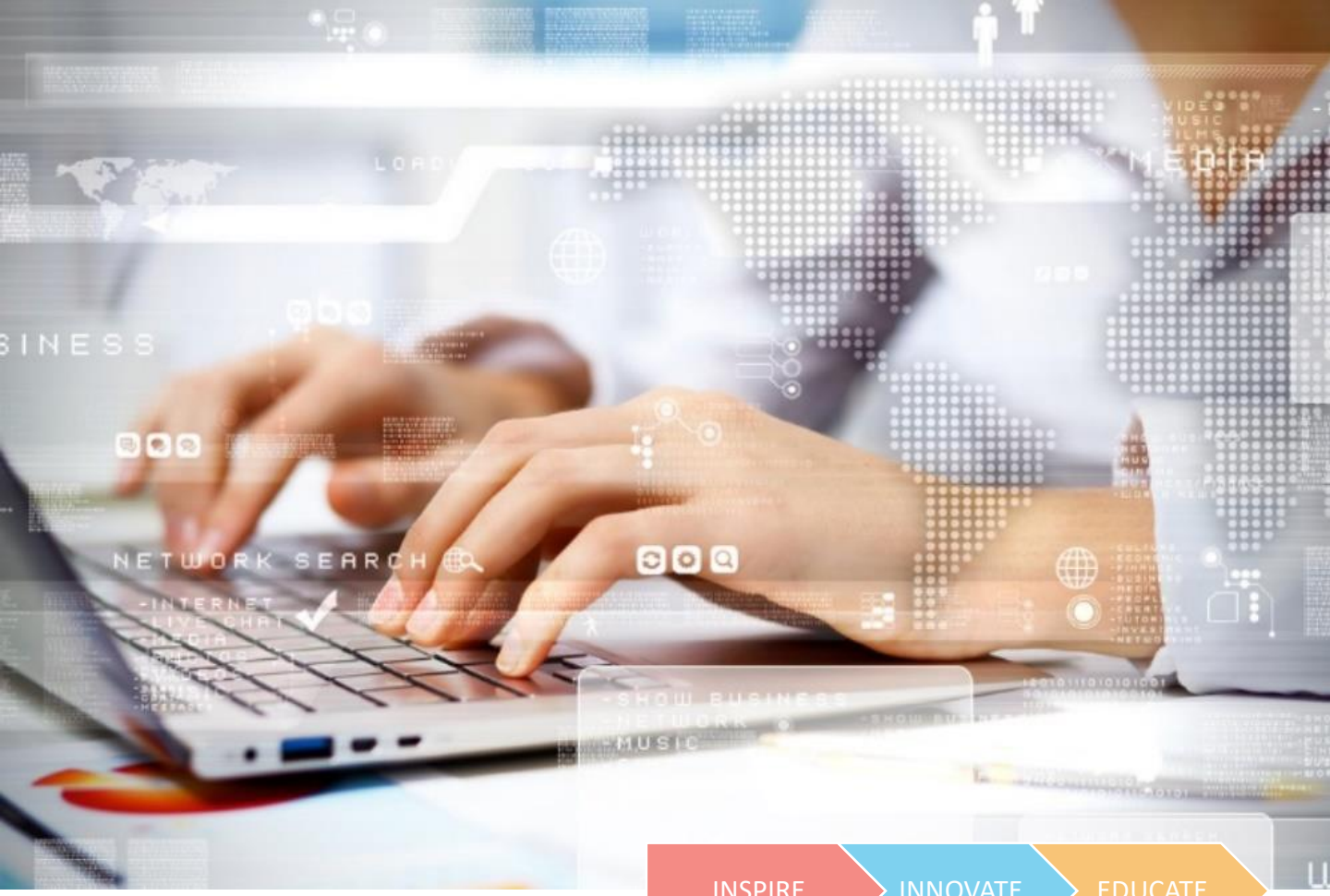

INSPIRE INNOVATE EDUCATE

eBook:

