By Liz Keren-Kolb

Engage, Enhance, and

Find out what these terms really mean when you integrate technology

Educators often say that technology is more than a gimmick or add-on, and that it should engage, enhance, or extend learning in ways that traditional tools do not. Yet we seldom stop to define these terms, and they can be confusing, especially for teachers and preservice teachers.

Recently, I collaborated on an English language arts and technology integration assignment with a literacy instructor. We asked a group of our student teachers to create technology-enhanced performance assessments for eighth graders who had been involved in book clubs. We told the student teachers that the technology must "engage, enhance, or extend" the learning in some profound way that traditional strategies could not.

After the performance assessments were handed in, we found the student teachers' definitions of engaged, enhanced, or extended learning varied greatly. For example, one student teacher wanted to have his eighth graders create a Prezi where the students would pick a character from a novel and use quotes from the book to explain the character's position on technology in society (the book club's overarching question was about technology in society).

The student teacher explained that this was "true" technology integration because the eighth graders were "engaged" in the excitement of using an innovative tool like Prezi to create their presentations.

The literacy instructor and I realized that while yes, using technology in and of itself is almost always a bit more motivating or engaging, it does not necessarily mean that students will engage more in their understanding of the learning goals. Then the literacy teacher turned to me and asked me the difference between *engaging* via technology and *enhancing* with it. Is one better than the other, she wondered. Should all technology integration engage, enhance, *and* extend to be effective integration?

I realized that I needed to be explicit with the student teachers as well as with my teaching colleagues about the difference between engaging, enhancing, and extending learning when integrating technology.

While we have studies that focus on the importance of technological, pedagogical, and content knowledge, we rarely define the difference between *engaging* and *enhancing* or discuss whether one is better than the other when using technology.

That's why I feel it's important to understand what we mean by these words. Below I have defined the terms *engagement, enhancement,* and *extension* as they relate to technology integration projects:

Engagement. The teacher is trying to find a way to motivate or interest disengaged students.

Enhancement. This is using technology to develop understanding of learning goals that could not have been accomplished without those tools.

Extension. The technology brings learning outside the classroom walls and into students' everyday lives, where they can continue to grow after they leave school.

Enhance

Engage

Extend Learning!
into your lessons.

Extend

DEFINITIONS

To get a clearer idea of exactly what these terms mean when talking about technology integration projects, we need to define them further.

Engage the technology:

- Allows students to focus on the assignment with less distraction
- Motivates students to start the learning process
- Causes a shift in students' behavior from passive to active learning

Enhance the technology:

- Lets students develop a more sophisticated understanding of the content
- Creates a way to make it easier to understand concepts or ideas.
- Allows students to demonstrate their understanding in a way that they could not with traditional tools

Extend the technology allowing students to:

