against other teams. The way the game works is that the team is presented with a question, and each student has on their screen, several potential answers, but only one of the team members has the correct answer. Each question the team gets correct, moves their marker along the board, and the first team to reach the end wins. BUT if anyone in the team makes a mistake, the team’s marker is moved all the way back to the beginning! It’s quite frustrating. It is, however, a lot of fun. Don’t be surprised if there are shrieks of excitement and frustration while your class is playing it.

I love it because everyone in the team has to be involved in order for a team to win.



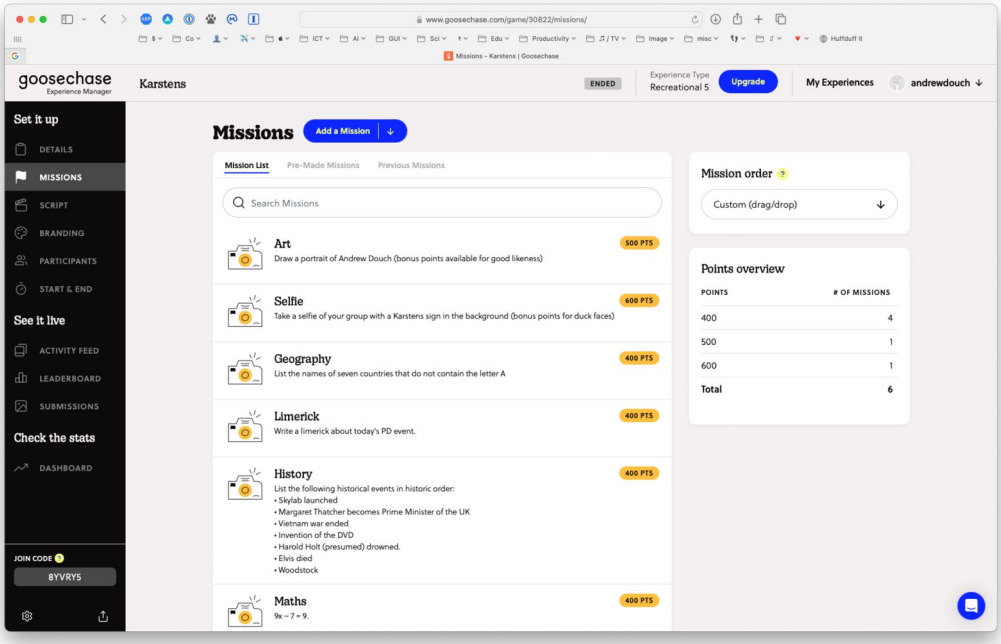
Goosechase

This is another really fun and engaging team game. It's a treasure hunt of sorts.

You create missions for students to complete. The missions can be anything you want, but when the mission is complete, the team must take a photo of their completed mission using the Goosechase app. This photo goes into the activity feed which is presented at the front of the room (or just on the teacher's laptop, perhaps).

As the completed missions are completed, you can assess them and award marks for them. The winning team is the one that completes all the missions to the highest standard in the time allowed.

Until recently Goosechase was prohibitively expensive. But now they offer an educator account which is free and allows you to have 5 teams of students, which is probably enough. If you are not an educator doing that would cost you more than $400 for each scavenger hunt! (or alternatively $850 per month). There are advantages to being a teacher!



Goosechase is at https://www.goosechase.com/

Weebly and Wooclap (and Quizizz again)

Mentimeter (www.mentimeter.com) and Wooclap (www.wooclap.com) are two very similar apps that allow a teacher to ask a question to which students can respond from their device. There are several different question types on each platform. Both have multiple choice, polls, word clouds, open answer questions, but then each platform has some different question styles that can be useful in certain contexts.

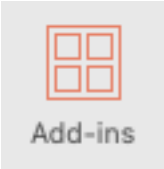
In Mentimeter I particularly like the 'scales' question type. In Wooclap I love the 'find on image' question type.

Both apps are freemium. You can make two or three questions per activity for free, but you can pay to have that limit removed. Honestly, I think a free account is all most teachers need.

It's worth mentioning that Quizizz now has a feature called "lessons" which is very similar to Mentimeter and Wooclap. It's new, and not quite as refined yet—but every time I look at it, it is better than it was. Watch this space. The speed with which Quizizz is evolving makes me think it could soon be the best option!

PowerPoint Add-ins

Many people are unaware that PowerPoint now has a feature called Add-ins that allows you to embed Mentimeter, Wooclap and many other similar web-based activities directly on a PowerPoint slide.



Depending on the version of PowerPoint you have and the computer system you are using, the Add-ins function could be in the Home tab or in the Insert tab.