Key Trends Accelerating Technology Adoption

In K-12 Classrooms

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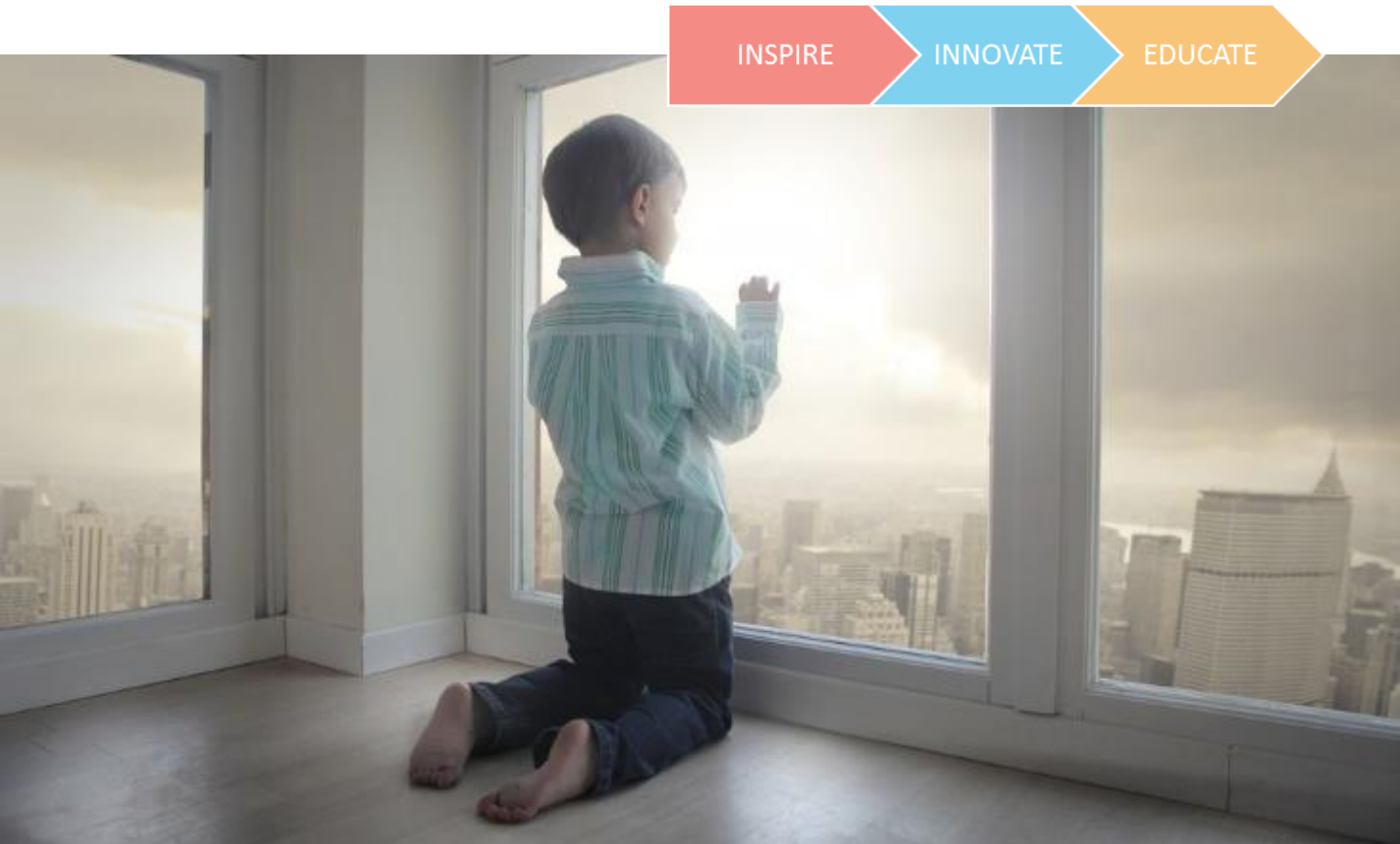

Technology Changes and Adoption

We often hear about innovation and creativity when discussing the future of education. Putting those ideas into practice in the classroom can be difficult because the ideas can be abstract. To compile a list of the innovative direction of education the New Media Consortium (NMC) publishes four reports each year covering current, present, and future states of education and innovation, called the Horizon Reports. These reports specifically cover the Library, K-12, Higher Ed, and Museum educational areas. You can download the reports at: http://www.nmc.org/?p=36 to get a complete in-depth look at what they cover.

In this eBook we'll take a look small segment of the K-12 2015 report looking at the *Key Trends Accelerating Technology Adoption*. We'll discuss the topics they deem important, and make suggestions of applications to your classroom, while turning the abstract ideas into practical applications.

It is ironic that we are still talking about technology adoption since technology has been such a huge part of the educational landscape for the last decade or more. Yet, the first section of the K-12 Horizon Report discusses the Key Trends Accelerating Technology Adoption. This section is broken down into 5 years, 3-5 years, and 1-2 years sections. In this eBook we'll only look at 1-2 and 3-5 year outlooks. Perhaps at a later date we'll dig deeper into the more long-term projections.

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Key Trends Accelerating Technology Adoption: 1-2 Years

The increase of blended learning & rise of STEAM learning are projected to become increasingly important in the next 1-2 years. Yet, how do we begin to integrate these two concepts into K-12 classrooms?