- Learn outside of their typical school day
- Bridge their school learning with their everyday life experiences
- Grow as lifelong learners, without the need for the teacher or school to continue to use the tools
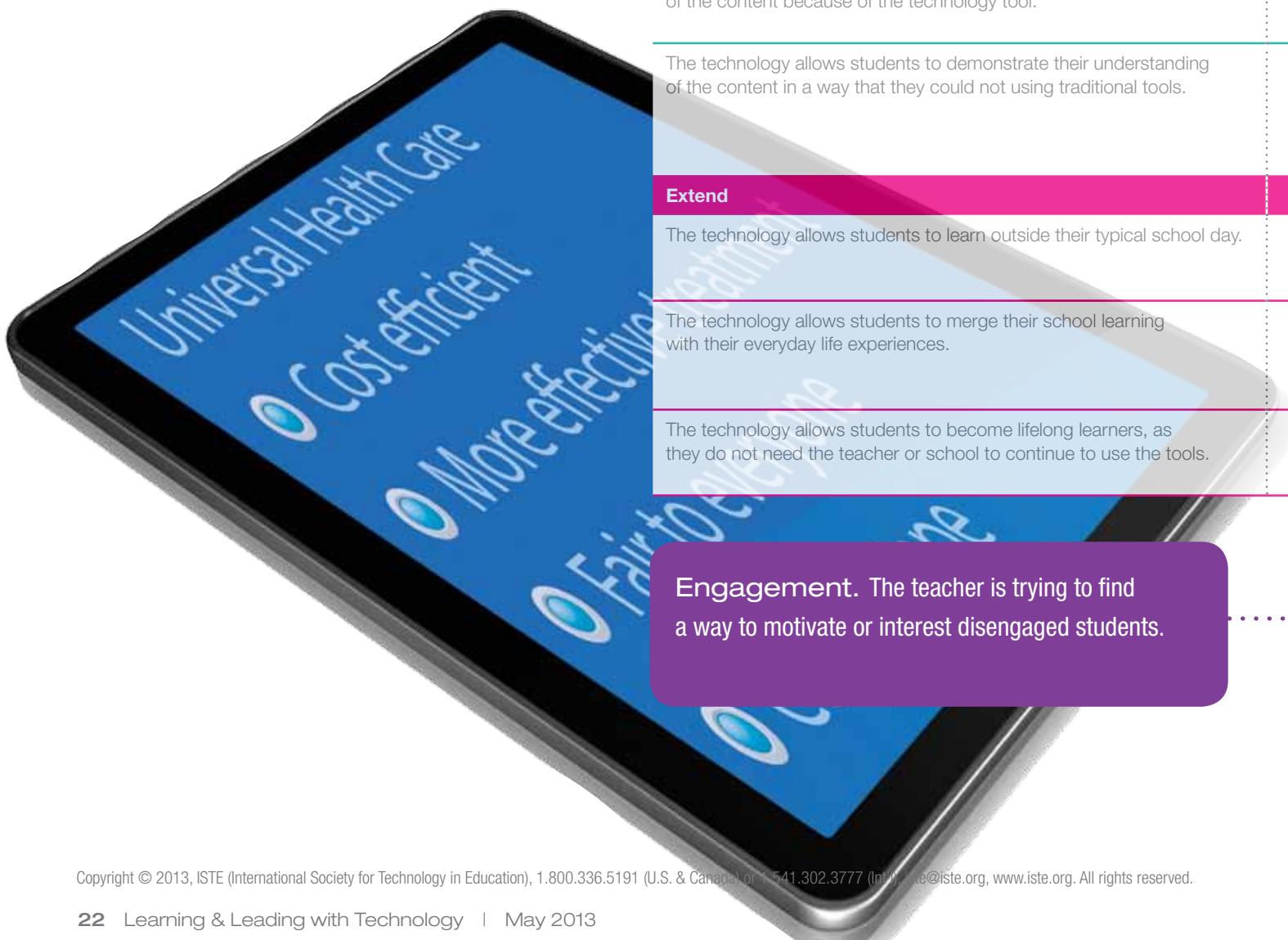
Engage

Scenarios

Here are some scenarios of technology integration. After each scenario is a table indicating where in the hierarchy the integration falls: engagement, enhancement, and/or extension.

Scenario #1. The teacher asks sixth grade students to develop their own websites using Weebly.com. The content must be based on a controversial issue in social studies. It must include evidence for one side of an issue, using at least four arguments for either the pro or con side of the issue. For example, students could argue for or against universal health care or drafting women into the military.

The table indicates what type of integration project this actually is.

Conclusion from Scenario #1: Students are somewhat engaged, and the learning is possibly enhanced for some students who have everyday experience building webpages.

Scenario #1

Type
Engage
The technology allows students to focus on the assignment/activity with less distraction.
The technology motivates students to start the learning process.
The technology causes a shift, where students move from passive to active learners.
Enhance
The technology allows students to understand in a way that is easier than a traditional tool.
Students are able to develop a more sophisticated understanding of the content because of the technology tool.
The technology allows students to demonstrate their understanding of the content in a way that they could not using traditional tools.
Extend
The technology allows students to learn outside their typical school day.
The technology allows students to merge their school learning with their everyday life experiences.
The technology allows students to become lifelong learners, as they do not need the teacher or school to continue to use the tools.

Engagement. The teacher is trying to find a way to motivate or interest disengaged students.

Yes	Somewhat	No
	Students could potentially focus more on building their webpages than on traditional classroom distractions. Yet they could get distracted on the web as well.	
Using a template-based but design-heavy webpage tool should excite the students.		
Having students develop their own webpages requires them to become active learners, and it's possible only with the technology tool.		
		Students are taking what they would traditionally write in a paper and putting it on the web. This is not necessarily allowing them to understand the content or form their arguments any better.
		Students will not be using the tool to develop an argument but will just be presenting an argument.
		Students could present their arguments to demonstrate their understanding in many traditional ways, such as by writing a paper, presenting to the class, or completing an oral exam.
		Because students are posting information on a website, they are not necessarily learning via the tool outside of the school day.
	If students tend to build webpages in their everyday lives, there could be some connections with their everyday life experiences.	
		No learning is associated with posting information on a webpage template, so the technology doesn't ensure lifelong learning.