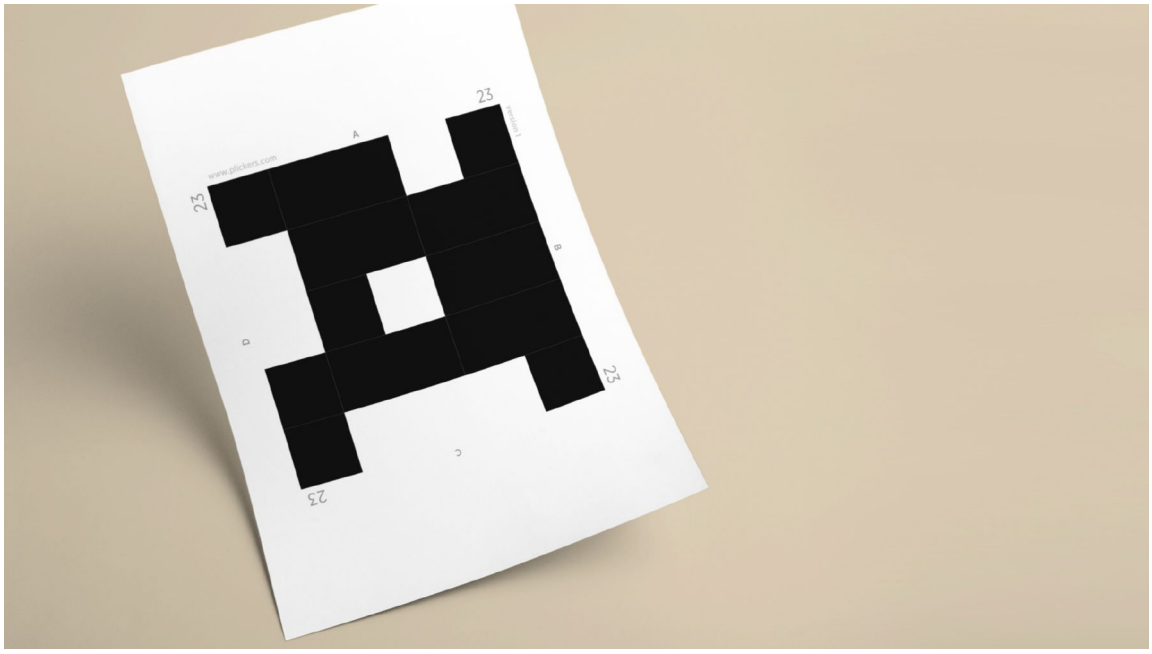
Plickers

Plickers (www.plickers.com) is one of my all-time favourite educational apps. It's a weird combination of amazing technology and absolute simplicity all in one.

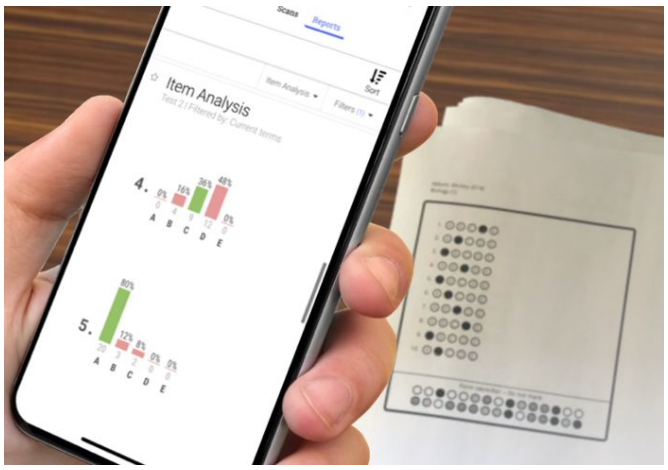
Students each have a QR-code like sheet of paper, with A, B, C and D around the edges. They hold this up to indicate their answer to a question, and you can scan the room with your phone, and the app records each student's response to the question for you to review at your leisure.

It's a great way to take the pulse of the room, or to test to see if everyone understands a concept that you have just explained.

It's a free app, too.



GradeCam Go



GradeCam Go! (app.gradecam.com) is one of a number of web-apps that have emerged recently to make marking test papers faster and easier. All these apps have advantages and disadvantages, but I like GradeCam Go! the most at this stage, for its ease of use, clear user interface and feature set.

The platform allows you to allocate an ID number to each of the students in your class. When students do the test, they colour in the bubbles to represent their number, and when you scan the papers, it also knows which student it is.

There is a free account, but it is limited in that:

- You can only create tests with 10 questions (paid accounts can have up to 100 questions), and you can only scan on a mobile device.
- There is no ability to export your data as a CSV file (to open in Excel, Numbers or Google Sheets).

For formative testing, a 10-question test is possibly enough, and you can always view the data on your iPhone/iPad/computer, even though you cannot export it as a CSV file. So, I think it's fine for informal, formative evaluation. If, however you plan to use it for larger tests, or for summative assessment, you will need an upgrade license. That said, for larger summative examinations, there are better alternatives that make use of sheet-feeding desktop scanners.