It is important to truly understand the definition of blended learning before we discuss how it can be applied to the K-12 environment. According to the Online Learning Consortium (2015), “Blended (also called Hybrid) Classroom Course – Online activity is mixed with classroom meetings, replacing a significant percentage, but not all required face-to-face instructional activities” (#4). To enable a blended classroom the teacher would use a learning management system (LMS) to complement their traditional face-to-face classroom teaching.

Application of Blended Learning

To begin to create a blended classroom teachers may post their syllabi, handouts, class notes, or videos on an LMS for students to access online and/or outside of class. Many teachers may choose to go paperless and have students turn assignments in electronically on the LMS as well. Additionally, online discussions are a great way for teachers to continue the in-class discussions outside of the physical four walls. Also, the Flipped classroom approach lends itself well to a blended classroom (see more on Flipped Learning here: http://flippedlearning.org/).Teachers and students both like this format because they are not tied to analog tools like textbooks and worksheets. Students do not have to worry about forgetting their materials at school because they can access the necessary tools anytime anywhere. This blended learning approach also satisfies students' needs to use their personal computing devices. To make it even easier, there are a variety of free LMS tools available for teachers to take their classroom to the next level and blend it.

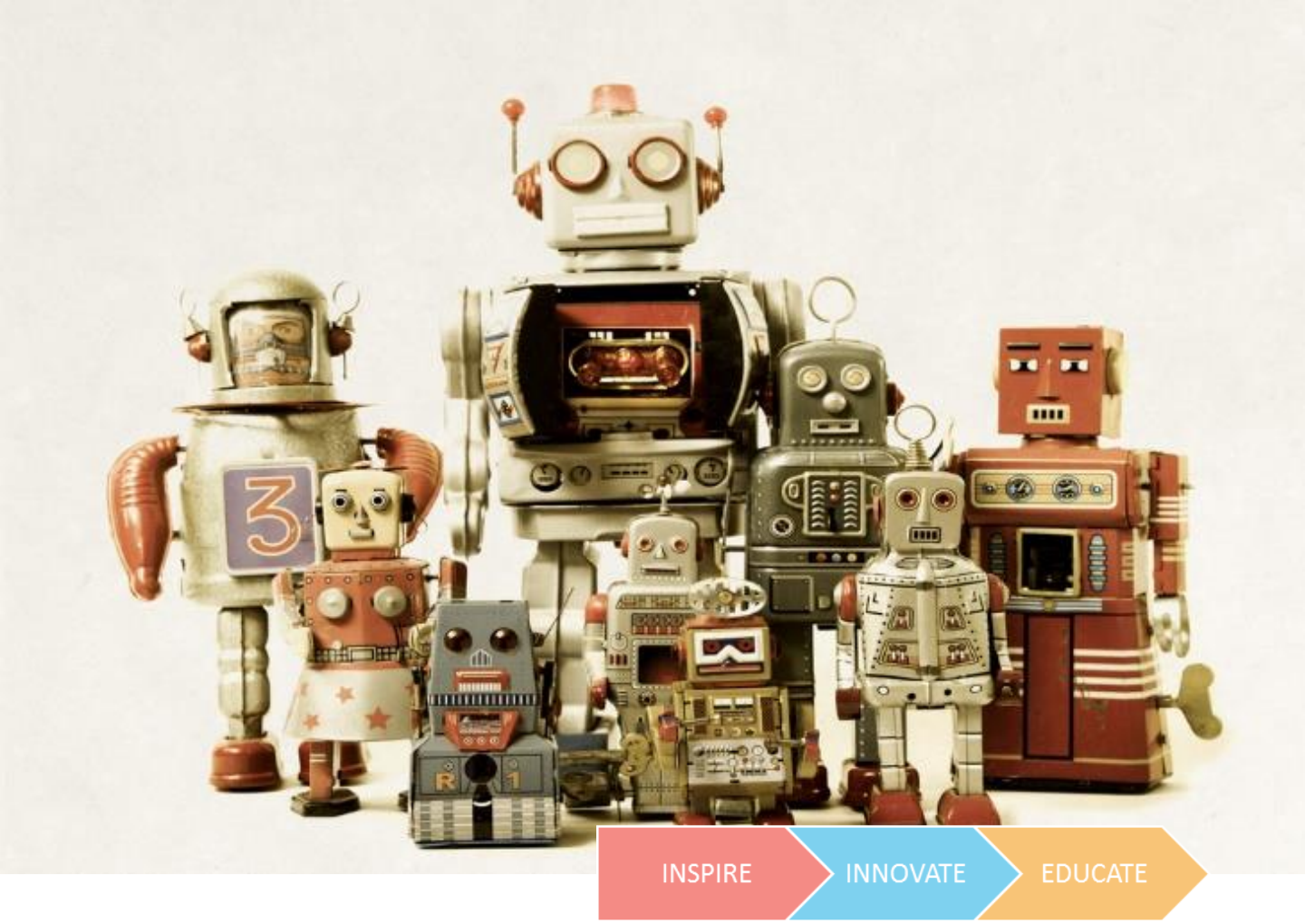
Free LMS Tools

The following are a few of my favorite, easy to use, LMS tools that are free for teachers. Each has its subtle differences, so you choose what is best for you and your students.