The technology allows students to focus on the assignment/activity with less distraction.

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The technology motivates students to start the learning process.

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The technology causes a shift in students' behavior from passive to active learning.

Enhance

Scenario #2. The directions are the same as Scenario #1 on page 22, but with these added instructions: The teacher asks students to also include at least two interactive features on their sites allowing visitors to comment, participate in a poll, or do some activity that would contribute knowledge or further the debate on the website.

The table indicates what type of integration project this actually is.

Conclusion from Scenario #2: Overall the students are engaged in the assignment, and it has the ability to enhance their learning and deepen their understanding of the topic through the interactive features on their webpages. In addition, the assignment may allow for some extended learning beyond the school day if the students choose to participate in discussion boards and respond to polls at home or on their own time.
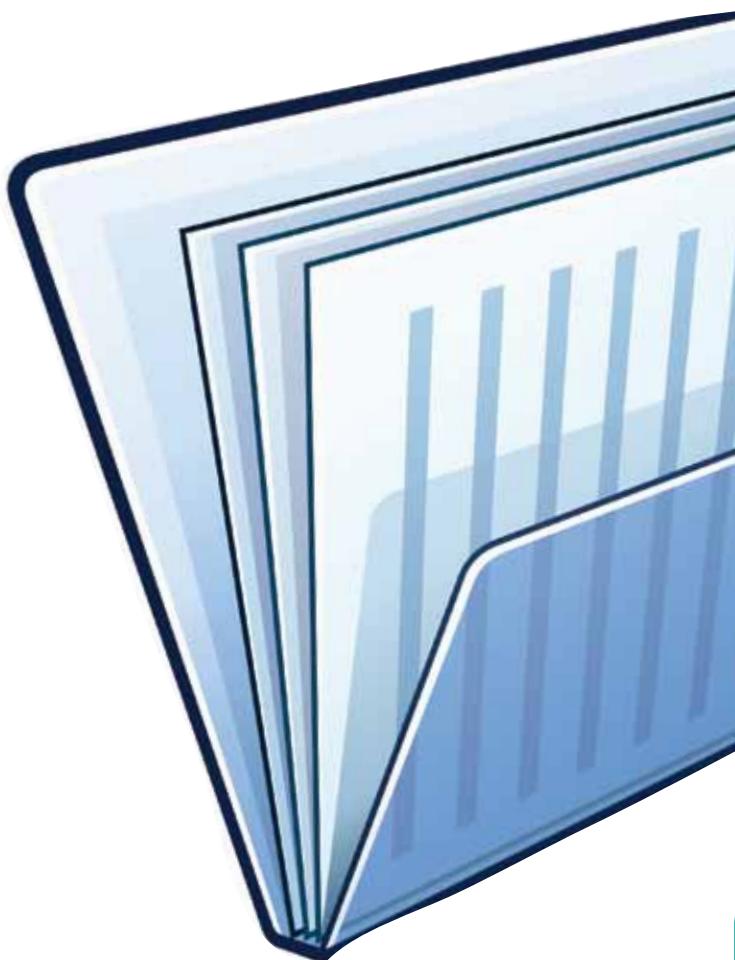
Scenario #2

Type
Engage
The technology allows students to focus on the assignment/activity with less distraction.
The technology motivates students to start the learning process.
The technology causes students to shift from passive to active learners
Enhance
The technology allows students to understand in a way that is easier than a traditional tool.
Students are able to develop a more sophisticated understanding of the content because of the technology tool.
The technology tool allows students to demonstrate their understanding in a way that they could not using traditional tools.
Extend
The technology allows students to learn outside of their typical school day.
The technology allows students to merge their school learning with their everyday life experiences.
The technology allows students to grow as life-long learners (where they do not need the teacher or school to continue to use the tools).

Enhancement. Using technology to develop understanding of learning goals that could not have been accomplished without those tools.