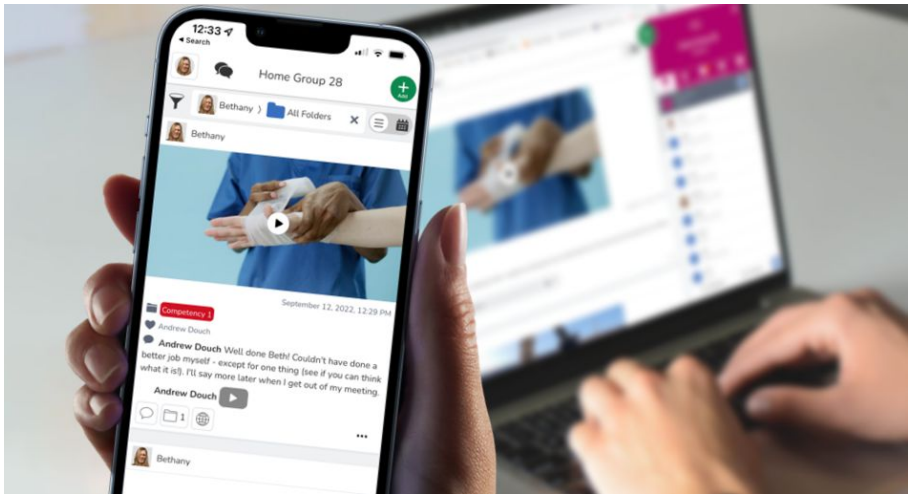
GradeCam is free with optional upgrades for tests with more than ten questions.

Seesaw

Seesaw is a fantastic learning journal app designed for students to record examples of their work in all sorts of ways, including text, video, photographs, and audio. It requires very little maintenance by the mentor/teacher, but the teacher is always able to see what students are adding to their journal. In addition to being able to see the journal entries being made by a student, the teacher can comment on student work, using text or by voice - or even video! A fantastic way to give students individual, differentiated, actionable feedback.

I cannot recommend Seesaw highly enough.

Schools can sign up for a site license which enables the IT department to administer classes, but for an individual teacher to use, it's free!



Weebly

Weebly (www.weebly.com) is a great website creation tool that teachers and students can use to publish a website. If you really need to manage your students' websites (rather than each of them having control over their own account, look at Edublogs. It's not nearly as nice, but it does allow a teacher to control what their students publish.

The great advantages of Weebly are that it is free, very easy to use and can be used to create great-looking websites. I use it to make my own website (www.andrewdouch.com.au) and I am very happy with it.

Flip (formerly known as Flipgrid)

Flip (flip.com) is a great tool that you can use if you want your students to share the fruit of their learning with other students in the class, but you want to spare them the embarrassment of giving a live talk to the class.

You can create a topic in Flip and assign it to your students. When they are ready, they can record their face and voice or their screen and voice to present their learning to the rest of the class.

The result looks like the introduction to the Brady Bunch, with a grid of videos, one from each student and the students can click any thumbnail to watch that student's video.

It's very good and is free.

VoiceThread

I think VoiceThread (voicethread.com) is in a similar class to Flip but it's more communal. Whereas in Flip you can have every student submit a video that is quite different to all the others, with different pictures etc. in VoiceThread everyone is talking about the same image/s. It's good for when you have an image that lends itself to different interpretations. A tile for each student who responds sit around the margin of the slide, and again, like Flip, you can click on them in any order to hear what that student has to say about the image.

A.I. tools for image creation and manipulation

I am a big fan of storytelling in education. Stories are engaging. People remember stories in a way that they don't remember lists and individual facts. Stories are, after-all the way people of all cultures and civilisations have passed on important information and concepts from one generation to the next. Stories are memorable.

Analogies are also very memorable. Like stories the find purchase in our memory, because they help us to build strong schemas—groups of ideas and facts united by common threads.

Both storytelling and analogy-making can be enhanced by great pictures that help the mind to create a strong visual image of something. But finding the perfect image of something is often hard. That is where a new breed of image tools based on artificial intelligence can really be the teacher's friend. If you have a crazy image in your mind, you can describe it to A.I.-powered image generating websites and they will create an image to illustrate it.

Some of the best tools for creating images (so far) are:

- Adobe Firefly
- Microsoft Copilot (which includes DALL-E)
- Google's Gemini (though currently it does not make pictures of people).

Other tools use A.I. to edit images. One of the most useful examples is Erase.BG (www.erase.bg/upload) by PixelBin (PixelBin.io) which removes the background from a subject in a photo. Sure, you can do that with Photoshop or some other high-end image editing tools, but the A.I. can do it so much faster, and unless you know what you are doing in Photoshop, it can do it better, too!

Remove.BG is not the only A.I. tool out there that can do this. But it's a good one.

Class Tools

Class Tools (classtools.net) is a website that has a whole collection of games, gadgets, activities and ideas that you might use once every so often to spice things up. Sometimes I just want to do something new with my students. I don't want to spend much time preparing it, but I want it to be something they have never seen or used before.

That's what Class Tools is good for. Among the many activities there these are some of the ones I have enjoyed:

Fakebook which students use to make a fake Facebook page (say for a famous person you are studying.

Fling the Teacher. Students answer questions and when they get them right, they get to fling a little picture of you, to try to hit a target.

QR code treasure hunt.

Venn Diagram Generator

Image Reveal (probably the tool I use the most from Class Tools)

Breaking News generator

Audience Soundboard

Many, many more. Have fun with them!