LMS COMPARISON

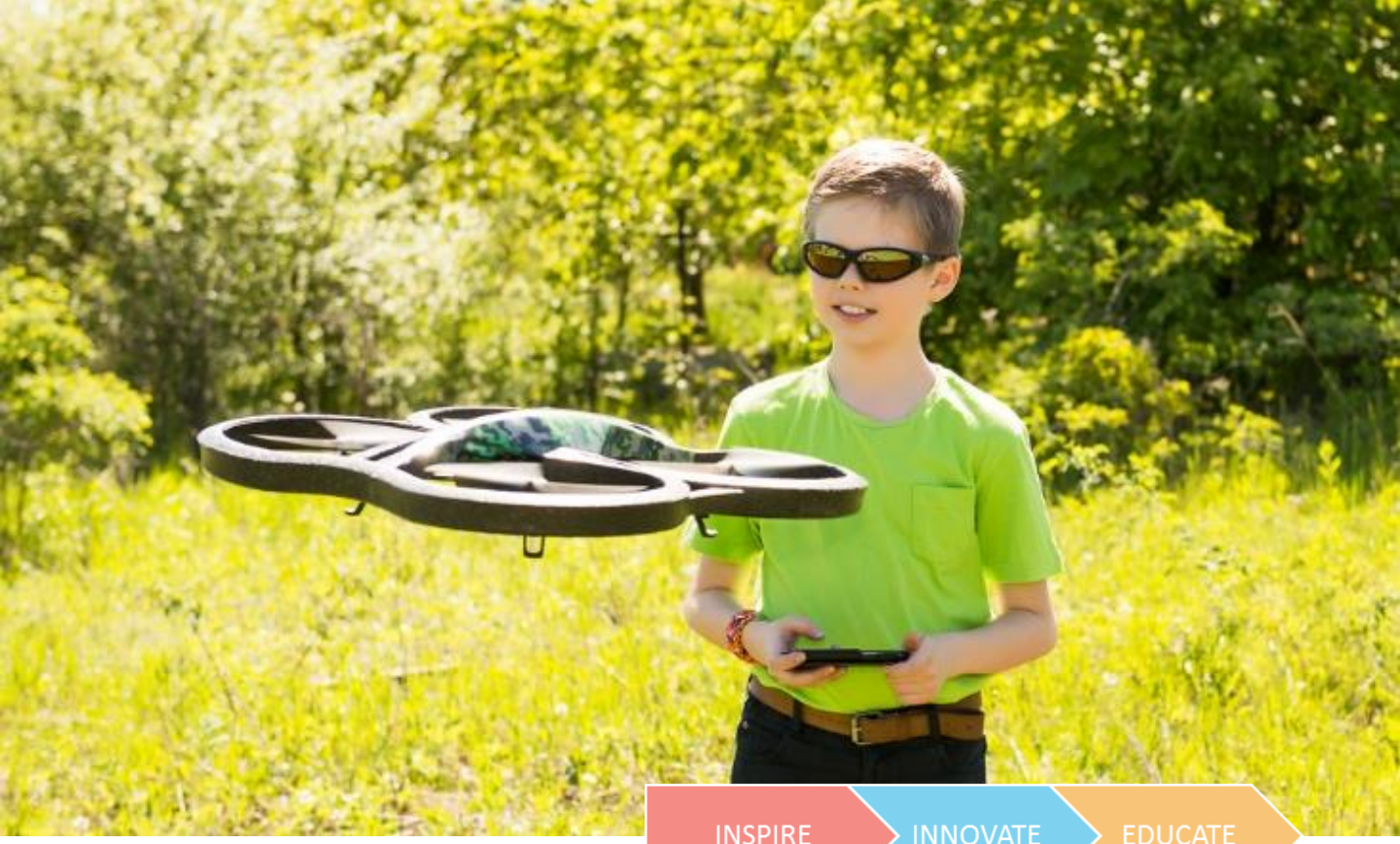
LMS Tool	Site	Pros	Cons
Canvas	https://canvas.instructure.com/register_from_website	•Robust •Integrated grading system •Ability for students to connect to their social networks to get notifications •Has an easy- to- follow textbook to help you get started	•Appearance is a little basic •Bigger learning curve
Edmodo	https://www.edmodo.com/teachers	•Looks a lot like Facebook •Great for younger grades •Easy to use	•Is very basic in features •Lacks some robust features
Google Classroom	https://classroom.google.com	•Integrates seamlessly with Google Apps for Education (GAFE) •Very easy to build and navigate like anything Google	•Must be a Google School or have and edu •Is still improving •Separates instructor and student accounts (instructors need a student account)
Haiku	https://www.haikulearning.com/	•Integrates easily with GAFE •Connects easily with Standards •Easy to use, similar to Schoology or Edmodo	•Limited features for solo teacher signup
Schoology	https://www.schoology.com/	•Has a good community connection feature for school wide information •Easy to use •Works a lot like social networks so students like it	•Basic features •Opens more features for the paid accounts