Yes	Somewhat	No
	Students could potentially focus more on building their webpages than on traditional classroom distractions. Yet they could be distracted on the web as well.	
Using a templated, design-heavy webpage tool should excite the students.		
Developing their own webpages requires students to become active learners, which is only possible with the technology.		
Students are taking what they would traditionally write in a paper and putting it on the web. In scenario #2, they are integrating elements of interaction (to elicit dialogue around the information in the website). This is not something they could easily do using pen and paper.		
Students are polling and asking visitors to participate in the debate. This should develop a deeper understanding of the issue and potentially create more evidence for both the pro and the con sides of the issue.		
With the addition of the interactive features, the students will be required to defend their arguments to the viewers of the website through discussion or commenting prompts.		
	Students may choose to participate in the discussions outside the school day.	
	Students who build webpages in their everyday lives and/or participate in chat and discussion rooms online could find connections with their everyday life experiences.	
	Because students are posting information on a website, they are not necessarily learning via the tool outside of the school day. However, the conversations that could occur as part of the comments and discussion may continue after the assignment is completed, thus allowing lifelong learning.	

| Students are able to develop a more sophisticated understanding of the content because of the technology tool. | The technology creates a way to make it easier to understand concepts or ideas. | The technology tool allows students to demonstrate their understanding in a way that they could not with traditional tools. |

Extend

Scenario #3. The directions are the same as Scenario #2 on page 24, but with these added instructions: Students can use their mobile devices to update their webpages using the Weebly mobile app. The students can also use their mobile devices to record interviews, take videos, and shoot pictures that they can immediately post to their webpages to use as evidence.

The table indicates what type of integration project this actually is.

Conclusion from Scenario #3: Overall, the students are engaged in the assignment because they can use their mobile devices as well as the webpage template. Second, the assignment will enhance students' learning and deepen their understanding of their chosen controversial issues through both the interactive features on their webpages and the mobile data they collect on the go. In addition, the assignment allows for extended learning beyond the school day. By having students use their personal mobile devices, they can choose when, where, and how to collect data as evidence of their everyday lives and send it to their websites.

These scenarios illustrate how you can implement the same general assignment in different ways to promote only engagement; engagement and enhancement; or engagement, enhancement, and extension of learning. Although just having one of the three types is sufficient reason to use technology, having all three lets you develop the innovative projects that allow for lifelong learning opportunities and a deeper understanding of learning goals.

Scenario #3

Type
Engage
The technology allows students to focus on the assignment/activity with less distraction.
The technology motivates students to start the learning process.
The technology causes students to move from passive to active learners
Enhance
The technology allows students to understand in a way that is easier than a traditional tool.
Students are able to develop a more sophisticated understanding of the content because of the technology tool.
The technology tool allows students to demonstrate their understanding in ways they could not using traditional tools.
Extend
The technology allows students to learn outside of their typical school day.
The technology allows students to merge their school learning with their everyday life experiences.
The technology allows students to become lifelong learners, where they do not need the teacher or school to continue to use the tools.

Extension. The technology brings learning outside the classroom walls and into students' everyday lives, where they can continue to grow after they leave school.

Yes	Somewhat	No
Students could potentially focus more on building their webpages than on traditional classroom distractions. Yet they could get distracted on the web as well. Allowing students to capture data (via their mobile devices) on their own time removes the concern of distraction during classroom time. Students can self-pace through the activity.		
Using a templated, design-heavy webpage tool should excite the students, and allowing students to use their own mobile devices will ensure familiarity with the tool.		
Developing their own webpages requires students to become active learners, which is possible only when using the technology tool. In addition, students become active in their everyday communities by capturing data to send to the website.		
Students are taking what they would traditionally write in a paper and putting it on the web. In scenario #2 and #3 they are integrating elements of interaction (to elicit dialogue around the information in the website). This is something they could not do on paper as easily.		
Students will be polling and asking website viewers to participate in the debate, which should help develop a deeper understanding of the issue and potentially more evidence for both the pro and the con side of the issue.		
The interactive features require students to defend their arguments to the website visitors through forums or commenting prompts.		
By allowing students to use their mobile devices to post and record evidence, students stretch their learning beyond the classroom.		
Being able to use mobile devices to collect data and evidence allows them to use their personal tools in the classroom and blend their everyday experiences with their classroom learning. Students are also able to capture data from their everyday world.		
Students are learning to collect data, capture evidence, and form arguments with an everyday device. This is something they could replicate as they continue to grow as learners both inside and outside of school.		

| Students are able to develop a more sophisticated understanding of the content because of the technology tool. | The technology creates a way to make it easier to understand concepts or ideas. | The technology tool allows students to demonstrate their understanding in a way that they could not with traditional tools. |

Liz Keren-Kolb is a clinical assistant professor in educational technology at the University of Michigan in Ann Arbor. She is also the author of several books on cell phones in learning, including Toys to Tools: Connecting Student Cell Phones to Education *and* Cell Phones in the Classroom: A Practical Guide for Educators*. She is a former secondary social studies teacher.*