If you are just starting out with an LMS system, I'd suggest using Haiku, Schoology, or Edmodo since they are all very similar and easy to use. If you are already a Google School, then Google Classrooms is the logical choice. But if you are pretty tech savvy or catch on easily, Canvas is my number one choice. Canvas' textbook makes it very easy to learn the platform and also comes in an eBook form, find it on Amazon here: http://amzn.to/1nVxy2t. Those are just a few of my suggested LMS tools; however, if you would like to explore on your own there is good analysis of the top 8 open source LMS tools found here http://blog.capterra.com/top-8-freeopen-source-lmss/.



Application of STEAM

Yes, STEAM, not STEM. You are probably familiar with STEM: Science, Technology, Engineering, and Math; however, after utilizing STEM for sometime, educators found that the Arts were missing. So they added “A” to connect the Arts to those projects. Unfortunately, for some time when schools’ budgets were cut, the arts were the first to go. STEAM adds the necessary art component to foster creativity in children. Creativity is what makes our children innovators and innovation is what our growing technology climate demands.



Resources For STEAM

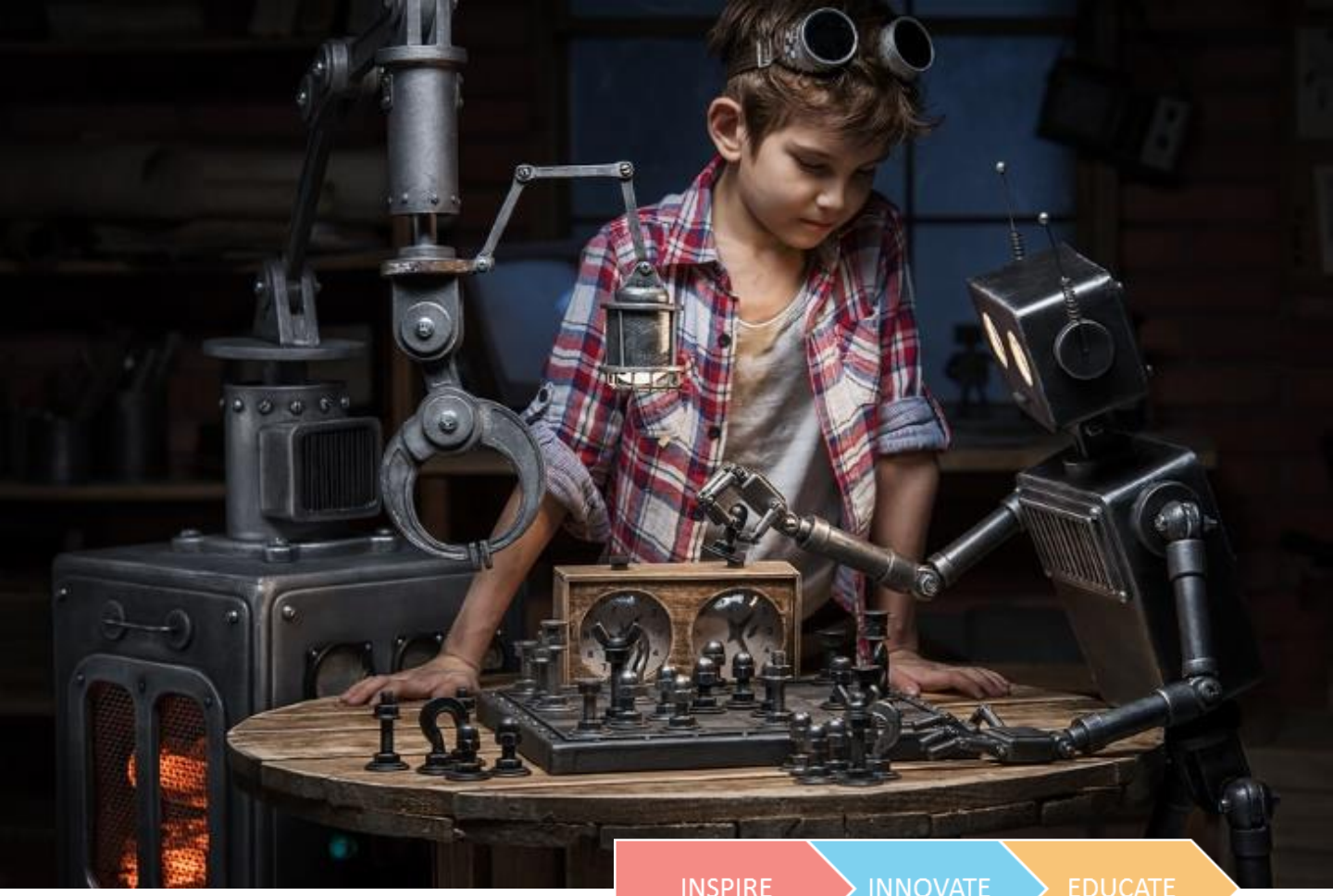
When integrating STEAM into your classroom, you look at a holistic approach to education. Rather than isolate one subject from the other, you create more project-based activities, ensuring that each of the components are taught within those lessons. This approach provides students with more real-world applications of necessary skills to apply later in life. How do you get started or what does it look like? When you start to plan your lessons take each of the components, S-T-E-A-M, think of an area or topic to study, and tease out how you can connect each subject matter together. If you are uncomfortable with it at first, I recommend partnering with other teachers that may have more experience in those subject areas that you may not be as comfortable teaching. However, anytime I ask teachers to do something new, I ask them to utilize their resources. There are a ton of resources if you Google “STEAM classrooms” or search Pinterest.

STEAM EXAMPLE

The following is a great example of how to start planning a STEAM lesson that I found on Sarah Weaver's (2014) blog:

- Recycled Art – STEAM
- 14APR
- This art piece was created by my 5th graders using recycled bottle caps (it took us the entire school year to collect).

STEAM teaching points:
Science – Importance of recycling and the dangers of plastic in the environment.
Technology- Computer graphing and internet research to decide on a topic. Students created a Google Form survey to poll the class.
Engineering- Constructing and building the art piece.
Arts- Color and placement of caps.
Math- Measurement of the bottle caps and backing measurements. Students also learned how to calculate the diameter, radius, area and circumference of a circle (bottle cap) ("Recycled Art - STEAM," 2014).



ADDITIONAL STEAM RESOURCES

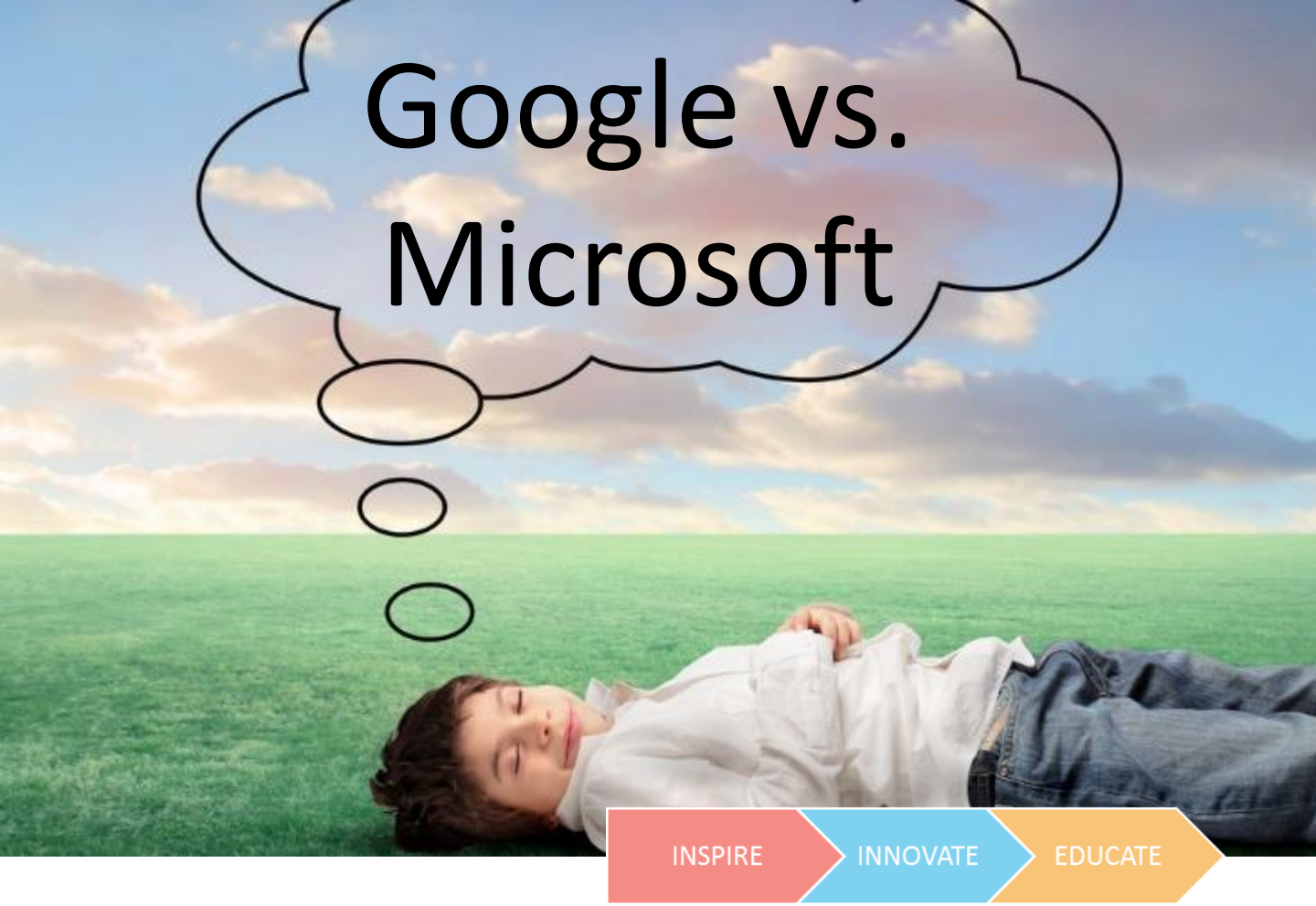
You can find more on The STEAM Powered Classroom website (http://steampoweredclassroom.com/). It is very comprehensive with information, resources, and examples of how to integrate STEAM practices into your website.

Key Trends Accelerating Technology Adoption: 3 - 5 years

Increasing use of collaborative learning approaches & a shift from students as consumers to creators are projected to be common practice in education within the next 3 - 5 years. These two topics go hand-in-hand. If students are working more collaboratively, they will inherently become creators rather than consumers. The traditional way of teaching and learning required students to sit quietly at a desk, take notes, memorize the material, and test on it later. They were to consume and later regurgitate the information. With technology making our innovative future growing so quickly, consuming and regurgitating is less of a requirement in today's working environment. Companies want employees to work together collaborating to find solutions. Using collaborative learning approaches can include teaching strategies such as Project or Problem-Based Learning (PBL), using cloud computing tools such as Google Apps for Education (GAFE) or Microsoft 360 Online (MS 360 OL), and connecting with other teachers and students around the world with tools such as Skype for Education or ePals.

PBLs

There is a difference between Project-Based Learning and Problem-Based Learning. Project-Based Learning tends to be longer projects and cover multiple subject areas (STEAM projects could fit into this category); whereas, Problem-Based Learning tend to be shorter, smaller projects that are single-subject. There is a good comparison chart listed on Edutopia's website here: http://www.edutopia.org/blog/pbl-vs-pbl-vs-xbl-john-larmer (Larmer, 2015). Yet PBLs are a great way to convert students from consumers to creators while being collaborative in nature.



Cloud Computing Tools

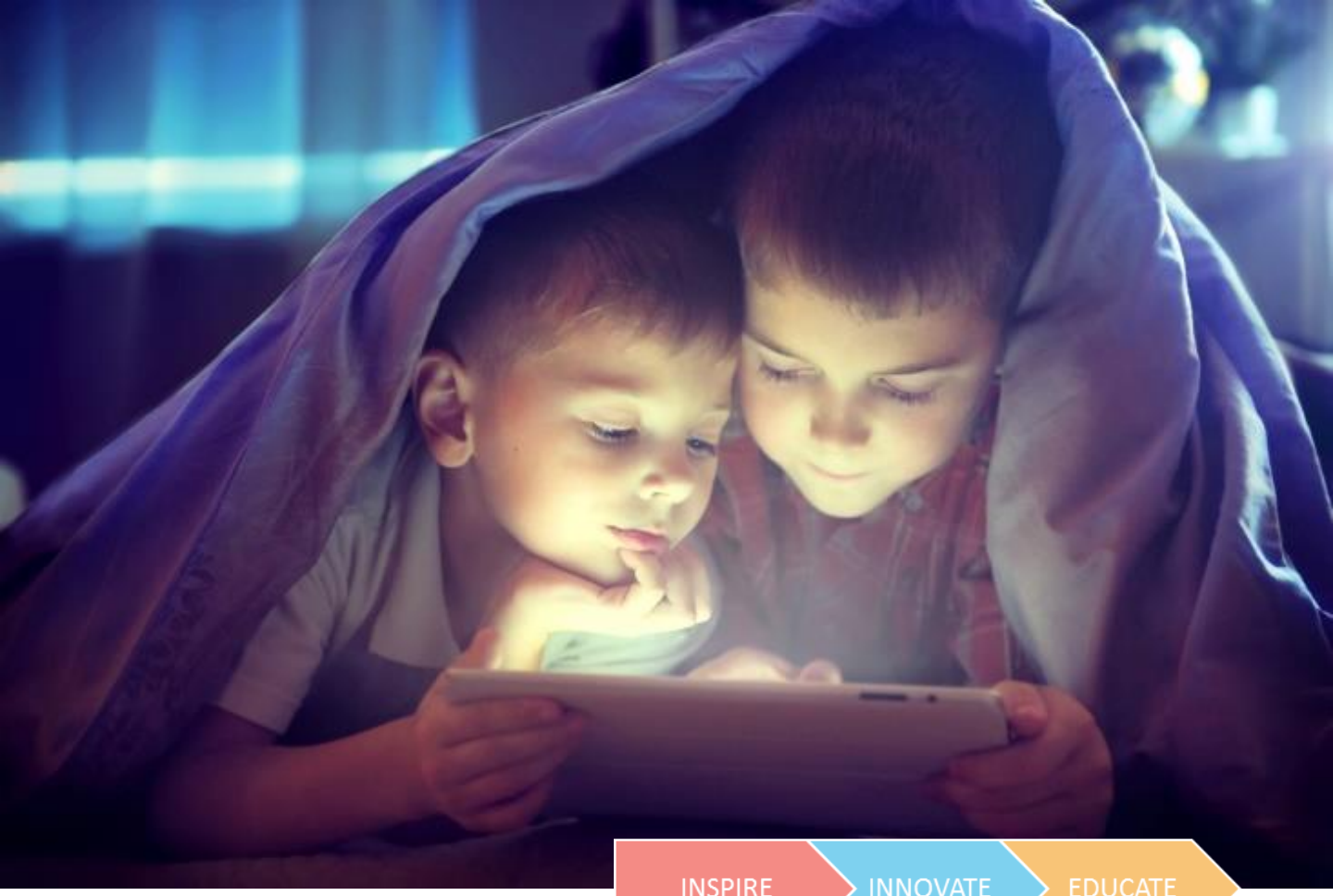
There are many great cloud computing tools that allow students to simultaneously work together physically or remotely. The two front runners are GAFE (Google Apps for Education) and MS 360 OL (Microsoft 360). The two platforms allow students to share work with other students or their teachers, while offering the ability to type on the same document at the same time without needing to save and send the document back and forth to one another. These robust tools allow users to see in live time what the other editors are typing. They offer a chat box within the programs to have sidebar conversations as well as many of the other Microsoft Word traditional features like *track changes* or *commenting*. Start using these tools by having students create slide presentations together or peer edit each other's writing. They are not only good for student work, but for collaborative unit writing amongst teachers as well.

K-12 Daily Dose Blog Post | GAFE vs. MS360

Global Connections

Becoming globally connected is becoming easier and easier with the use of tools such as Skype for Education and ePals. These tools are free for educators and provide resources for lesson plans or the means to connect with others on projects that interest you and your students. By connecting with teachers and students around the world you can plan projects, cultural experiences, or have general correspondence (think penpal). To get started, just sign up for a free account in both or either of the sites https://education.skype.com/ or http://www.epals.com/. Schools, museums, and national parks have partnered up with these companies to provide enriching learning experiences for students as well, bringing hard-to-plan field trips to your door. With webcam technology, students can now experience things without ever having to leave the classroom.

If you want to personalize your lesson, you can create a profile and submit a request to collaborate and/or connect with other teachers and classrooms around the country or around the world. Simply state your subject area, grade level, and a brief overview of what you are looking for and other teachers will get in touch with you. These tools make it easy to have students collaborate and connect with each other turning them into creators of high quality content.



Conclusion

With the constant pressure on education and the need to keep up with technology, these couple of tips will help you create valuable learning experiences for your students. Don't feel like you have to do it all right away. Remember the NMC has put these on the 1-2 and 3-5 year plans for education. I suggest you take your time, pick one thing you want to try, and work with it for the rest of the school year. Be patient, allow yourself to fail but reach out to others if you need help. You have many resources at the touch of a mouse click. Keep the mantra in mind that you tell your students, *If you try, you can do it.*

Let BTE help your K-12 school use technology to its fullest. Contact BTE today!

http://www.beyondk12.com/free-consultation

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